

TABLE OF CONTENTS

TABLE OF CONTENTS.....	1
Week 1 : Beginning The Planning Phase.....	4
Learning Objectives.....	4
1.1 Understanding The Planning Phase Components.....	4
1.1.1 The benefits of project planning.....	4
1.1.2 Launching the planning phase.....	5
1.1.3 Reflection: Project planning considerations.....	6
1.1.4 Facilitating a project kick-off meeting.....	6
1.1.5 Tips for leading a successful kick-off meeting.....	8
Test your knowledge: The planning phase components.....	10
1.2 Defining Tasks And Milestones.....	11
1.2.1 Understanding tasks and milestones.....	11
1.2.2 The importance of setting milestones.....	12
1.2.3 How to set milestones.....	13
1.2.4 Setting milestones: Best practices.....	14
1.2.5 Practice: Assigning tasks to milestones.....	16
1.2.6 Creating a work breakdown structure.....	16
1.2.7 Breaking down the work breakdown structure.....	19
1.2.8 Explore: Project Plant Pals: Planning.....	20
1.2.9 Activity: Use a WBS to create milestones and project tasks - Part 1.....	21
1.2.10 Activity: Use a WBS to create milestones and project tasks - Part 2.....	23
Weekly Challenge 1.....	28
Week 2 : Building A Project Plan.....	32
Learning Objectives.....	32
2.1 Getting Started With A Project Plan.....	32
2.1.1 Components of a project plan.....	32
2.1.2 Putting together the pieces of a project plan.....	33
Test your knowledge: Getting started with a project plan.....	35
2.2 Using Estimation To Set Project Timelines.....	36
2.2.1 Making realistic time estimates.....	36
2.2.2 Case study: Run fast, pay later.....	38
2.2.3 Reflection: Time estimation.....	40
2.2.4 Overcoming the planning fallacy.....	40
2.2.5 Capacity planning and the critical path.....	43
2.2.6 Creating a critical path.....	44
2.2.7 Identify: Time estimation methods.....	48
2.2.8 Getting accurate time estimates from your team.....	49
2.3 Utilizing Tools To Build A Project Plan.....	51
2.3.1 Developing a project schedule.....	51
2.3.2 Project plan best practices.....	52

2.3.3 Creating a project plan: Tools and templates.....	54
2.3.4 Introduction to Kanban boards.....	56
Test your knowledge: Utilizing tools to build a project plan.....	58
Weekly Challenge 2.....	59
Week 3 : Managing Budgeting And Procurement.....	63
Learning Objectives.....	63
3.1 Understanding Project Budgets.....	63
3.1.1 The importance of budget setting.....	63
3.1.2 Key components of a project budget.....	64
3.1.3 Project budgeting 101.....	65
Test your knowledge: Understanding project budgets.....	68
3.2 Managing A Project Budget.....	69
3.2.1 Creating a project budget.....	69
3.2.2 Helpful budget templates.....	71
3.2.3 Maintaining a project budget.....	72
3.2.4 Overcoming budgeting challenges.....	73
3.2.5 Activity: Develop a project budget.....	75
Test your knowledge: Creating a project budget.....	77
3.2.6 Introduction to budgeting terms.....	79
3.3 Introduction To Procurement.....	80
3.3.1 Understanding procurement.....	80
3.3.2 The procurement process.....	81
3.3.3 Tips for the procurement process.....	82
3.3.4 Common procurement documentation.....	84
3.3.5 Creating a Statement of Work.....	85
Test your knowledge: Introduction to procurement.....	88
3.3.6 Activity: Complete a Statement of Work.....	89
3.4 Navigating Procurement Challenges.....	92
3.4.1 Obtaining procurement support.....	92
3.4.2 Ethics in the procurement process.....	93
Test your knowledge: Navigating procurement challenges.....	94
3.4.3 Avoiding ethical traps in procurement.....	95
3.4.4 Reflection: Procurement ethics.....	97
Weekly Challenge 3.....	98
Week 4 : Managing Risks Effectively.....	101
Learning Objectives.....	101
4.1 Understanding Risk Management.....	101
4.1.1 The importance of risk management.....	101
Test your knowledge: Risk management.....	102
4.1.2 Phases of risk management.....	104
4.1.3 Uncover opportunities using risk management.....	104
Test your knowledge: Risk scenarios.....	105
4.2 Identifying And Assessing Risks.....	106
4.2.1 Tools to help identify risks.....	106

4.2.2 How to create a fishbone diagram.....	109
4.2.3 Practice: Analyzing causes and mitigating risks.....	112
4.2.4 Types of risk.....	113
Test your knowledge: Measuring risk impact.....	115
4.2.5 Managing single point of failure risks.....	116
4.2.6 Visualizing dependency relationships.....	118
Test your knowledge: Identifying and assessing risks.....	122
4.3 Mitigating And Communicating Risks.....	123
4.3.1 Risk mitigation strategies.....	123
4.3.2 Building a risk management plan.....	124
Test your knowledge: Mitigating and communicating risks.....	125
4.3.3 Communicating risks to stakeholders.....	126
Weekly Challenge 4.....	128
Week 5 : Organizing Communication And Documentation.....	131
Learning Objectives.....	131
5.1 Creating An Effective Communication Plan.....	131
5.1.1 Why communication is critical.....	131
5.1.2 Tips for effective communication.....	132
5.1.3 Starting a communication plan.....	133
5.1.4 Developing a communication plan.....	135
5.1.5 Best practices for building a communication plan.....	138
Test your knowledge: Effective communication.....	140
5.1.6 Identify: Communication goals and methods.....	141
5.1.7 Activity: Draft a communication plan.....	142
5.2 Documenting Project Planning Resources.....	148
5.2.1 The value of project documentation.....	148
5.2.2 Organizing project documentation.....	150
5.2.3 Activity: Organize documents in a project plan.....	150
5.3 Preparing For A Job Search.....	154
5.3.1 Documenting experience in a resume.....	154
5.3.2 Tailoring a resume for project management.....	156
5.3.3 Activity: Get started on your project management resume.....	162
5.3.4 Activity: Create or update your professional social media profile.....	164
5.3.5 OKRs for personal and professional development.....	167
Weekly Challenge 5.....	170
Glossary - Terms and Definitions.....	174

COURSE 3 : Project Planning: Putting It All Together

Week 1 : Beginning The Planning Phase

Learning Objectives

- Explain the Project Management Certificate program structure and course functionality.
- Explain why milestones are important and how to set them.
- Explain the difference between tasks and milestones and how they are related.
- Describe the components of the planning phase and their significance.

1.1 Understanding The Planning Phase Components

1.1.1 The benefits of project planning

During the **initiation phase**, the project manager is **gathering all of the necessary preliminary information needed to get stakeholder approval** and plan the project. A few key things need to happen during this time.

- Project manager gets assigned
- The goals of the project have to be approved, as well as the scope of the project and its deliverables.
- Team members get assigned to the project, and you'll have a good sense of their individual roles and responsibilities.
- Stakeholder sign off on your project charter.

If all of these criteria have been met, then you're set to begin planning. **Planning** is a significant part of **ensuring a project's success**. Planning is important for any project, large or small. While planning your project, you and other members of the team will **determine the processes and workflows needed to meet your goals and put together ideas** about how to make the project a success. While planning, you might **draw from previous project experience**, but don't be afraid to think of new ways to get results. Every project is different, so new and different approaches may be just the thing you need.

Planning has many benefits. As we've discussed, planning helps you **map out the full project**. It helps you:

- **Understand the work needed to achieve your goals.**
- **Coordinate efforts and timelines with other teams**, contractors, and vendors.
- **Identify and prepare for risks** that could impact your project. Those might include things like a delay in the timeline, the departure of a critical team member, or a change in project direction from a primary stakeholder. Planning also gives you the chance to brainstorm ways to mitigate or address those risks.

- **Get "buy-in" from key members of the project team.** Getting buy-in means that you've gained their support for your plans.
- **Demonstrates to stakeholders that the team is taking care** to start the project with a detailed plan.

But one of **the most significant benefits of planning** is **teamwork**, which will help you push your project across the finish line. By **working together in the planning phase**, individuals assigned to the project can become a strong team by the time the planning is done and the work is about to start. **Planning together** creates a **shared understanding** among all parties involved in the project.

1.1.2 Launching the planning phase

The planning phase may differ from project to project, but generally **three big things** are worked out during this stage: **the schedule, the budget, and the risk management plan**.

Schedule

The schedule is basically a **timeline of the project**. It includes the **start date**, the **end date**, and the dates for things that will happen in between. You will use **time estimation techniques** to determine these dates.

Let's imagine scheduling in our example project at Office Green. As a reminder, you are the lead project manager for project Plant Pals, a new service that will provide top clients with desk-friendly plants. You want to launch the service by the end of the year, so the planning phase for this effort should include a number of key dates. Those dates might include when you'll request proposals from plant vendors. They might also include the date you'll kick off with the web designers and developers who are creating a new website for the service. It should also include important dates during the project execution phase, like when the plants need to be ready for delivery or when the new web page design needs to be approved, and you'll need to include the target date for the launch of the service.

Budget

The budget will account for the **total cost to complete the project**. The total cost needs to be broken down to determine how much has to be spent on different elements of the project. For project Plant Pals, the budget will need to include items like the cost of designing and launching a web page, the cost of hiring your plant vendor, and much more.

Risk Management

Risk management means **searching for possible problems and planning ahead to mitigate these risks**. Good project planning means searching for places where trouble might occur.

- Where might the schedule get off track?
- Where might the budget exceed your estimates?

You'll work with your team to consider answers to these questions and prepare a risk management plan based on whatever you discover.

Let's go back to the Office Green example. While putting together the initial schedule, you may realize that your estimates from your developers put you way beyond your launch date. To **manage that risk**, you might try to **reduce or adjust the project's scope** to still meet your deadline or even **negotiate a new launch date** with your stakeholders.

1.1.3 Reflection: Project planning considerations

Imagine that you're a project manager helping a restaurant owner launch an updated menu with a few new food items at 15 locations. The owner would like you to oversee the redesign of the menu and distribution to all locations.

You're preparing for your project's eventual kickoff meeting. Right now, you're thinking through the three main planning activities: building the schedule, assessing the budget, and considering potential risks.

Write 2-3 sentences addressing what you should consider when forming the tentative project schedule.

When working through a potential schedule for a project, you should include several key dates. The dates may include important constraints from vendors, kickoffs dates, and when to complete certain tasks. Make sure to include a target date for the product (menu) launch, and validate that with the client. Remember, the schedule isn't permanent. While you would like to stick to the schedule as closely as possible, it may change.

Write 2-3 sentences about what you should consider when creating a project budget.

Call vendors and get quotes of items you may need to purchase. Include any pay for teammates or fees for outside consultants or service-based vendors. Include any software costs you may need to help you organize and manage your project. What if the project is delayed—are any fees associated with the delay?

Write 2-3 sentences on what you should consider when listing potential risks.

Budget items that are likely to increase in cost. Think about days off for team members, and consider any holidays or vacation days. What about tasks and deliverables that could delay the project? Feedback from stakeholders could also cause delays.

1.1.4 Facilitating a project kick-off meeting

A project kickoff meeting is the first meeting in which a **project team comes together** to **ground everyone in a shared vision, gain a shared understanding** of the project's goals and scope, and to **understand each person's individual roles** within the team.

So **who's invited** to the kickoff meeting? Well, that would be the **team members identified in a RACI chart**, created during the initiation phase. As a reminder, a RACI chart helps to define roles and responsibilities for individuals or teams to ensure that the work gets done efficiently.

During the kickoff meeting, **team members** will learn more about how they'll **contribute to the project** and how they'll **gain a deeper understanding** of how the team will work together to reach the project's goals. You should also invite your **stakeholders and your**

sponsor to the meeting, so that they have a **chance to understand the high-level plan** for the project, can **share their perspective**, and you can ensure that everyone is on the same page.

Meetings can be time-consuming, and there are definitely situations when a quick email or a chat to a teammate will suffice. But when you're kicking off a project, especially larger projects with multiple people involved, it's **important** to:

- get together to establish a shared vision
- align on the scope
- build team rapport
- ask questions and offer insights
- set expectations with the team about how each person will individually contribute to the project.

There are lots of templates for kickoff meeting agendas online, but most follow a similar structure and **last about an hour**. Keep in mind that this is just a suggestion, and you should feel free to schedule as much or as little time for each agenda item according to the needs of your project and the team.

- **Introduction (10 minutes)**

You can allocate about 10 minutes for everyone in the group to **introduce themselves and their roles**, and if time allows, **share a fun fact to help build team rapport**.

- **Background (5 minutes)**

Then you'll spend about five minutes giving an overview of the background of the project. This covers details like **how the project came to be** and **why the project matters**. You'll also use this time to **set a shared vision**.

- **Goals and Scope (5 minutes)**

Next, spend about five minutes sharing the goals and the scope, which refers to the boundaries around a project. That includes making it clear what work is considered **in-scope**, and what work is considered **out-of-scope**. This is also a good place to share the **target launch date** and **highlight any important milestones** the team needs to be aware of.

- **Roles (5 minutes)**

Once you've covered goals and scope, it's time to discuss everyone's roles. It's a good idea to spend about five minutes making sure that everyone is clear on what work they'll be responsible for throughout the duration of the project.

- **Collaboration (10 minutes)**

Next, it's time to address collaboration, which is how the team will work together on the project. This is a great time to go over **tools that will serve** as a communal source of information for the team, like a project plan created in a spreadsheet or work management software tool like Asana. It's also a great time to **determine how the team will**

communicate with one another, like through daily email updates, a team chat room, and weekly team check-in meetings.

- **What comes next (10 minutes)**

When that's all set, it's time to discuss what comes next. Now that you've discussed the details of the project thus far, you should spend about 10 minutes **setting expectations** with your teammates for what's coming up. You'll also use this time to make clear to each teammate what **actions they will need to take next**.

- **Questions (15 minutes)**

Finally, it's really important to set aside about 15 minutes for questions from the group. This is your team's chance to **gain clarity** on any of the topics you've discussed so far. It's also your chance to **hear from the team** and ensure that the project is benefiting from diversity of thoughts, experiences, and ideas. For example, in addition to fielding questions out loud in the meeting, I might invite teammates to input their questions or feedback in a shared document.

Once you've **finalized the meeting agenda, document this information** into a **meeting agenda template**, and **send it to attendees** a day or two ahead of the meeting.

As the project manager, you'll be leading the majority of this meeting, and when you're presenting, it's difficult to take notes and present at the same time. So, at the start of the meeting, **ask a teammate to take notes** on key points you discussed throughout the session and to **record each teammate's action items**.

In some cases, it may be beneficial to **record this meeting** so that **attendees can revisit** it later, especially if you have a large or dispersed team. Just be sure to get each attendee's **permission to record** ahead of time. **After the meeting**, don't forget to **send a follow-up email to the group, summarizing key points and outcomes from the meeting**, as well as any **action items** to the attendees.

In your **follow-up email**, be sure to also **invite attendees to reach out** if they have any **additional questions**. While there's a lot that goes into the kickoff meeting, remember that this is an exciting moment for the team and especially for you as the project manager. All of the careful thinking and hard work that you've done during the initiation phase comes together to form the foundation of your project.

1.1.5 Tips for leading a successful kick-off meeting

In the previous video, you learned what a project **kick-off meeting** is and what it involves. As a reminder, a kick-off meeting is the first meeting among the project team, stakeholders, and the project sponsor at the start of a new project or new project phase. The purpose of a kick-off meeting is to ground everyone in a shared vision, ensure they understand the project's goals and scope, and make sure that they are all on the same page about their roles and responsibilities on the project. The kick-off meeting is critical to a project's overall success. It gets the team together to align on goals and visions for the project and sets the project up for success.

This reading will provide you with some tips for running an effective kick-off meeting.

Kick-off meeting best practices

- **Set the right time.** Choose a meeting time that works for everyone. Be mindful of time zone differences.
- **Set the right length.** Choose an appropriate meeting length—no more than one hour. You don't want to waste people's time, but you also don't want to run out of time. Kick-off meetings work best when you first share key information and then spend any additional time on questions and team building.
- **Invite the right people.** Be strategic about including the appropriate people. The goal is to invite attendees who play a role in the development and execution of the project, such as all team members, stakeholders, and the project sponsor. You don't want to leave anyone out, but you also don't want to invite people who shouldn't be there.
- **Designate a notetaker.** The discussion that takes place during the meeting is important. It is critical that you document any feedback, changes, or questions asked by attendees. If you are leading the meeting, designate someone else to take notes before the meeting starts. You can also use tools like Chorus Notetaker, Google Keep, Google Docs, or Microsoft OneNote.
- **Set the agenda.** To recap what we discussed in the video, a kick-off meeting agenda should generally include: introductions, the project background and purpose, project goals and scope, roles and responsibilities, the collaboration process and project tools, what comes next (expectations and action items), and time for questions and discussion.
- **Share the agenda.** Prior to the meeting, share the agenda with attendees via email and identify speakers for each topic. By sending the agenda in advance, everyone will have an idea of what to expect, time to prepare for anything they may need to present or discuss, and time to generate questions or ideas.
- **Stick to the agenda.** During meetings, discussions can sometimes go off topic or take longer than expected. As a project manager, it is your job to keep the meeting on track by redirecting discussions to the items on the agenda.
- **Follow up after the meeting.** After the meeting, make sure to send out a meeting summary featuring the meeting notes and any action items.

Test your knowledge: The planning phase components

1. Which three of the following are benefits of project planning?

- It helps you brainstorm preliminary goals for the project.
- It gives you time to identify and prepare for risks that could impact your project.

 **Correct**

Planning can help you identify and prepare for things like a delay in the timeline, the departure of a critical team member, or a change in project direction from a primary stakeholder. It also gives you the chance to brainstorm ways to mitigate or address those risks. Additionally, it helps you map out the full project and helps individuals assigned to the project become a strong team.

- It helps you map out the full project.

 **Correct**

Planning helps you understand the work needed to achieve your goals. Planning also helps coordinate efforts and timelines with other teams, contractors, and vendors. It also gives you time to identify project risks and create a shared understanding among all parties involved in the project.

- It helps individuals assigned to your project become a strong team by working together.

 **Correct**

Planning together creates a shared understanding among all parties involved in the project. It prepares everyone for the teamwork that will be necessary when the planning is done and the work starts. It also helps you map out the full project and gives you time to identify risks.

2. What are three major project components that are worked out during the planning phase?

- Success criteria, stakeholders, and resources
- Schedule, budget, and risk management plan
- Scope, goals, and deliverables
- Project tracking, quality management, and retrospectives

 **Correct**

During the planning phase, you determine the project's schedule, budget, and risk management plan. The schedule is a timeline of the project. The budget accounts for the total cost to complete the project. And the risk management plan involves searching for possible problems and planning ahead to mitigate these risks.

3. During the kickoff meeting, which agenda item involves discussing how the project came to be and why the project matters?

- Roles
- Background
- Goals and scope
- Collaboration

 **Correct**

Towards the beginning of the kickoff meeting, you should spend around five minutes discussing the details of the project and its shared vision.

4. Which of the following are best practices when you are leading a kickoff meeting? Select all that apply.

- Take your own thorough notes.
- Follow up after the meeting.

 **Correct**

After the meeting, send out a meeting summary featuring the meeting notes and any action items. Other best practices include: Set the right time and length; invite the right people; designate a notetaker; and set, share, and stick to the agenda.

- Share the agenda.

 **Correct**

Prior to the meeting, share the agenda with attendees via email and identify speakers for each topic. By sending the agenda in advance, everyone will have an idea of what to expect, time to prepare for anything they need to present or discuss, and time to generate questions or ideas. Other best practices include: Set the right time and length; invite the right people; stick to the agenda; and follow up after the meeting.

- Set the right time.

 **Correct**

Choose a meeting time that works for everyone. Be mindful of time zone differences. Other best practices include: Invite the right people; designate a notetaker; set, share, and stick to the agenda; and follow up after the meeting.

1.2 Defining Tasks And Milestones

1.2.1 Understanding tasks and milestones

A **project milestone** is an important point within the project schedule that indicates progress and usually signifies the completion of a deliverable or phase of the project. These are significant checkpoints in your project, and keeping track of them helps ensure that your project is on schedule to meet its goals. For example, a milestone might include completing the first draft of a report, and the goal may be to ultimately publish the

report. Another example of a milestone is **receiving sign off**, or **approval** from your customer on a major deliverable.

A project task is an activity that needs to be accomplished within a set period of time. The work of a project is broken down into many different tasks. In order **to reach a milestone**, you and your team **must complete multiple tasks**.

For example, if **a milestone is completing the first draft of a report**, the **tasks required** to get to that milestone might include **hiring a writer, conducting research, and drafting different sections of the report**.

Let's imagine milestones and tasks in the context of Project Plant Pals at Office Green. One of your project deliverables is to launch a website for your new service, where customers will be able to place orders and get customer support. Some of the milestones leading up to that launch will include securing approval on the website design and implementing feedback from user testing. To achieve those milestones, your team needs to complete multiple project tasks. For example, in order to reach the design milestone, your website designer will need to create initial mockups of the proposed website design. You'll need to review those mockups, and the designer will need to implement your feedback. Each of these items is a project task, and you won't reach your milestone until they're complete.

To review, **milestones are important points within the project schedule, and project tasks are activities that need to be accomplished** within a set period of time **to help reach those milestones**. Milestones and project tasks are **interconnected**. Tasks ladder up to milestones, which are crucial for project tracking.

1.2.2 The importance of setting milestones

Give you a clear understanding of the amount of work your project will require

The act of setting milestones **forces you to break your project down** into more manageable chunks. The further you go, the better you'll be able to see how much work will be needed to meet the project goals. At first glance, it might seem simple to launch a new website, but it might be more work than you think. If you break that deliverable down into milestones and those milestones into tasks, you will have a better sense of the true amount of work that needs to be done. This will help you better manage the project workload.

Help keep your project on track

When you set a milestone, you assign **clear deadlines** for when certain project deliverables need to be completed. Then, as you work through the execution phase, you can look back at these deadlines to make sure that the project is progressing at the right pace.

Help you uncover areas where you might need to adjust scope, timelines, or resources to meet your goals

For example, if you realize that reaching a milestone will require more tasks than you'd anticipated, you might ask a stakeholder for permission to reduce the scope of the project and cut down on the number of tasks.

Motivate your team and illustrate real progress to your stakeholders

With big projects that go on for months, you'll want to keep the team's motivation high. A milestone signifies the completion of an important chunk of work and provides a moment of celebration for the team, even if there's more work ahead.

Serve as a great check-in point to highlight your progress to stakeholders

It gives them the opportunity to see the work that's been completed so far and lets them see everything is on track and up to their standards.

Milestones must be **completed on time** and **in sequential order** because, usually, reaching the next milestone is dependent on completing a previous milestone. Think about this in terms of Project Plant Pals at Office Green. As we discussed earlier, in order to launch a website for a new plant service, there are a few milestones you need to hit, like securing approval of a website design, completing development of the website, and implementing user feedback. These milestones must happen in this order. Here's why. The web developer can't build the website if the design hasn't been approved by stakeholders, and you can't implement feedback from user testing if there's no website to test. So we know it's important to reach milestones in sequential order, but it's just as important that you reach them on time.

If the **team misses the mark to complete a deliverable tied to a specific milestone**, it could **set back your project schedule**, meaning your team might **need to work overtime** or **add additional resources** to catch up. For example, if you need to secure stakeholder approval on a website design by Friday but the web designer hasn't completed the design yet, you might have to wait until after the weekend to secure stakeholder approval. This will delay the start of the development phase, giving your team less time to build the website. Even worse, this delay could affect the project budget if completing this deliverable directly ties to a payment from the client. If you miss the deadline, you will likely delay receipt of that payment. You might even risk losing the payment altogether. Though deadlines are sometimes flexible, it's important to be extra mindful of milestones where the deadline is non-negotiable.

1.2.3 How to set milestones

Evaluate your project as a whole

It helps to refer back to your project charter to remind yourself of the project goal.

Make a list of what your team needs to do to achieve that goal

The big items that indicate progress are your milestones. These are the key points within the project schedule that signify the completion of a project deliverable or a phase in the project. Smaller items, like any item that a stakeholder wouldn't need to review, for example, are tasks. You'll plan for these once you've separated them out from the milestones.

So let's go back to our Office Green example. One of the project deliverables is a new website. And as we determined earlier, some milestones through our Office Green website scenario include securing approval of website design, completing development of the website, and implementing user feedback. Mocking up initial designs or building a landing

page are smaller items on your list, so those are marked as tasks. Try to keep in mind that some projects might have many milestones, while others might just have two or three. There's no one right number of milestones to set —the number will vary from project to project.

Assign deadlines to each milestone

Once you've determined your milestones, the next step is to assign each one a deadline. Reaching each of your milestones is dependent on the completion of multiple project tasks. So to **make sure you give your team a fair amount of time** to complete each of those tasks, you'll need to space your milestones out accordingly. For a larger, months-long project like Project Plant Pals, you shouldn't expect to meet multiple milestones in the span of a week. Mocking up website designs and collecting insights from user testing are big tasks that take time. You need to space milestones out to give your team room to complete their work.

To get a good sense of timing, you can **connect with teammates to discuss** the tasks required to reach each milestone and get their estimates for how long these tasks will take. With those estimates in mind, you can make an informed decision about reasonable deadlines for each milestone.

When you set deadlines for milestones, you will also want to consider the needs of your stakeholders. Ask yourself when they'll expect to see a certain project deliverable, and **consider the answer when choosing a deadline**. Your stakeholders will want to see regular indications that the team is making progress, and milestones are a great way to show that progress.

So to recap, you set milestones by looking at your project as a whole and pulling out important checkpoints that show progress. Then you assign deadlines to each milestone while keeping the needs of your stakeholders top of mind.

1.2.4 Setting milestones: Best practices

You have learned what milestones and tasks are and when, where, and how you will use them as a project manager. In this reading, we will explore best practices for setting milestones. But first, let's revisit the definitions of tasks and milestones.



- A **project task** is an activity that needs to be accomplished within a set period of time and is assigned to one or more individuals for completion. The work of a project is broken down into many different project tasks.
- A **project milestone** is an important point within the project schedule that usually signifies the completion of a major deliverable. Milestones are significant checkpoints in your project, and keeping track of them helps ensure that your project is on schedule to meet its goals.

Set tasks to identify milestones

Setting tasks can help you clearly define milestones. You can do this in two ways:

1. **Top-down scheduling:** In this approach, the project manager lays out the higher-level milestones, then works to break down the effort into project tasks. The project manager works with their team to ensure that all tasks are captured.
2. **Bottom-up scheduling:** In this approach, the project manager looks at all of the individual tasks that need to be completed and then rolls those tasks into manageable chunks that lead to a milestone.

Most projects have many tasks that lead to milestones. For instance, if your milestone is to receive approval on the first draft of an article that you are writing, you might complete tasks such as “develop outline,” “write first draft,” and “send to the editor.” Then, you may have another set of tasks to achieve before reaching the milestone of revising the article. Milestones serve as check-in points along your project to make sure that you are headed in the right direction toward the end goal. Milestones also make projects more manageable.

Integrate milestones into your project schedule

There is not a consistent number of milestones in every project. Some projects will have a few milestones, while others may have dozens. Rather than aiming to hit a certain number of milestones, try to set milestones for the most important events in your project. Review your project schedule and identify important moments or checkpoints. In other words, pinpoint where in your project you will achieve major goals and make those points your milestones.

Milestone-setting pitfalls

Here are some things to avoid when setting milestones:

- **Don't set too many milestones.** When there are too many milestones, their importance is downplayed. And, if milestones are too small or too specific, you may end up with too many, making the project look much bigger than it really is to your team and stakeholders.
- **Don't mistake tasks for milestones.** Remember that milestones should represent moments in time, and in order to map out how you will get to those moments, you need to assign smaller tasks to each milestone.
- **Don't list your milestones and tasks separately.** Make sure that tasks and milestones can be visualized together in one place, such as a project plan. This will help ensure that you are hitting your deadlines and milestones.

Key takeaways

Your approach to setting milestones may differ from project to project, but most projects will have at least one milestone and several smaller tasks associated with each milestone. Setting clearly-defined, distinct tasks, and milestones, integrating them into your project schedule, and using a tool that visualizes them together will help organize your project and drive it forward

1.2.5 Practice: Assigning tasks to milestones

As project manager for an animal rescue organization, you're partnering with local shelters to plan a pet adoption event. Identify the project tasks that belong with each milestone.

Milestone 1 : Prepare pets for adoption

Tasks :

- Arrange to transport pets to venue
- Schedule medical checkups
- Bathe and groom pets
- Finalize list of participating pets from shelters
- Print adoption paperwork

Milestone 2 : Promote the event

Tasks :

- Purchase radio and print ads
- Print flyers
- Schedule local TV feature
- Post real-time adoptions on social media

Milestone 3 : Complete on-site setup

Tasks :

- Clean work stations and equipment
- Prepare photo area for owners and new pets
- Post signs to direct flow of traffic
- Stock drinks and snacks for volunteers

1.2.6 Creating a work breakdown structure

A work breakdown structure (WBS) is a tool that sorts the milestones and tasks of a project in a **hierarchy**, in the **order they need to be completed**. This is a helpful tool because it helps **break down the sometimes intimidating challenges** of a project into more manageable chunks.

Big projects like publishing a report or organizing a conference seem a lot less daunting when the work required to get there is broken down step-by-step with a clear pathway from the beginning of the project to the end. Let's look at an example of a basic work breakdown

structure. There are lots of different ways to design a work breakdown structure, but one **common way** is to **create a tree diagram** of project tasks.



Let's say that we're creating a work breakdown structure for the Project Plant Pals website launch. At the top of the diagram is the name of the project. The second level of our diagram breaks the project down into three milestones. These include securing design approval, developing the site and implementing user feedback. At the third level of the chart, we can see each of those milestones gets further broken down into a series of project tasks. For example, tasks listed beneath your design approval milestone include mocking up designs and collecting feedback. This is a very simple example of a work breakdown structure. Here, we've only created a work breakdown structure for a new website, which is just one of the Project Plant Pals deliverables.

Keep in mind that in future project management roles, you'll likely create a WBS that **outlines the tasks for an entire project**. It's also important to know that while creating a work breakdown structure is a helpful exercise for visualizing the tasks of the project, you wouldn't typically include this type of diagram in your official project plan. Instead, you'd input the tasks identified through this exercise into a spreadsheet or your chosen work management software, where you can more easily assign owners to each task.

So after completing a work breakdown structure and organizing those tasks in a spreadsheet, a few things should be clearer to you. **First**, you should have **a set of discrete project tasks that ladder up to each of your milestones**. You and your teammates will know exactly what needs to happen to reach your first milestone and the milestones after that. **Second**, you're now in a good position to **assign those tasks to members** of the project team. Each person should have a clear understanding of the tasks they own and the order in which they need to complete them.

Let's break down **how to assign tasks**.

Tasks are typically **assigned according to a person's role** in the project. For example, in our Office Green scenario, the web designer is assigned to the task of mocking up the initial

website design, you are assigned to the task of reviewing that design and providing feedback, and the designer is assigned to the task of implementing your feedback. A web developer will be assigned to the next task of developing the site itself. Sometimes, your team will have multiple teammates working in the same type of role. To assign tasks between two or more team members with the same roles, you might take into consideration each person's familiarity with the tasks at hand. For example, if you have multiple web developers working on the new website, you might task one developer with creating the landing page and task the other developer with creating the "contact us" page.

When assigning tasks, you should also **consider each teammate's workload**. Think about how much time they're meant to be spending on the project compared to work outside the project that they may also be responsible for. It's important to keep everyone's **workloads balanced**. You'll want to make sure that a single teammate isn't assigned more work than others. You'll also want to make sure that no one is assigned more work than they can handle. When people feel overloaded, the quality of their work may suffer or they might need more time to complete the number of tasks, putting the timeline and the overall project schedule at risk.

As the project manager, you will ensure that your teammates are clear on their assigned tasks. You can do this by **assigning tasks with help from project management tools like Asana**. When you manage a project in Asana, you'll **add tasks to represent actionable pieces** of work needed to complete the project. As a best practice, it's good to **start each task with a verb**. For example, instead of just typing "website," make clear the task is to "mock up the website" or "add images to the website."

Another thing to think about when assigning tasks is **timeline**. Be sure to **add an assignee and a due date to each task** so it's clear who's doing what by when.

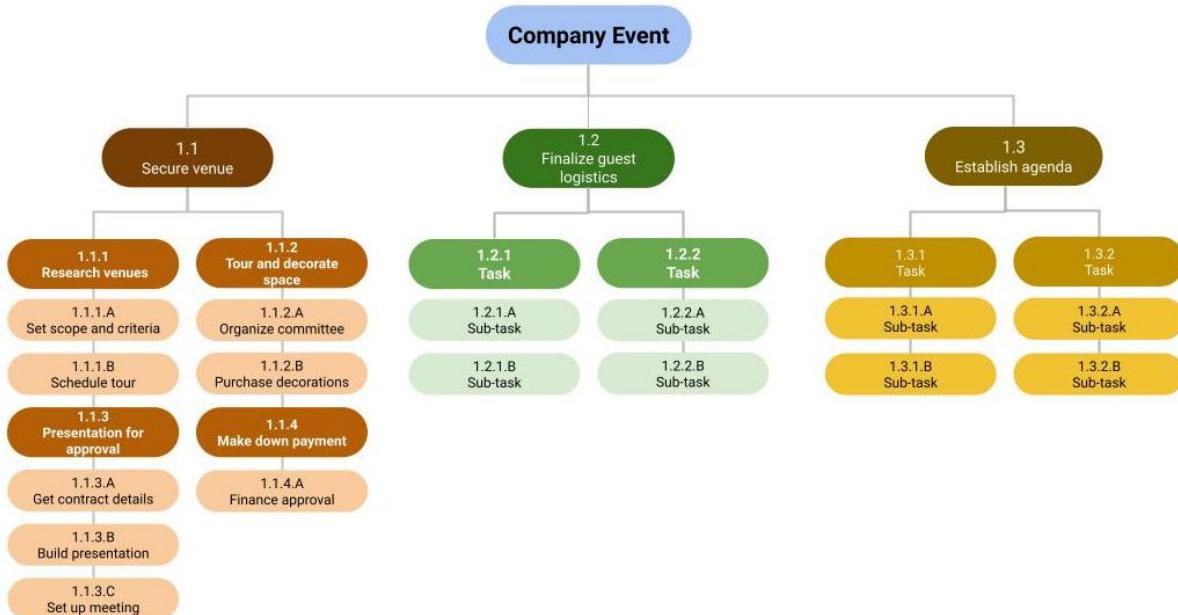
Finally, be sure to include as much detail surrounding the task as possible to avoid miscommunication. In Asana, you can click into the task details to add helpful information. Here, you can add a description, link to corresponding files or attachments, or even comment on the work related to the task.

There's so **many benefits to assigning tasks**, but the biggest one is that it **frees you up to focus on managing a project**. This way, you can feel confident in the knowledge that your teammates are responsible for specific work. But there's also some **less obvious benefits** of assigning tasks. Let's explore these more now. One less obvious benefit of assigning tasks is that it **creates a sense of personal responsibility for members** of the team. When you assign a teammate to a task, you enter into an agreement with that person that they'll own the task until it's completed. Creating a sense of ownership for members of the team is important because it **makes them feel more invested in the project**. It also **gives them space for personal growth**. Plus, it **supports your own skill-building** as a manager who's a supportive delegator. And on top of that, it **keeps your team motivated and invested** in completing their work on time. While each team member should have a sense of responsibility for their assigned task, a complete sense of ownership might feel overwhelming for some teammates. If that's the case, it's a good idea for a project manager to encourage teammates to support one another on their tasks. This is also great for building overall team rapport.

1.2.7 Breaking down the work breakdown structure

In the previous video, you were introduced to a major component of the planning phase: the creation of a **work breakdown structure** (WBS). A WBS is a deliverable-oriented breakdown of a project into smaller components. It's a tool that sorts the milestones and tasks of a project into a hierarchy, in the order they need to be completed.

A thorough WBS gives you a visual representation of a project and the tasks required to deliver each milestone. It makes it easier to understand all of the essential project tasks, such as estimating costs, developing a schedule, assigning roles and responsibilities, and tracking progress. Think of each piece of information as part of the overall project puzzle—you can't successfully navigate through the tasks without understanding how they all fit together. For instance, many smaller tasks may ladder up to a larger task or milestone.



Steps to build a WBS

As a reminder, here are three main steps to follow when creating a WBS:

- **Start with the high-level, overarching project picture. Brainstorm with your team to list the major deliverables and milestones.** Example: Imagine you are planning a company event. Your major milestones might include categories like “secure venue,” “finalize guest logistics,” and “establish agenda.”
- **Identify the tasks that need to be performed in order to meet those milestones.** Example: You could break a milestone like “secure venue” down into tasks like “research venues,” “tour and decorate space,” “make down payment,” and so on.
- **Examine those tasks and break them down further into sub-tasks.** Example: You could break down a task like “tour and decorate space” further into sub-tasks like “organize decorating committee,” “purchase decorations,” “assign decorating responsibilities,” and so on.

Further reading

For further learning on best practices for developing a WBS, check out this article:

[How to Create a Work Breakdown Structure and Why You Should](#)

1.2.8 Explore: Project Plant Pals: Planning

In upcoming activities, you'll create an Operations and Training plan to ensure the Plant Pals launch goes smoothly. Explore an infographic to learn what's next in the planning phase.

Get started on the Plant Pals Operations and Training plan

In the initiation phase, you made a project charter for the Plant Pals Operations and Training plan. Now you're ready for the planning phase. You'll use the charter to create sustainable fulfillment and delivery protocols and support your customer base.

Identify major milestones and assign task owners

First, you'll define the work your team needs to do for the plan—like sourcing materials and training employees. Creating a work breakdown structure (WBS) diagram and spreadsheet will help you identify and organize major milestones and assign task owners.

Map project schedule and tasks using a Gantt chart

Next, you'll add those tasks and milestones—along with due dates and durations—to a Gantt chart. This chart helps you clarify and map out task timelines and dependencies, so your team knows what to do at each stage.

Estimate costs and create a budget

Once you've set your schedule, it's time to estimate the costs of your milestones and tasks. Your budget should include both one-time and recurring expenses—as well as a buffer to cover any overages.

Create a Statement of Work (SoW)

When your team hires a vendor to complete a project milestone, you'll create a Statement of Work (SoW). This legal document defines what you need from the vendor (and what they need from you), so everyone knows what's expected.

Create a risk management plan

Next, you'll assess potential risks to the budget and schedule, like staffing shortages or shipping delays. Identifying, evaluating, and preparing for specific risks helps you keep the project on track if things go wrong.

Create a communication plan

When it's time to train employees, you'll need to manage various communications among stakeholders. Your communication plan will track senders and recipients, communication goals, key dates, and other details. That way, everyone gets the right information at the right time.

Organize the project artifacts

Finally, to keep your project artifacts organized, you'll create a project plan in a central location. Your team members and stakeholders can use it to find project documents, and you can refer to it when you plan future projects.

1.2.9 Activity: Use a WBS to create milestones and project tasks - Part 1

Activity Overview

In this activity, you will identify a project's major milestones, break them into smaller tasks, and complete a Work Breakdown Structure (WBS) brainstorm diagram. Then, in Part 2 of this activity, you will build on this scenario to complete a WBS spreadsheet.

Setting tasks and milestones gives you a clear understanding of the amount of work your project will require, so you can keep your project on track. Milestones also serve as great check-in points to highlight the project's progress for your team and stakeholders.

Be sure to complete this activity before moving on. The next course item will provide you with a completed exemplar to compare to your own work. You will not be able to access the exemplar until you have completed this activity.

Scenario

Review the scenario below. Then complete the step-by-step instructions.

As a project manager for Office Green, your job includes working with the operations team to develop and implement an Operations and Training plan. Your team will use this plan for ongoing maintenance of the Plant Pals service. It will take six months to fully implement all protocols, including setting up operational tools, putting delivery processes in place, and training employees. The project will begin before the Plant Pals launch and extend beyond it.

The Operations team is responsible for managing the organization's day-to-day business so that it continues to run smoothly. Operations provides resources to other departments, ensures consistency, and maintains the company's profitability. The Chief Operations Officer (COO) typically leads the Operations team and works closely with other divisions, such as Sales, Client Services, Human Resources, Information Technology (IT), as well as the project manager.

Developing the Operations and Training plan marks a new stage of the project, with its own set of goals and deliverables. After assessing the requirements for the plan you determine three major milestones:

- Establish a plant delivery and logistics plan
- Select and install supply chain management software and equipment
- Develop and launch an employee training program

For each milestone, you divide the work into three separate tasks. Each task has its own owner, duration, and details. The tasks associated with your milestones include:

- **Establish a plant delivery and logistics plan:** Team members will need to source materials for packaging and hire delivery drivers. They are also responsible for calculating the delivery fees.
- **Select and install supply chain software and equipment:** Team members will supervise vendor setup of inventory management and fulfillment software. They must also supervise vendor installation of fulfillment equipment and determine internal safety protocols for the equipment.
- **Develop and launch an employee training program:** Team members will need to develop training sessions, train employees to use the software and equipment, and monitor progress and improve training processes.

Step-by-step Instructions

Step 1: Access the template

To use the template for this course item, click the link below and select “Use Template.”

Link to template: [WBS Brainstorm Diagram](#)

Step 2: Title your chart

Title your chart “Operations and Training Plan.” Giving your chart a descriptive title helps you focus on the project’s milestones and tasks.

Step 3: Add milestones

Record the three milestones from the scenario in the boxes labeled **Milestone 1**, **Milestone 2**, and **Milestone 3**.

Step 4: Add tasks

Identify the tasks required to reach each milestone. Record three tasks for each milestone in the **Task 1**, **Task 2**, and **Task 3** boxes. When you finish, you should have nine tasks in your brainstorm diagram—three for each milestone.

For example, one task that will help you reach the “establish a delivery plan” milestone is “hire delivery drivers.”

Note: In a more detailed WBS, you would break these tasks down into additional subtasks. For example, the “hire delivery drivers” task might include subtasks like: “writing a job ad,” “interviewing drivers,” and “onboarding new hires.” For now, you can record the tasks as they are described in the scenario.

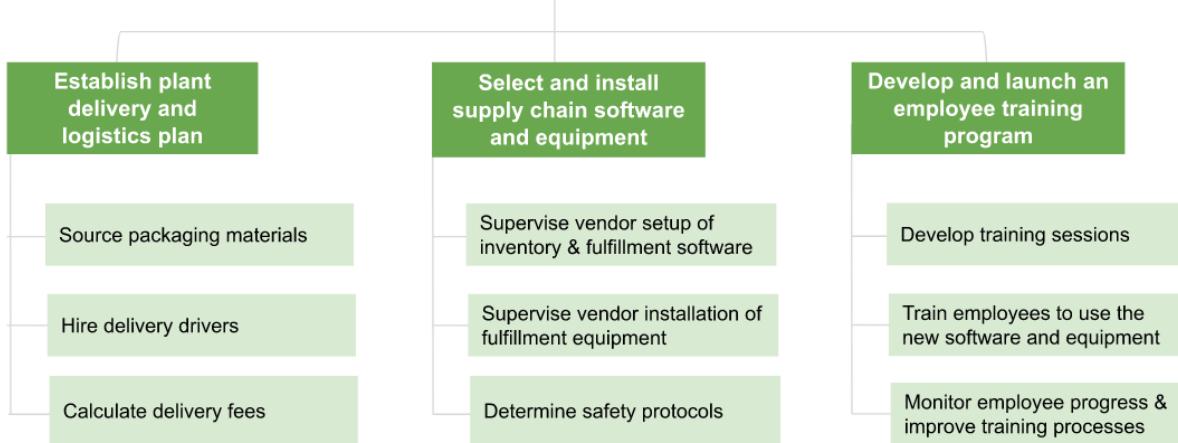
Completed Exemplar

To use the template for this course item, click the link below and select “Use Template.”

Link to exemplar: [WBS Brainstorm Diagram](#)



Project Plant Pals: Operations and Training Plan



Assessment of Exemplar

Compare the exemplar to your completed WBS Brainstorm diagram. Review your work using each of the criteria in the exemplar. What did you do well? Where can you improve? Use your answers to these questions to guide you as you continue to progress through the course.

Let's review the brainstorm diagram:

The exemplar includes the title "Operations and Training Plan." It also includes three different milestones and three tasks for each milestone (nine tasks in total):

- **Establish a plant delivery and logistics plan:** 1) Source packaging materials, 2) Hire delivery drivers, 3) Calculate delivery fees
- **Select and install supply chain software and equipment:** 1) Supervise vendor setup of inventory management and fulfillment software, 2) Supervise vendor installation of fulfillment equipment, 3) Determine internal safety protocols for the equipment
- **Develop and launch an employee training program:** 1) Develop training sessions, 2) Train employees to use software and equipment, 3) Monitor employee progress and improve training processes

1.2.10 Activity: Use a WBS to create milestones and project tasks - Part 2

Activity Overview

In the last activity, [Use a WBS to create project tasks and milestones - Part 1](#), you filled out a WBS brainstorm diagram with tasks and milestones. In this activity, you will use that diagram

to complete a WBS spreadsheet. You will use this spreadsheet to assign tasks owners and sort milestones and tasks into sequential order.

Be sure to complete this activity before moving on. The next course item will provide you with a completed exemplar to compare to your own work. You will not be able to access the exemplar until you have completed this activity.

Scenario

Review the scenario below. Then complete the step-by-step instructions.

As a project manager for Office Green, you are developing an Operations and Training plan for the new Plant Pals service. It will take six months to fully implement all protocols, including setting up operational tools, putting delivery processes in place, and training employees. You have already added milestones and tasks for this project to a WBS brainstorm diagram. Here are the milestones and their associated tasks:

- **Establish a plant delivery and logistics plan:** Team members will need to source materials for packaging and hire delivery drivers. They are also responsible for calculating the delivery fees.
- **Select and install supply chain software and equipment:** Team members will supervise vendor setup of inventory management and fulfillment software. They must also supervise vendor installation of fulfillment equipment and determine internal safety protocols for the equipment.
- **Develop and launch an employee training program:** Team members will need to develop training sessions, train employees to use the software and equipment, and monitor employee progress and improve training processes.

Now you will add those tasks and milestones to a WBS spreadsheet. You will also use the sheet to record task owners and any notes about the tasks and their owners. The project sponsor for the Operations and Training plan, the Director of Operations, has put together a team for the operations launch. You can select task owners from among the following team:

- A **Financial Analyst**, who tracks and calculates costs and revenue
- A **Fulfillment Director**, who sources materials, ensures equipment is functional, and confirms fulfillment processes are correctly implemented
- An **Inventory Manager**, who maintains inventory and oversees software installation
- A **Human Resources Specialist**, who manages hiring and develops training protocols (with the help of the Training Manager)
- A **Training Manager**, who reports to the HR Specialist, runs the training program on the established protocols, and refines training processes
- A **Quality Assurance Tester**, who ensures product quality and determines safety protocols and best practices

Step-by-step Instructions

Step 1: Access the template

To use the template for this course item, click the link below and select “Use Template.”

Link to template: [WBS Spreadsheet](#)

Step 2: Add milestones

First, open your WBS brainstorm diagram. Then record the three milestones from your brainstorm diagram under the **Milestone** column of your WBS Spreadsheet.

Step 3: Add tasks

Enter the tasks from your brainstorm diagram under the **Task** column of your spreadsheet. Write each task next to the corresponding milestone and task ID number. Assigning each task to an ID number helps you organize, analyze, and search for particular tasks as the list grows. Task IDs are especially useful for large or complex projects.

Task ID numbers tell you two things: 1) which milestone each task relates to and 2) the sequence of the tasks. So, task 1.1 is the ID for the first task of the first milestone. Task 1.2 is the second task of the first milestone, and so on.

When you finish, you should have nine tasks in your spreadsheet—three for each milestone.

Step 4: Add task owners and notes

To the right of the **Task** column are columns for **Owner** and **Notes**. Here, you can record important details that didn't fit into your WBS diagram.

First, review the scenario and determine which of your team members should own each task. Then enter that person's role next to the task in the **Owner** column.

Record any helpful details from the scenario in the **Notes** column. For example, including the description of the task owner's role would remind you of each person's responsibilities.

If you'd like, you can also add your best estimate of how long each task might take in the **Duration** column (this is optional).

Step 5 (Optional): Add tasks to Asana

Many organizations use work management tools like Asana in addition to standard spreadsheets. Hiring managers might even ask you about your experience with work management software in interviews. That's why we recommend recreating your WBS in Asana.

First, create an Asana account (if you don't already have one). Then, create a project within Asana. Finally, add milestones for each assignment and add tasks to the milestones.

For more detailed instructions on how to create an account, project, or milestone, click the links below:

- [Create an account](#)
- [Create a project](#)
- [Create a milestone](#) (a premium Asana feature)

You can also import task data into Asana using a .CSV file. Click the links below to learn more about the CSV importer.

- [CSV importer - Asana](#)
- [Tips to organize your data in a spreadsheet for uploading](#)
- [Steps to import a spreadsheet into Asana](#)

How do your WBS diagram and spreadsheet help you to develop and launch the Operations and Training program for Plant Pals?

- Lay out the project's costs in detail, so you don't exceed your budget
- Clarify the tasks the team needs to accomplish to achieve project milestones
- Help you recruit team members with the right skills for the project
- Let customers know what to expect from the new service

 **Correct**

A WBS diagram and spreadsheet help to break down large milestones into manageable tasks that individual team members can own.

Which team member did you assign to own the task, "supervise vendor installation of fulfillment equipment"?

- The Training Manager
- The HR Specialist
- The Fulfillment Director
- The Financial Analyst

 **Correct**

The Fulfillment Director ensures equipment is functional, so they should supervise the installation.

Which team member did you assign to own the task, "train employees to use the software and equipment"?

- The Fulfillment Director
- The HR Specialist
- The Quality Assurance Tester
- The Training Manager

 **Correct**

The Training Manager runs the training program on the established protocols.

Which of the following additional tasks are appropriate for the “establish a plant delivery and logistics plan” milestone? Select all that apply.

- Hire warehouse employees to pack shipments

 **Correct**

Warehouse employees package shipments for delivery, so hiring them is an appropriate task.

- Source a vendor for additional types of plants

- Purchase delivery trucks

 **Correct**

Since you plan to hire delivery drivers, purchasing trucks is an appropriate task.

- Set customer service protocols

Completed Exemplar

To view the exemplar for this course item, click the link below and select “Use Template.”

Link to exemplar: [WBS Spreadsheet](#)

Assessment of Exemplar

Plant Pals WBS Spreadsheet					
Milestone	ID	Task	Owner	Duration (days)	Notes
Establish plant delivery and logistics plan	1.1	Source packaging materials	Fulfillment Director	20	The Fulfillment Director sources materials
	1.2	Hire delivery drivers	Human Resources Specialist	10	The Human Resource Specialist oversees hiring
	1.3	Calculate delivery fees	Financial Analyst	2	The Financial Analyst tracks costs and revenue
Select and install supply chain software and equipment	2.1	Supervise vendor setup of inventory management and fulfillment software	Inventory Manager	5	The Inventory Manager maintains inventory and oversees software installation
	2.2	Supervise vendor installation of the fulfillment equipment	Fulfillment Director	5	The Fulfillment Director ensures equipment is functional with the help of the Quality Assurance Tester
	2.3	Establish internal safety protocols for equipment	The Quality Assurance Tester	2	The Quality Assurance Tester ensures product quality and determines safety protocols and best practices
Develop and launch employee training program	3.1	Develop training sessions	Human Resources Specialist	2	The Human Resources Specialist develops the training sessions with the help of the Training Manager
	3.2	Train employees to use the software and equipment	Training Manager	5	The Training Manager runs the training program on the established protocols
	3.3	Monitor progress and improve training processes	Training Manager	14	The Training Manager refines training processes

Compare the exemplar to your completed WBS spreadsheet. Review your work using each of the criteria in the exemplar. What did you do well? Where can you improve? Use your answers to these questions to guide you as you continue to progress through the course.

Let's review the WBS spreadsheet:

There are three milestones from the brainstorm diagram in the Milestones column and three tasks for each milestone (nine tasks in total). The project tasks correspond to the correct milestone ID number. The tasks are the same ones listed in the brainstorm diagram.

Each task has an appropriate owner, with corresponding notes for why the owner was assigned to the task:

Establish a plant delivery and logistics plan

1. *Source materials for packaging:* The **Fulfillment Director** sources materials.
2. *Hire delivery drivers:* The **Human Resources Specialist** oversees hiring.
3. *Calculate delivery fees:* The **Financial Analyst** tracks costs and revenue.

Select and install supply chain software and equipment

1. *Supervise vendor setup of inventory management and fulfillment software:* The **Inventory Manager** ensures software is installed and set up properly.
2. *Supervise vendor installation of fulfillment equipment:* The **Fulfillment Director** ensures equipment is functional with the help of the Quality Assurance Tester.
3. *Determine internal safety protocols for the equipment:* The **Quality Assurance Tester** determines safety protocols and best practices.

Develop and launch employee training program

1. *Develop training sessions:* The **Human Resources Specialist** develops the training sessions with the help of the Training Manager.
2. *Train employees to use the software and equipment:* The **Training Manager** runs the training program on the established protocols.
3. *Monitor employee progress and improve training processes:* The **Training Manager** refines the training process.

Weekly Challenge 1

1. In the project planning phase, you lay out higher-level milestones and break down the effort into project tasks. What type of methodology are you using?

- Team scheduling
- Top-down scheduling
- Goal scheduling
- Bottom-up scheduling

 **Correct**

2. In the project planning phase, you create a timeline that includes the start and end date, as well as dates for events in between. What is this timeline called?

- Calendar
- Time management assessment
- Schedule
- Staging document

 **Correct**

3. You are in the planning phase and need to track the cost of hiring a vendor and launching a new website. What component contains this information?

- The financial management plan
- The project budget
- The team reviews
- The project schedule

 **Correct**

4. You review the tasks for the project and set dates to begin the project, site launch, and gather user feedback. Which of the following components of the planning phase does this update?

- Budget
- Risk management
- Task management
- Schedule

 **Correct**

5. As a project manager, you facilitate a kick-off meeting. During the meeting, you introduce the shared vision of the project and why it matters. Where on the agenda should this be?

- Roles
- Goals and scope
- Background
- Questions

 **Correct**

6. Suppose as a project manager, you're running a kick-off meeting. You accurately define what work is and is not included in the project. What agenda item does this represent?

- Project purpose
- Roles
- Intended outcome
- Scope

 **Correct**

7. As a project manager, you are explaining to your team the difference between a milestone and a task. How would you explain a task to the team?

- Tasks are milestones that are shorter to complete.
- Tasks are milestones with a flexible finish date.
- Tasks are activities to finish in a set period of time that help reach a milestone.
- Tasks are activities that have a flexible finish date because milestones often change.

 **Correct**

8. Imagine that you are a project manager trying to complete a website design. What activities might be tasks that must be accomplished to complete the project? Select all that apply.

- Implement feedback by the designer.

 **Correct**

- Create initial mock-ups of the website.

 **Correct**

- Host a check-in meeting with the team.

- Test the website for usability.

 **Correct**

9. Project managers should follow which three best practices when assigning tasks to complete milestones? Select all that apply.

- Consider teammates' familiarity with the tasks.

 **Correct**

- Add an assignee and due date to each task.

 **Correct**

- Balance the workload of tasks between teammates.

 **Correct**

- Assign deadlines to tasks, but not milestones.

10. What are the benefits of making a work breakdown structure (WBS)? Select all that apply.

- You and your teammates can easily identify the tasks you assigned to each milestone.

 **Correct**

- You can get a sense of each stakeholder's workload.

- You can assign tasks to two or more team members.

- You have a visualization tool that assists in assigning tasks.

 **Correct**

Week 2 : Building A Project Plan

Learning Objectives

- Examine tools and best practices to build a project plan.
- Learn how to make accurate time estimates and describe techniques for acquiring them from team members.
- Explain why a project plan is necessary and what components it contains.

2.1 Getting Started With A Project Plan

2.1.1 Components of a project plan

A project plan can be useful for any project, big or small, since it **helps you document the scope, tasks, milestones, and overall activities of the project**. At the **center of the project plan is the project schedule**. The project schedule can help you **estimate the amount of time it'll take to complete the project**, and it can provide the team with a way to track the project's progress against your goals.

What goes into a project plan may vary from company to company, but most plans contain these **five basic elements**. These are: **tasks, milestones, people, documentation, and time**.

A project plan will include **tasks and milestones**, two topics we discussed before. **Tasks are activities that need to be accomplished within a set period of time**. They're assigned to different members of the team according to their roles and skills. And **milestones are important points within the schedule that indicate progress**. They usually signify the completion of a deliverable or phase of the project.

A project plan will also include the **people** working on your team and their roles. It's important that **each team member understands their role and the tasks** they're responsible for completing. Ensuring that everyone is clear on their assigned tasks frees you up to focus on managing the project and creates a sense of personal responsibility for members of the team. A project plan is a good place to **link to relevant documentation**. This includes documents like your **RACI chart**, which helps to define roles and responsibilities for individuals on your team. You can also link to your **charter**, which clearly defines the project and outlines the details needed to reach your goals. Relevant documentation can also include documents like your **budget and risk management plan**.

Lastly, a project plan should include the **estimated time** that will be spent on the project. This **forms the basis of the schedule**, which is the anchor of your project plan. The estimated time includes **dates on which tasks should be started and completed** and the dates when you hope to **reach various milestones**. It also includes the start and end dates of the project, which are important in determining which resources you'll need and when you'll need them.

2.1.2 Putting together the pieces of a project plan

Every project plan is a living artifact that serves as your team's roadmap throughout the project. We have covered some common elements of project plans, including tasks, milestones, people, documentation, and time. Let's look at how these elements intersect with other important components to create a comprehensive plan for your project.

How project plan components are connected

You have learned that at the center of the project plan is the project schedule, which helps you estimate the amount of time it will take to complete the project and provides the team with a way to track the project's progress against your goals. In addition to the schedule, you should also include the following components in your project plan:

- Scope and goals
- Work Breakdown Structure (WBS)
- Budget
- Management plans



Project scope and goals

Both the project scope and goals will be captured initially in your **project charter**, the document that clearly defines the key details of your project. You can link your project charter in your project plan. Having details about the project's scope and goals easily accessible can help remind your team of the objectives they are trying to accomplish and if anything is asked of them that goes beyond what was initially agreed upon in order to achieve those objectives.

Work Breakdown Structure (WBS)

As a reminder, a **Work Breakdown Structure** is a tool that sorts the milestones and tasks of a project in a hierarchy, in the order they need to be completed. The WBS is key to your project plan since it breaks the work down into more manageable pieces. In your project plan, the tasks should be visible in one place with clear descriptions, owners, and due dates. This will allow you and your team to understand who is responsible for which tasks and when each task is supposed to be completed. Your project plan should also contain detailed milestones and statuses related to these tasks, which will help you and your team members visualize project progress.

In addition to the WBS, further documentation—such as a RACI chart—will help define roles and responsibilities and would be useful to add to your project plan. Keeping this documentation stored or linked in one place is a best practice for transparency and effective communication.

Budget

Throughout the life cycle of your project, the budget will need to be managed and monitored. The project budget is often linked to the project plan because it is heavily dependent on key elements of the project. Linking these components allows for smoother management and visibility.

Depending on the size of your project and your organization, you may not be the primary person responsible for managing the project budget. For instance, if your project is at a large organization and the funds are managed by another department, you may not have as much autonomy or insight into all of the budget elements. As a result, you may not be able to monitor the budget closely. If someone in another department is managing the budget, make sure to have regular check-ins with them to ensure that you are aware of how you are tracking.

Management plans

Management plans—such as the change management plan, risk management plan, and communication plan—are all integral to keeping a project organized and on track and should be linked in your project plan. These plans will be discussed in detail in the coming lessons of this course.

Key takeaway

Project scope and goals, the Work Breakdown Structure (WBS), the budget, and management plans are all important components of your project plan. They help define how basic project plan elements—including tasks, milestones, people, documentation, and time—will be structured and utilized in your project. However, no one project plan will be the same. At Google, we work with a variety of different tools and templates to create and manage project plans. It is important to know your end goals and what is essential to you and your team in order to pull the relevant pieces of the project together.

Test your knowledge: Getting started with a project plan

1. Which of the following is true of project plans? Select all that apply.

- They contain an explanation of why a project may not meet its goals.
- They are a living artifact that serves as a roadmap for your team throughout the project.

 **Correct**

A project plan is a living artifact that helps you document the scope, tasks, milestones, and overall activities of the project. It serves as a roadmap for your team. The schedule is the central piece of a project plan.

- Their central component is a project schedule.

 **Correct**

At the center of the project plan is the project schedule. The project schedule helps you estimate the amount of time it will take to complete the project and provides the team with a way to track the project's progress against its goals. A project plan also contains links to all of a project's documentation and serves as a roadmap for the team throughout the project.

- They are a compilation of a project's documents that the project team uses to carry out project activities.

 **Correct**

A project plan contains links to all of a project's documentation and serves as a roadmap for the team throughout the project. The central artifact in a project plan is the project schedule.

2. What are the basic elements that make up a project plan?

- Tasks, milestones, people, documentation, and time
- Stakeholder information, project proposal, tools, and resources
- Initiation, planning, managing, and execution
- Time estimation, effort estimation, buffer, and sub-tasks

 **Correct**

What goes into a project plan may vary from company to company, but most plans contain these five basic elements.

3. As a project manager, you create a project plan. In the plan are tasks with clear descriptions, owners, and due dates. In which section of the project plan do these tasks reside?

- Work breakdown structure (WBS)
- Management plans
- Budget
- Scope and goals

 **Correct**

The WBS allows the project manager and teammates to understand who is responsible for which tasks. It also indicates when the project manager expects each task to be completed.

4. As a project manager, you create a project plan. In the plan are documents that help keep a project organized and on track, particularly if a risk arises or a change occurs. In which section of the project plan are these documents linked?

- Work breakdown structure (WBS)
- Management plans
- Budget
- Project scope and goals

 **Correct**

These documents, such as the change management plan, risk management plan, and communication plan, are integral parts of a project plan. They serve as your team's roadmap throughout the project.

2.2 Using Estimation To Set Project Timelines

2.2.1 Making realistic time estimates

- **Time estimation** is a prediction of the total amount of time required to complete a task.
- **Effort estimation** is a prediction of the amount and difficulty of active work required to complete a task.

Effort estimation differs from time estimation in that **effort quantifies the amount of time it will take a person to complete work** on a task. On the flip side, **time refers to the overall duration of the task from start to finish**. That includes **inactive time**.

Here's an example. The effort estimation for painting a wall might be 30 minutes, but time estimation might be 24 hours. That's because in addition to the 30 minutes of active painting time, there are also 23 and a half hours of inactive drying time. It's important to understand the difference between time estimation and effort estimation, because it can help you be more efficient with your available resources. If there's idle time baked into a given task, your teammate is effectively free to do other things. A painter can do other tasks while the wall is drying, like painting the mailbox or the window trim.

An unrealistic effort estimate can negatively impact a project schedule. Generally, this happens when you **underestimate the amount of time it will take to complete a task**. Often, the culprit for under estimating effort is **optimism**. And listen, optimism is a wonderful trait for a project manager to possess. But **too much optimism** can lead you to **overlook potential risks** that could set your plans behind schedule. Though it might be tempting to make the optimistic assumption that tasks will be executed exactly according to plan, there is always a possibility that there will be setbacks.

So, how do you try to **avoid making unrealistic effort estimates?** You can do this by **communicating with teammates assigned to each task**. Your teammates will have the **most realistic understanding** of the amount of work required to complete a task and should be able to provide you with the best estimate.

Let's imagine this scenario in the context of our Plant Pals project at Office Green. As a reminder, you're launching a new service to provide top office green customers with small, low-maintenance plants that they can place on their desks. You might assume that creating a contact list of top customers is relatively straightforward and can be completed in a single day. But it's important to really consider certain sub-tasks required to complete work in your planning. **Sub-tasks refer to smaller tasks that are required to complete a larger task.** For example, this might include meeting with the global sales team to identify clients, gathering contact information, determining client language preferences, and building a spreadsheet to house this information.

Asking the teammate assigned to the task for their estimate is likely to yield a **more accurate estimation** since they'll have a deeper understanding of the work and the nuances of what's required to complete the task. You might learn that creating the contact list may take two days to complete, which could be double the time you originally expected. Of course, you can usually ask follow-up questions, or even gently push back on their estimate, as needed.

Now, even though task owners tend to have the strongest sense of how much time they'll need to complete a task, the fact is that effort estimates are just that, estimates, meaning that **sometimes those estimates won't be accurate**. For example, in our Plant Pals scenario, your teammate estimates that it will take two days to create a contact list of top customers. But, let's say that the Sales team is out of the office for a team-building exercise and unable to meet about the client list until after the weekend. This will create a task delay, and as a result, the original estimate is no longer accurate. Luckily, there's a helpful tool called a **buffer** that you can use during the planning phase **to protect against inaccurate effort estimates**.

A **buffer** is **extra time added to the end of a task or a project to account for unexpected slowdowns or delays** in work progress. Buffers are important because they can provide some leeway, just in case your time and effort estimates turn out to fall a bit short. With a buffer, you can add extra time into your schedule, and your project shouldn't fall off track when task delays inevitably arise.

There are **two types of buffers** you can use when planning your schedule: **task buffers** and **project buffers**.

Task Buffers

Task buffers refer to **extra time tacked on to a specific task**. Task buffers **should be used primarily for tasks that are out of the project team's control**. For example, you might ask a potential plant vendor to provide you with a cost estimate by Monday. You might assign them this deadline, knowing that you won't actually need the estimate until Thursday. The time between Monday and Thursday is your buffer, and it provides your team with extra time just in case the vendor sends their estimates to you a day or two late. Task buffers should be **used more sparingly for tasks within the project team's control**. For example, you might choose to add buffers only to tasks that are difficult to complete or that have an element of unpredictability, like the length of time it will take plants to grow.

Project Buffers

Project buffers differ from task buffers in that they **provide extra time to the overall project schedule**. Rather than adding a buffer to every task, you can add extra time as a buffer towards the end of your project schedule. Then you can use that extra time, two to three days, for example, as needed throughout the project. For instance, if a teammate misses a deadline here and there, the project buffer gives you space in the overall schedule to make up for lost time.

I use buffers often in my day-to-day role at Google. For example, on a recent project at Google, I was working with a new hire who was great at coding but kept missing deadlines. I realized they weren't giving themselves enough buffer time to do testing. I started to ask questions about their current workload and the complexity of their tasks, and based on their answers to those questions, I was able to gather insights about their work and determine where I needed to add buffer to their tasks. Ultimately, my goal is to ensure that I'm setting a realistic timeline for the project.

2.2.2 Case study: Run fast, pay later

Time estimation is used to predict the amount of time that will be required to complete a task. We have talked about how a central part of being a project manager involves planning. Carefully performing key steps of your planning process, such as time estimation, can have a big impact on the success of your project. Conversely, flawed time estimation is the root cause of many failed projects. That means many projects fail because project managers and teams fail to accurately estimate the time that it will take to complete tasks.

Let's discuss the following case study, which discusses how inaccurate time estimation can affect a project.

Run fast, pay later: A case study on time estimation

Kendra just scored a project manager role on a new project. It was a highly competitive bid, and the company and Kendra are eager to do a great job.

Kendra realized immediately that the timeline for the project would be almost impossible to execute. However, this was the first big project she was asked to manage. Therefore, instead of letting management know about the project's impossible timeline, Kendra kept quiet and was determined to make it work. She rushed through the planning phase to get the

team moving since time was ticking towards the project completion date. Kendra created all of the planning documents without input from her team or other stakeholders, with the sole intention of reaching the deadline.

During the team meeting, Kendra presented her project plan to the team. Right away, team members expressed their concerns with the timeline. They felt like there wasn't enough time to complete their work, and they worried that the timeline didn't incorporate enough time for reviews. Kendra documented the team's concerns, but instructed them to simply work faster and make it happen.

As the project went on, the project faced schedule delays and other issues due to rework, previously unaccounted for tasks, stressed team members, and concerned stakeholders. Ultimately, the project missed its deadline. Later, the company did a retrospective to determine where things went wrong, and Kendra learned a lot of important lessons.

Analysis of the case study

Let's break down the project planning process Kendra took and identify any missteps and corrective actions that would have helped set her team up for success.

Escalating concerns

Kendra sensed the project timeline was problematic right from the start of the project. Instead of gathering information to support her concerns and sharing it with management, she decided to keep the issue to herself. She moved faster towards the goal instead of slowing down and planning the project thoroughly.

Working carefully

If Kendra had taken the time to work carefully through the planning process, she may have been able to build a more realistic project plan to deliver the best product to the customer. She might also have identified potential time-saving activities that could have helped her team meet the project deadline. Thorough and careful planning with her team could have helped Kendra identify problems and solutions in advance, such as:

- **Elimination of tasks.** It is possible that all of the tasks initially listed didn't need to be completed. There may have been unnecessary work added in, and the team could have completed the project without it.
- **Increased team size.** Kendra could have addressed the potential schedule risk by requesting more resources early on in the project rather than trying to execute without the necessary resources.
- **Streamlining of activities.** There may have been some tasks that could have been done in parallel, or at least not in sequential order.

Gathering input from the team

Kendra should have brought together team members, peers, and management to help build and review her project plan, especially given the challenges of meeting the proposed project

timeline. Kendra also didn't take action to address the concerns of the team members who were responsible for completing the tasks within the estimated time.

In this case study, the project manager faced the repercussions of careless time estimates that resulted in rework and unplanned work. Most times, you can take a pain point in a project—like concerns about timelines—and turn it into an opportunity to be flexible and modify the plan to steer the project in a better direction.

Key takeaway

Be realistic when estimating time and effort for a project. Take the time to carefully evaluate potential risks and the impact on the work, and talk to your team members about these challenges. Don't be afraid to escalate potential concerns to management. Optimism is a trait of a great project manager and leader, but it can adversely affect your projects when it comes to time estimation.

2.2.3 Reflection: Time estimation

Consider the following scenario:

You are to oversee the project for a new textbook release for the fall semester. You've done something similar before, so you feel confident speaking with the stakeholders, project sponsor, and faculty director. You assure them the project will meet the 6-month deadline.

Around three months into the project, you notice that your writers consistently miss the writing deadlines you assign. Then you learn that a printer upgrade may delay printing the text books. Unfortunately, you forgot to include this delay in your time estimation. Now you have to tell the stakeholders that the project may not launch in time for fall.

What might you do differently next time to improve the outcome of this situation? Write three to four sentences.

Before the project launch, the project manager should speak to the writers to more accurately determine how long it takes to do their tasks.

The project manager might identify the printer technology as a task that is out of the team's control and add a task buffer. Additionally, when the project manager first learns about the printer issue, they should immediately update the time estimation and inform stakeholders.

The project manager can also look towards potential time saving activities, including: eliminate tasks, increase the team size to get more work done and meet the deadline, and streamline any of the activities in order to complete them in parallel with other tasks.

All-in-all, it's important to perform time estimation, effort estimation, and add buffers to build realistic plans for reaching the project goal and ultimately, success!

2.2.4 Overcoming the planning fallacy

It is human nature to underestimate the amount of time and effort it takes to complete a task—from anything as simple as walking the dog to something as complex as completing a

project. People generally want to remain hopeful about a positive outcome, and this is a great quality to have as a person. But as a project manager, this kind of optimism can also be a deficiency, especially during the planning phase of a project. Let's examine a theory known as the **planning fallacy** to better understand how to set yourself up for success in the planning phase.

The planning fallacy and optimism bias

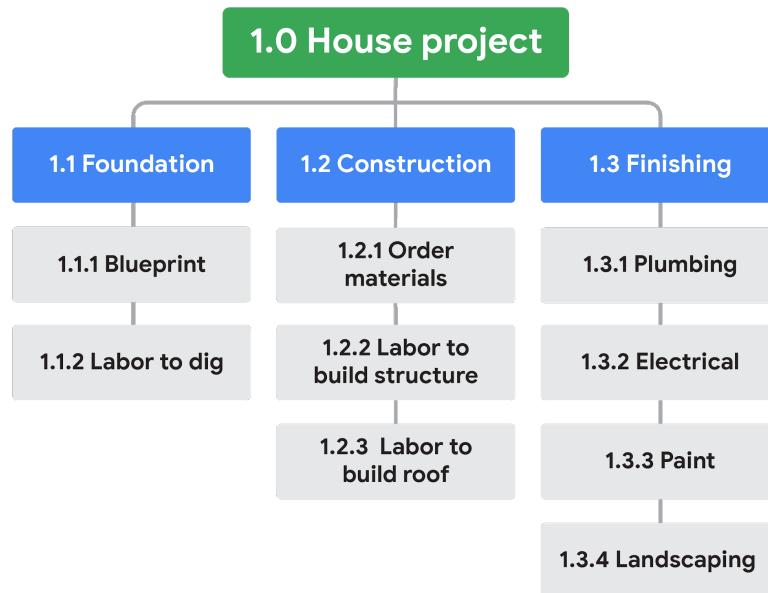
The idea of the planning fallacy was first introduced in a 1977 paper written by Daniel Kahneman and Amos Tversky, two foundational figures in the field of behavioral economics. The planning fallacy describes our tendency to underestimate the amount of time it will take to complete a task, as well as the costs and risks associated with that task, due to **optimism bias**. Optimism bias is when a person believes that they are less likely to experience a negative event. For example, when you are planning to walk your dog in between meetings, you might think that you can do it faster than you actually can. Optimism bias is what tells you that you are going to be able to walk your dog without being late for your next meeting. If you don't consider things that might affect the time it will take you to walk your dog—the weather, the chance of them running into another dog and wanting to play, or the fact that they frequently get distracted while sniffing around—you might be late for your next meeting, or you might miss it altogether!

The planning fallacy can happen to anyone, regardless of whether or not they have experience completing similar tasks. Whether this is your first time walking your dog or your hundredth, you still have to consider the different factors that can affect how long it will take you to complete the walk. This same principle applies in project management. You may be brand new to this kind of project or you may have managed tons of similar projects before; either way, you still need to be careful not to underestimate the time it will take to complete each task on this particular project. As a project manager, you should aim to balance being aware of the planning fallacy with keeping an optimistic attitude about the project, even as things change. Be optimistically realistic: Push for the best outcomes while planning for the proper time it may take to accomplish each task.

Avoiding the planning fallacy: A case study

Think about the planning fallacy in relation to yourself as a project manager. If you have planned massive efforts in your project plan with an optimism bias, this planning fallacy could have a major impact on your project execution. You could set your team up for failure by not giving them enough time to complete their tasks, causing work to have to be redone or missing opportunities to execute the project more efficiently.

Let's examine how this happens. David is a project manager responsible for a home construction project. Let's check out his Work Breakdown Structure (WBS):



Working through his plan, David knows that certain things need to happen for the house to be completed. He has to order materials, the materials have to be delivered, the contractor has to actually build the house, and there needs to be time for completing finishing touches and adjustments. The time estimations for those major tasks might break down like this:

Task	Estimated Duration
Foundation	2 weeks
Construction	4 weeks
Adjustments	4 weeks

After creating a WBS and a time estimation chart, David estimates that the construction project will take a total of ten weeks. This sounds perfect because it meets his delivery requirement. If David is unaware of the planning fallacy, he may think his plan is solid and that his team is on their way to building the house within the target timeline!

Fortunately, David is mindful of the planning fallacy. He examines the time estimates more carefully. He considers risks like weather delays or crew members calling out sick, which could set the project's completion date back. He meets with his team members and other stakeholders to help him uncover other possible risks that could affect the project timeline. After carefully gathering information, he adjusts the time estimates, adding **task buffers** to some of the project tasks to account for the potential risks.

Key takeaways

Being on the lookout for “what-ifs” is a key project management skill. Considering situations that could affect whether or not the project is completed on time can help you overcome the planning fallacy. Also, you will always have a project team in your corner, so make sure you use them as resources to help uncover possible risks. Remember to be “optimistically

realistic” and push for the best outcome while still planning for the proper time to accomplish each task.

2.2.5 Capacity planning and the critical path

Capacity refers to the amount of work that the people or resources assigned to the project can reasonably complete in a set period of time. A person can only do so much, and it's important to keep in mind each person's capacity when assigning work. This is where capacity planning comes in.

Capacity planning refers to the act of **allocating people**, and **resources to project tasks** and determining whether or not you have the necessary resources required to complete the work on time. During this process, you might find that you need more resources to speed up the project timeline, like a second web developer, or a third writer.

Let's imagine capacity planning in the context of our Plant Pals project at Office Green. If you know that you'll need to deliver plants to 100 customers over a period of five days. Then you'll need to determine if you've hired enough delivery drivers to meet that deadline. If one driver averages four deliveries within an eight-hour workday, then you know you'll need to hire at least five drivers to complete the work on time.

Even if a person on your project team is spending 100% of their time at work on your project, they'll have **limited capacity** for the amount of work they should be expected to complete each day. Between meetings, unexpected urgent tasks, and other elements of a typical work day, there's only so much each person can complete. So how do you decide where a teammate should focus their priorities, and make the most of their capacity? You can **prioritize their time by plotting the critical path of your project timeline**.

The **critical path** refers to the **list of project milestones that you must reach in order to meet the project goal on schedule** as well as the mandatory tasks that contribute to the completion of each milestone. **Anything else is considered off the critical path.**

For example, tasks on the critical path for launching Project Plant Pals might include hiring plant vendors, developing a new website, and fulfilling deliveries. A task like adding flowers to your product lineup, is nice to have, but might not have much impact on the overall success of your project, because this task isn't crucial to your launch. These tasks aren't part of the critical path.

To summarize, your **critical path includes the bare minimum number of tasks and milestones you need to reach your project goal**. If your team is unable to complete any of those tasks on time, that might result in a project delay.

To determine the critical path of a project, you'd **start by listing all the tasks required to complete the project and the milestones they feed into**. This is a perfect time to think back to your work breakdown structure, which is a chart that sorts all the milestones, and tasks of a project into a hierarchy according to the order in which they need to be completed. This includes a detailed overview of every project task. Then, **determine which tasks on the list absolutely can't begin until another task is complete**. This is called a **dependency**. Next, you'll work with your team to **make time estimates for each task**, and map each task from start to finish. The **longest path is your critical path**.

There are a few **factors that can impact capacity, and capacity planning**.

Identify which task can happen in parallel, which means they can happen at the same time as other tasks. You will also need to **identify which task can happen sequentially**, meaning they must happen in a specific order. When you identify which task can happen in parallel, it helps you create efficiencies within your project schedule, by demonstrating where you can complete multiple tasks at the same time. Identifying sequential tasks, helps you identify the tasks that you need to prioritize early on in the project. For example, a sequential task for your Plant Pals project may include needing budget approval before hiring a vendor. And two parallel tasks might include hiring delivery drivers, and the development of a website. These tasks have no relationship to one another, as they focus on different portions of the project, and can be completed by different members of the team. That means that one task can begin even if the other task hasn't been completed. And so the work to complete these tasks can happen at the same time.

Determine which project tasks have a fixed start date. A fixed start date refers to the date on which you must start work on your task in order to achieve your goal. Identifying whether or not your tasks have a fixed start dates can help with capacity planning. Because it helps **ensure that you'll have the right number of people available to complete tasks on time**. For example, let's imagine that your contract says you'll need to deliver 100 plants on a specific date. That means that the task of picking up those plants has a fixed start day of one day prior to delivery.

Determine which project tasks have an earliest start date. An earliest start date refers to the earliest date in which you can begin working on a task. Identifying an earliest start date can **set accurate expectations** for when vendors, and team members will be up and running on the project. This can help you plan your work, and prioritize your work accordingly. For example, if you're working with a new vendor, you need to wait until contracts are signed, and the purchase order is approved, and created before the vendor can start. Let's say that at Office Green this process can take about three weeks. Based on this information, you can determine that the earliest start date for your vendor will be three weeks from the kick off meeting with your vendor.

Identifying if a task has float, also sometimes known as slack. Float refers to the amount of time you can wait to begin a task before it impacts the project schedule, and threatens the project outcome. These are **high priority tasks** that have low to no wiggle room. This helps reinforce what is, and what is not on your critical path. For instance, **tasks on the critical path should have zero float**, meaning there is no room for delays. And tasks that do have float are not a part of the critical path. For example, the shipment of plants to a priority customer who has requested their delivery on a specific date is a task that has zero float.

2.2.6 Creating a critical path

As you've just learned, the **critical path** refers to the list of required project milestones you must reach to complete the project schedule, as well as the mandatory tasks that contribute to the completion of each milestone. You can think of the critical path as a framework that tells you, the project manager, where you are, where you are headed, and when you will get there.

Why the critical path is critical

The critical path helps you determine the essential tasks that need to be completed on your project to meet your end goal and how long each task will take. The critical path also provides a quick reference for critical tasks by revealing which tasks will impact your project completion date negatively if their scheduled finish dates are late or missed. A critical path can help you define the resources you need, your project baselines, and any flexibility you have in the schedule.

How to create a critical path

Each project you work on will be different, but there are some general steps for creating a critical path that are applicable to most projects.

Step 1: Capture all tasks

When you first start working on your project schedule, you will capture all of the tasks associated with the completion of the effort. Remember to use the key planning documents you have created to get you to this point, such as your **work breakdown structure (WBS)**. The main goal in this step is to make sure that you aren't missing a key piece of work that is required to complete your project. When creating a critical path, focus on the essential, "need to do" tasks, rather than the "nice to do" tasks that aren't essential for the completion of the project. Here is an example of critical tasks for building the structure of a house:

Task
A) Excavation
B) Foundation
C) Framing
D) Roof
E) Plumbing
F) Heating, ventilation, and air conditioning (HVAC)
G) Electrical
H) Insulation
I) Drywall + Paint
J) Flooring

Step 2: Set dependencies

Now that you have captured all of your critical tasks in list form, arrange those tasks in order of completion by identifying dependencies. To determine **dependencies**, figure out which tasks must be completed before other tasks can start. For example, you can't paint the outside of a house before the house is built, so the task of framing the walls must come before the task of painting them. Identifying dependencies is key to a successful project schedule.

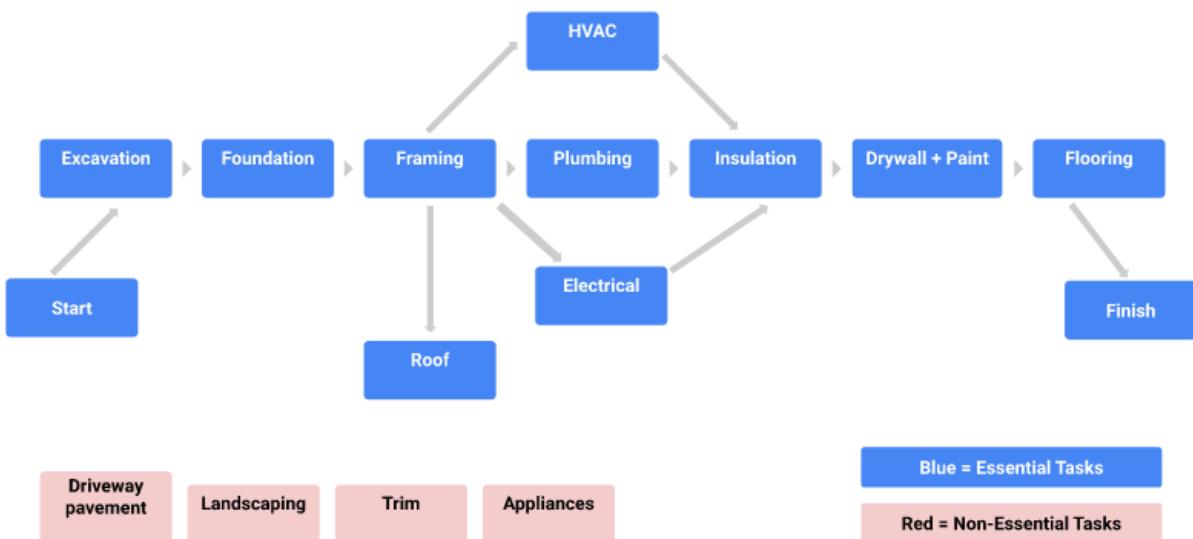
To figure out dependencies for each task, ask:

- Which task needs to take place before this task?
- Which task can be finished at the same time as this task?
- Which task needs to happen right after this task?

Once you have answered these questions, you can list these dependencies next to your list of tasks:

Task	Dependency
A) Excavation	
B) Foundation	A) Excavation
C) Framing	B) Foundation
D) Roof	C) Framing
E) Plumbing	C) Framing
F) HVAC	C) Framing
G) Electrical	C) Framing
H) Insulation	E) Plumbing, F) HVAC, G) Electrical
I) Drywall + Paint	H) Insulation
J) Flooring	I) Drywall + Paint

Step 3: Create a network diagram



One common way to visualize the critical path is by creating a **network diagram**. Network diagrams, like the example below, sequence tasks in the order in which they need to be completed, based on their dependencies. These diagrams help visualize:

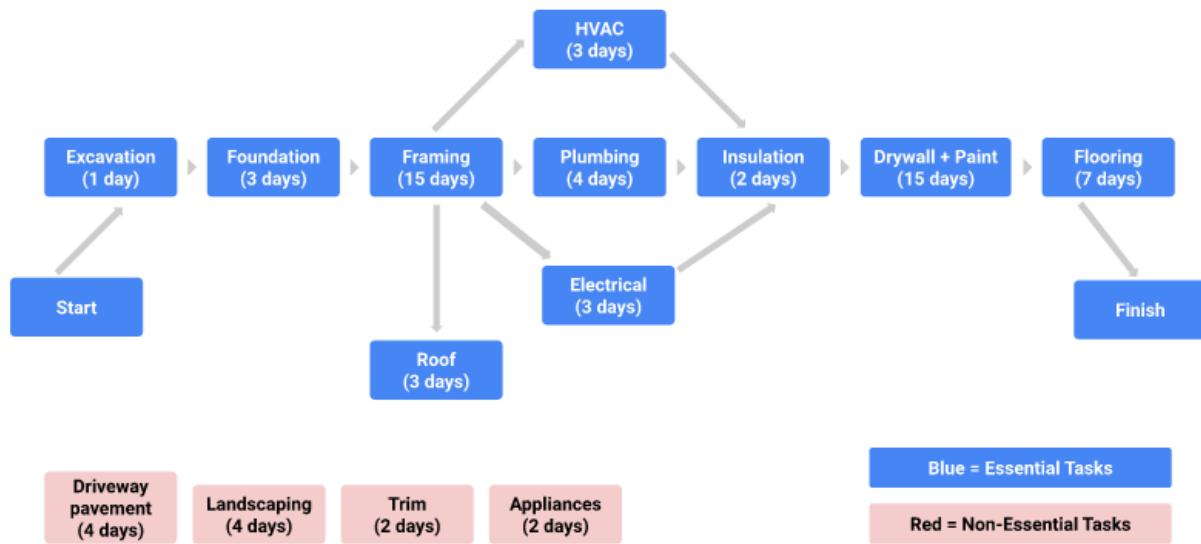
- The path of the work from the start of the project (excavation) to the end of the project (flooring)

- Which tasks can be performed in parallel (e.g., HVAC and plumbing) and in sequence (e.g., plumbing then insulation)
- Which non-essential tasks are NOT on the critical path

Step 4: Make time estimates

After determining tasks and dependencies, consult key stakeholders to get accurate time estimates for each task. This is a crucial step in determining your critical path. If your time estimates are significantly off, it may cause the length of your critical path to change. Time estimates can be reviewed and updated throughout the project, as necessary.

Task	Duration	Dependency
A) Excavation	1 Day	
B) Foundation	3 Days	A) Excavation
C) Framing	15 Days	B) Foundation
D) Roof	3 Days	C) Framing
E) Plumbing	4 Days	C) Framing
F) HVAC	3 Days	C) Framing
G) Electrical	3 Days	C) Framing
H) Insulation	2 Days	E) Plumbing, F) HVAC, G) Electrical
I) Drywall + Paint	15 Days	H) Insulation
J) Flooring	7 Days	I) Drywall + Paint



Step 5: Find the critical path

Now that you have your estimated durations for each task, add that information to your network diagram:

If you add up the durations for all of your “essential” tasks and calculate the longest possible path, you can determine your critical path. In your calculation, only include the tasks that, if they go unfinished, will impact the project’s finish date. In this example, if the “non-essential”

tasks—like landscaping and driveway pavement—are not completed, the house structure completion date will not be impacted.

You can also calculate the critical path using two common approaches: the **forward pass** and the **backward pass**. These techniques are useful if you are asked to identify the **earliest and latest start dates** (the earliest and latest dates on which you can begin working on a task) or the **slack** (the amount of time that task can be delayed past its earliest start date without delaying the project).

- The **forward pass** refers to when you start at the beginning of your project task list and add up the duration of the tasks on the critical path to the end of your project. When using this approach, start with the first task you have identified that needs to be completed before anything else can start.
- The **backward pass** is the opposite—start with the final task or milestone and move backwards through your schedule to determine the shortest path to completion. When there is a hard deadline, working backwards can help you determine which tasks are actually critical. You may be able to cut some tasks—or complete them later—in order to meet your deadline.

You can read more about each of these concepts and critical path calculation methods in the following articles:

- [How to Use the Critical Path Method for Complete Beginners](#)
- [Critical Path Method: A Project Management Essential](#)

2.2.7 Identify: Time estimation methods

You are the project manager on the construction of a new house. In this exercise, you'll identify the concept in each project scenario.

Project scenario	Concept
While planning the house construction, you set the requirements to pour the concrete foundation pad, which will take 14 days total. It will take seven days for the crew to actually prepare the area and pour the concrete.	Effort estimation
You need to ensure the framing is complete within the next seven days so that the electrical installation can begin. As you take inventory of your resources, you realize that although you have the materials, you do not have enough framers to complete the job in seven days (if they work standard, 8-hour days). To meet the deadline, you can request approval from the homeowner to authorize overtime pay, or inform the owner that there will be a delay in the electrical installation.	Capacity planning
You're constructing this home during the summer months in Florida, where it rains often during the season. To provide an accurate timeline that details when you'll complete each phase of work, you decide to allocate several extra days to each of the concrete, framing, and electrical work phases.	Task buffers

To provide an accurate timeline for when you will complete the project, you decide to add three days past when you expect to finish, in case of any unforeseen construction delays.	Project buffers
To help visualize your entire project process, you create a graphical representation that shows the path of project work from start to finish	Network diagram
This is your first project in the state of Florida, and your inexperience results in your not adding enough task buffers for inclement weather. When a tropical storm prevents any construction for several days, you realize you underestimated the time you need to complete the project.	Planning fallacy
To determine the home construction end date, you need to figure out the fewest number of tasks you need to complete to meet your end goal, and how long each task takes. You create a list of milestones you must reach and the mandatory tasks that go along with each milestone.	Critical path
When planning the roof installation, you use your network diagram to add up the days it will take to complete each task, starting at the beginning and leading up to installing the roof. This gives you your earliest start date for roof installation and helps you identify the critical path or free float of the project.	Forward pass
You plan five days for your painters to complete the interior painting tasks. To calculate when your team should start painting in order to be done on time, you count back from the project completion date. This gives you your latest start and finish dates for painting.	Backward pass

2.2.8 Getting accurate time estimates from your team

Time estimation, effort estimation, and capacity planning are all helpful techniques for creating your project schedule. At **the center of all this planning is your team**. Throughout the schedule-planning process, you're **working with teammates to gather estimates**, and you're **taking into account each person's capacity** when building the project schedule. It makes sense to **involve your teammates** at this stage. After all, the person assigned to the given task is likely to **have the best sense of how long it will take** to complete that task. They'll also **have the best sense of their own capacity** for taking on the work. But these conversations are a two-way discussion, and you'll need to tap into your **soft skills to get the most accurate estimate** from your team.

Soft skills are personal characteristics that help people work effectively with others. These include **crucial communication and interpersonal skills** we've discussed over the course of this program. Soft skills can be important when trying to **understand what might be blocking someone's ability to do their best work**.

Let's go over **three ways to use soft skills and gather accurate estimates** from your teammates. These are **asking the right questions, negotiating effectively, and practicing empathy**.

Asking the right questions

Think of conversations around the time estimation as a kind of **interview**. You're **connecting with your teammates to learn more about how they work on specific tasks**, and you'll use this information to build your schedule. To aim to get the most relevant information from these conversations, you'll want to be certain that you're asking **effective, open-ended questions** that lead to the answers you're seeking.

An **open-ended question** is a question that **cannot be answered with a yes or a no**. The **answer provides the relevant details** of what you need to know. Let's imagine this in the context of your project at Office Green. You've discussed the design of the new website with your web designer, and you'd like to know how long it will take them to mock up designs for your review. Now let's say you start the conversation by asking a question like, **can you complete the mock-ups in one week?** This is a **closed-ended question** and might elicit a simple yes or no answer, which doesn't tell you much about the task of designing a website or about your teammate's working style.

Now, imagine if you had started this conversation with an open-ended question. For example, you might ask the web designer something like:

- How long does it typically take you to mock up a website design like this one?
- How complex are the steps to complete this task?
- What are the risks associated with this task?
- When do you think you can have this ready?

By asking your teammates effective, open-ended questions about their assigned tasks, you can learn more about how they work and what they do. As you have more of these conversations, you will develop a better sense of your teammates roles and their tasks, and you will be able to rely less on your team to make accurate estimates.

Negotiate effectively

Part of your job as the project manager is to bridge the gap between high-level goals of the project and the day-to-day perspective of your team. While your project might be your number one priority, it's possible that people on your project team have competing priorities on other teams to keep track of, as well. Negotiating effectively can **help you influence a team member to make your project their priority**, by **collaborating to find an outcome** that works for everyone.

For example, let's imagine that the website designer estimates it will take them two weeks to mock up the website design for review. But perhaps you were hoping that the estimate might be closer to one week. To arrive at an estimate that works for both you and the designer, you might gently challenge the estimate by asking follow-up questions. Perhaps you'd ask if their estimate includes mocking up designs for multiple pages. If so, you might ask if the designer is able to share one or two pages with you sooner than their proposed deadline. By asking questions, you can determine if their estimate is flexible, or if you need to bring in an additional designer to support the schedule. By negotiating effectively with your teammates, you can **create a sense of shared ownership over the project outcomes** and **create a schedule that aligns with everyone's workload**.

Practicing empathy

Empathy refers to a **person's ability to relate to the thoughts and feelings of others**. Practicing empathy at work can be a very effective way to **build trust with your team**. Your teammates are humans, and each person can only do so much. When you're discussing estimates with the team, you might practice empathy by asking each person about their workload, including work outside of your project and the overall **work-life balance**. You might also ask if they've scheduled vacation or leave during the duration of the project, or if there are crucial holidays in which they won't be working. This can help you avoid assigning tasks when teammates are unable to complete them on time.

For example, the web designer might tell you that they're also designing a website for another team at Office Green, and that the timeline for both projects overlap. So, to avoid overloading your designer with work, you might work with the other project manager to balance workloads across the teams. People like to feel their work is valued, so part of empathy is remembering to always be appreciative of the work, collaboration, and support that you're getting from the team.

2.3 Utilizing Tools To Build A Project Plan

2.3.1 Developing a project schedule

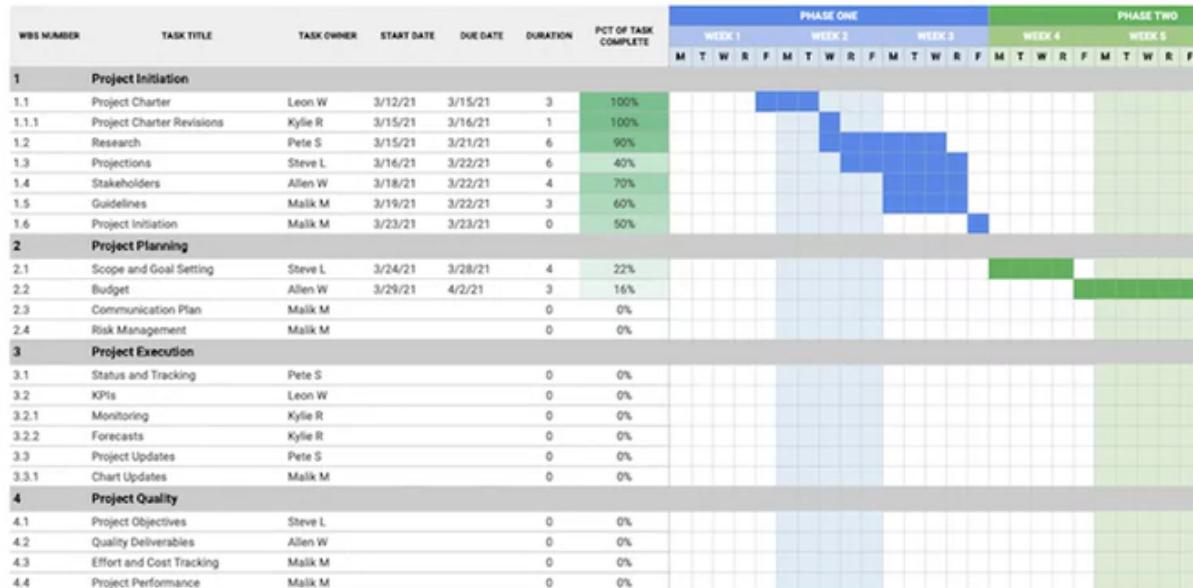
In the previous videos, we took you through a few different time estimation methods. Now you can relate how to use time estimation methods to prevent project failure. Let's discuss how to pull all of this information into a project plan to help you and your team stay on track to meet your goals. Even the simplest projects can benefit from a clear plan, and an anchor of a good project plan is a clear schedule containing all the tasks of a project, their owners, and when they need to be completed. Once you have your project schedule, you can build a solid plan around that schedule using tools like spreadsheets and Asana.

There are many helpful tools that you can use to create a project schedule, but let's focus on one that we sometimes use here at Google called a **Gantt chart**. A Gantt chart is a **horizontal bar chart that maps out a project schedule**. Fun fact: the chart gets its name from American engineer, Henry Gantt, who helped popularize the chart in the early 1900s. So, why did people working in project management find this chart useful? Well, it's a highly **visual representation of a project's tasks with clear breakdowns of who's responsible for the work and when those tasks are due**. For many people, a visual aid that builds upon written directions can be a helpful way to understand and synthesize the work they need to do, when they need to complete it, and how their individual tasks connect to the other tasks in a project.

Gantt charts are almost like calendars. They feature the **start and end dates of each task**, and **the bars align with how much time is devoted to each of those tasks**. Using a Gantt chart, you'll use **colored bars to illustrate the days** that they'll be working on these tasks. The bars cascade down to illustrate the passing of time and the blocks of time in which the tasks are completed. Gantt charts can be a helpful tool for tracking schedules.

Creating a Gantt chart in a spreadsheet is pretty simple. You can organize your left columns by items like task title, task owner, start date, due date, duration, and percent of task

complete. This is a great place to list the tasks and milestones previously identified in a work breakdown structure. You'll include relevant information in the rows below, organized by start date. On the right side of your sheet, you'll order your columns by the weeks estimated to complete the project from start to finish. In the rows below that, you'll include bars representing the dates when certain tasks will take place.



Though the project schedule serves as the central component of the project plan, you can use separate tabs on your spreadsheet to house or link to other documents you want to include in your plan, like a RACI chart or a project charter. You may also opt to include your plans for risk management and communication here too.

With a spreadsheet, you can simply add a tab for your documents. Keeping every document for the project in one spreadsheet saves time, helps everyone stay organized, and reduces the burden of having to search through emails for information.

While Gantt charts are a useful tool, they are far from the only option for your project plan, and there are plenty of reasons why this form of documentation might not work for you or your project team. For a simple project, you might find that your team responds better to a digital document that features a list of tables or tasks, their owners, due dates, and links to other relevant planning documents. Or perhaps your team works best with Kanban boards, which uses cards to track and visualize the progress of your tasks. Regardless of your chosen tool, if your plan includes the project's goals, its tasks, owners, start and end dates, and relevant planning documentation, then you'll be able to keep everyone on the same page.

2.3.2 Project plan best practices

Let's discuss **five best practices for building a great project plan** that will remain useful throughout the execution and closing phases of your project.

Carefully review the project's deliverables, milestones, and tasks

During the initiation phase, you'll recall that you created a project charter with important information regarding your project, like your goal, scope, and deliverables. When a project enters the planning phase, your plans become more granular. Let's discuss this in the context of your project at Office Green. In your plan, you need to break this information down further. You're creating a new website for the service, so you'll need to break that deliverable down into smaller milestones, like kicking off a meeting with the web developer and gaining stakeholder approval. And those milestones will break down into smaller tasks, like mocking up a design of a new website and developing a landing page. Each of these tasks will be assigned to a teammate and given a start and end date. Now, a new website isn't the only Project Plant Pals deliverable. You'll need to break down every deliverable into milestones and tasks to ensure that you and your team have a clear picture of what needs to be done to meet your project's goals. Your plan revolves around completing each and every tiny task, so you should take your time to get this piece right.

Give yourself time to plan

There's a reason that planning is its own phase of the project life cycle. It's a time-intensive process, especially for larger projects with multiple deliverables. Planning gives you and your team some time to think realistically about what your team can and cannot accomplish within a certain time frame. You're not a machine, and neither are your teammates. There are limits to the amount of work any one person can do in a given time frame. Using the strategies that we've shared earlier, like effort estimation and capacity planning, can help you and your team get a realistic sense of how long the project will take and when you'll be able to hit your milestones. It's also important to allow for buffer time, since projects rarely go exactly as planned. Later in the project, you'll be grateful that you initially planned for some built-in flexibility around timing.

Recognize and plan for the inevitable—things will go wrong

Even with thorough planning, your projects will still experience unexpected setbacks and bumps in the road. You can't plan for every problem, but the team can identify the risks that will most likely occur and create plans to prevent or mitigate those risks. As we mentioned before, buffer is a helpful tool for mitigating issues related to slowdowns in progress.

Stay curious

Though you may be the sole expert on your project overall, it's extremely unlikely that you're an expert on every task of the project. That's why it's so important to sit down with your teammates during a planning phase and ask lots and lots of questions. As we mentioned earlier, asking your teammates questions about their work can give you deeper insights into their tasks for the project. Their input will help you build a stronger plan, and the back and forth dialogue will help you build trust between you and your teammates. To keep the project running smoothly, it's also important to understand the expectations, priorities, risk assessments, and communication styles of your stakeholders and vendors. For example, you might ask stakeholders how to best keep them in the loop on the project's plans, and you might ask your vendors about their availability to complete work for the project.

Champion your plan

While deciding how to organize your plan, you'll want to ask yourself a few questions. Like:

- Can your teammates use the tool you used to build your plan?
- Is the information clear enough for your stakeholders?
- Will using this plan as a single source of truth save your team and stakeholders the time and energy when they need to find information on the project?

If the answer to each of these questions is a strong yes, then you're on the right track. To achieve buy-in from your teammates and stakeholders on your project plan, champion it! Tell your team why it benefits them to stay on top of the plan. By doing so, you may influence your teammates to stay on track and update the plan regularly.

2.3.3 Creating a project plan: Tools and templates

Project plans are critical because they are used to capture the scope and time it takes to complete a project. The project plan is essentially the project's blueprint—it lays out all of the activities and milestones that your team needs to achieve in order to successfully complete the project. Project plans come in various shapes, sizes, and forms. Depending on the project you are managing, the template you use may vary, and some companies even have standard templates they require their project managers to use.

In the previous videos, you learned about various tools and techniques to create a project plan. But how do you know which tools and techniques to use and when? As a general rule, it is best to use a spreadsheet for a simple project and project management software for a more complex project. Regardless of what tool you use, be sure to include this key information:

- **Task ID numbers or task names:** You might end up with dozens, hundreds, or even thousands of tasks in a project. Assigning a task ID or name makes it easy to find and reference a task when communicating with team members and stakeholders.
- **Task durations:** A task duration is the amount of time you estimate that task should take. Adding task durations to your project plan helps you organize and prioritize the tasks in the project to help ensure you hit your goal on time.
- **Start and finish dates:** Including start and finish dates for each task helps you track whether you are progressing on time or not.
- **Who is responsible for what:** Including each team member's role and responsibilities helps promote clarity and efficiency. As a best practice, assign an owner to each task, as well.

Using a spreadsheet to build a project plan

Spreadsheets are an excellent tool to use for project plans, particularly for projects that are less complex and that have a clear assignment of tasks. Spreadsheets can require a lot of manual input of information, but as a project manager, you may find that you like the control that spreadsheets provide. Spreadsheets are also customizable, so you can tailor them to your project's needs.

The graphic below shows what a project plan for a website launch might look like in a simple spreadsheet.

Project plan					Project title (Project title)	Project manager (Project manager's name)	Company name (Company name)	Date (Project Plan)											
No.	Summary task	Owner	Start date	Due date	Phase one					Phase two					Phase three				
					Week 1					Week 2					Week 3				
			M	T	W	R	F	M	T	W	R	F	M	T	W	R	F		
1	Phase 1																		
1.1	Project charter	Leon W	3/26	3/27															
1.1.1	Project charter revisions	Kylie R	3/27	3/27															
1.2	Research	Pete S	3/27	3/29															
1.3	Projections	Steve L	3/27	3/29															
1.4	Stakeholders	Allen W	3/27	3/29															
1.5	Guidelines	Mark M	3/29	3/29															
1.6	Project initiation	Mark M	4/3	4/4															
2	Phase 2																		
2.1	Scope and goal setting	Steve L	3/29	4/1															
2.2	Budget	Allen W	4/2	4/4															
2.3	Communication plan	Mark M	4/3	4/4															
2.4	Risk management	Mark M	4/3	4/4															
3	Phase 3																		
3.1	Status and tracking	Pete S	4/5	4/8															
3.2	KPIs	Leon W	4/9	4/11															
3.2.1	Monitoring	Kylie R	4/9	4/11															
3.2.2	Forecasts	Kylie R	4/10	4/11															
3.3	Project updates	Pete S	4/11	4/12															
3.3.1	Chart updates	Mark M	4/11	4/12															

Pro tip: It is important to incorporate your **Work Breakdown Structure (WBS)** numbers into your project plan. In this example, the ID numbers directly relate to the WBS numbers, which is a helpful way to maintain consistency.

Spreadsheet templates

It is helpful to try online tutorials so that you can get used to the different functionalities and user interfaces of each tool. We have included links to some project plan templates below:

[Smartsheet: Project Plan Templates for Microsoft Word](#)

[Smartsheet: Project Plan Templates for Google Sheets](#)

[Google Project Plan Timeline Template](#)

[Microsoft Gantt Chart Template](#)

Work management tools

There are many work management tool options available for you to utilize when planning your project. We covered some of these in previous videos, but as a refresher, it is important to keep in mind that every company, project manager, and customer has a work management tool preference. You may come across tools like [Smartsheet](#), [Asana](#), [Jira](#),

[Trello](#), and many more. These tools allow for collaboration and communication at a task level.

Key takeaway

The tool you use to create your project plan should help you collect and track project details, manage your schedule, and visualize how your project is progressing. A clear, thorough, and organized project plan can help create the recipe for project management success.

2.3.4 Introduction to Kanban boards

Kanban boards are a visual tool used to manage tasks and workflows. Kanban boards can be created on whiteboards, magnetic boards, poster boards, computer programs, and more. Tasks associated with the project are written on cards. These cards are placed in columns, which represent the progress made.

Although Kanban boards are useful for all kinds of projects, they are typically most suitable for project teams working in an **Agile** project management approach. You may remember that Agile project management is an iterative approach to managing projects that focuses on continuous releases and incorporates customer feedback with every iteration. Once you become a project manager and have created your project plan, you can decide whether a Kanban board is right for your project.

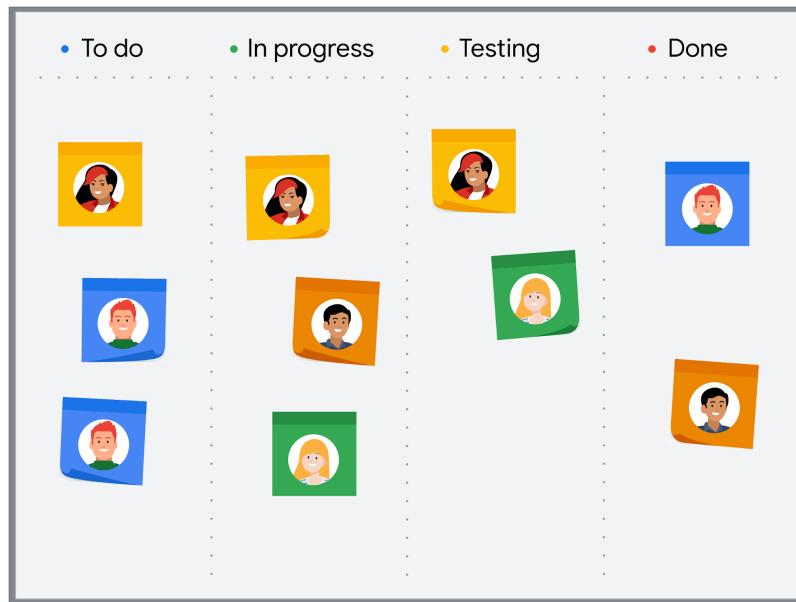
Purposes of a Kanban board

Kanban boards are used to:

- Give a quick visual understanding of work details and provide critical task information.
- Facilitate handoffs between stakeholders, such as between development and testing resources or between team members who work on related tasks.
- Help with capturing metrics and improving workflows.

Using a Kanban board

Kanban board



Before creating a board, it is best practice to gather the necessary information and lay out key elements, such as tasks, status, dates, and durations. That information is useful when building your board.

Let's turn our focus to an example of a Kanban board below. Each colored rectangle is associated with a task. The tasks are represented horizontally across the effort timeline. Each column represents where the task is in relation to its completion. So as a task is started, it will move from *to do*, to *in progress*. When the project is almost ready to be released or complete, it will move to *testing*, and when it is tested and approved, it will move to *done*. Note that this is just one example of a Kanban board, and depending on the tool you use—such as software or a physical board—you can customize your board using various columns and cards. The board can also have rows for resources (team or person), to help visualize who is actively working on what.

Creating cards

Cards will vary in style—you can even use sticky notes on a whiteboard—but most cards will contain a few key details about the task that they represent. When using physical cards, teams often use both sides. Here is what both sides of the card should include:

Front

- **Title and unique identifier:** Make sure you have a quick reference for tasks and ID numbers.
- **Description of work:** Briefly describe the task to be accomplished. Remember that this is intended to be captured on something no larger than an index card.
- **Estimation of effort:** Estimate the amount of work it will take to complete the task. For example, you can write “small,” “medium,” or “large” to indicate the level of effort you think that task will involve.

- **Who is assigned to the task:** Indicate who is responsible for completing the task; ideally, one person per card.

Back

- **Start date:** Include the start date of the task for use in metrics, tracking, and ensuring that your time estimate is accurate.
- **Blocked days:** Indicate which days your task may be halted. A task can become blocked if it can't continue to be worked on. For example, if you were supposed to receive a deliverable and it hasn't been delivered yet, then your day may be blocked for this particular task.
- **Finish date:** As with any plan, it is important to track when the task is supposed to be finished. This allows you to ensure that your project is still on track to reach the end goal.

Kanban board software

If you opt to use a software tool rather than a physical board, you have a few options. [Asana](#) and [Trello](#) are both great software tools to use if you are looking to introduce Kanban to your project. There are many options, so take the time to evaluate which is best for you and your project.

Test your knowledge: Utilizing tools to build a project plan

1. Gantt charts give project teams a visual representation of project tasks. What else do Gantt charts include?

- Due dates, durations, and milestones
- Resources, deliverables, and success metrics
- Roles and responsibilities
- Stakeholder contact information and budget items



A Gantt chart provides a visual breakdown of project requirements and project completion dates.

2. What tool can a project manager use for organizing all aspects of a complex project?

- Work management software
- A digital document
- A calendar
- Email



Work management software like Asana and JIRA allow collaboration and communication at the task level. These tools help streamline management of complex projects.

3. Which project management tool uses cards to track and visualize task progress?

- A Gantt chart
- A spreadsheet
- Smartsheet
- A Kanban board

 **Correct**

Kanban boards are used to manage tasks and workflows. Project managers can create Kanban boards on whiteboards, magnetic boards, poster boards, and computer programs.

4. When creating cards for a Kanban board, which items should go on the *front* of the card? Select all that apply.

- Who is assigned to the task

 **Correct**

This indicates who is responsible for completing the task; ideally, one person per card. The front of the card should also contain a title and unique identifier, a description of the work, and an estimation of the effort required to complete it.

- Title and unique identifier

 **Correct**

These enable you to have a quick reference for tasks and ID numbers. The front of the card should also contain a description of the work, an estimation of the effort required to complete it, and who is assigned to the task.

- Blocked days

- Description of work

 **Correct**

This briefly describes the task to be accomplished. The front of the card should also contain a title and unique identifier, an estimation of the effort required to complete the task, and the person assigned to it.

Weekly Challenge 2

1. You create a new project plan for your company's staff training program. Which component of the project plan tracks the charter, budget, and RACI chart?

- Timeline
- Tasks
- Documentation
- Milestones

 **Correct**

2. What is a typical consequence of overly optimistic task time estimates in the project planning phase?

- You overlook potential risks that delay your plans.
- You create accurate estimates that increase team morale.
- Stakeholders and project sponsors leave the project.
- The team can clearly communicate potential risks for the project.

 **Correct**

3. In project planning, float is the amount of time a task can be delayed past its earliest start date without impacting the project. How much float is allowed for tasks on the critical path?

- Zero days
- One week
- One month
- One day

 **Correct**

4. You are meeting with a teammate to get an estimate for a website launch page design. What question can you ask your teammate to get an accurate time estimate for the task?

- How long does it typically take to mockup a website design like this one?
- Can you turn the design of the web page in by tonight?
- Can you allocate some time to work on the design this week?
- Is this the only project you are currently working on?

 **Correct**

5. Tools like Gantt charts and Kanban boards help benefit team members in what ways? Select all that apply.

- They can demonstrate how their individual tasks connect to other tasks in the project.

 **Correct**

- They can illustrate when they need to complete their individual tasks.

 **Correct**

- They provide clear context about work project details.

 **Correct**

- They can translate project contracts like the statement of work (SOW) into number and dollar amounts.

6. As a project manager, you are responsible for creating the project plan. You schedule a meeting with your teammates to highlight concerns and account for upcoming holidays. What project plan best practice does this represent?

- Staying curious
- Giving yourself time to plan
- Championing your plan
- Recognizing and planning for the inevitable

 **Incorrect**

Please review [the video on best practices for creating a project plan](#).

7. Which of the following is a best practice when estimating the project timeline? Select all that apply.

- Be thorough during the planning process.

 **Correct**

- Work quickly through the planning process to get the project started.
- Escalate any timeline concerns to stakeholders.

 **Correct**

- Prove competency by trying to resolve timeline concerns without input.

8. As a project manager, how realistic should you be when planning tasks for a project?

- Pessimistically
- Optimistically
- Creatively
- Overly

 **Correct**

9. As a project manager, you create a critical path. You have identified the tasks and determined the dependencies. What is the next step to successfully complete the charter?

- Contact project vendors to start their work.
- Start the execution of the project.
- Develop completion estimates and verify with stakeholders.
- Conduct a forward pass of the network diagram.

 **Incorrect**

Please review [the reading on creating the critical path](#).

10. In a Kanban board, what type of information is typically stored on the cards?

- Status of the tasks such as: to do, in progress, done
- Budget of the project task
- Information required to complete the task
- Retrospective team notes on the project

 **Correct**

Week 3 : Managing Budgeting And Procurement

Learning Objectives

- Examine how to obtain support for legal and compliance issues and avoid ethical conflicts during the procurement process.
- Explain the procurement process and identify key procurement documentation.
- Describe how to estimate, track, and maintain a budget.
- Identify the components of a project budget and how the budgeting process works.

3.1 Understanding Project Budgets

3.1.1 The importance of budget setting

A project budget is the estimated monetary resources needed to achieve the project's goals and objectives.

When reviewing a project budget, you need to consider all of the potential and projected costs needed to complete the project. You break the budget down by milestones, which are important points within the project schedule that indicate progress and usually signifies the completion of a deliverable or phase of the project, and list activities and tasks alongside their associated costs. This ensures that you calculate the correct expenses for a particular period of time. This is considered a forecast.

A forecast for your project budget is a cost estimate or a prediction over a period of time. You'll frequently review your project budget and it will evolve throughout the project life cycle. These budgets usually contain items such as labor, operating costs and costs associated with obtaining necessary materials like hardware, software, or equipment.

The importance of a project budget focuses on more than just saving money. In project management, a budget is considered a deliverable. It is a success metric. The project budget is a tool to communicate exactly what is needed and when it is needed with stakeholders. The budget will have a direct effect on the company's financial viability. So, as you can probably tell by now, it's an integral part of project management.

Budget creation takes place in the initiation phase of your project. Keep in mind that the budget will be adjusted as needed throughout the lifecycle of the project. Depending on your role in the company, you won't always be the sole creator of the budget. Your ownership over things like budget and vendor relationship may vary depending on factors such as size of the company or support team or the team organizational chart. Although you may not always manage the budget from start to finish, budget and milestones go hand in hand. So it's important for you to know the ins and outs of the budget throughout the project.

As a project manager, you may be tasked with obtaining approvals for spending. Most companies have a signing or spending policy. This usually outlines who has the authority to commit resources or incur costs or other obligations on behalf of the company. This is important because you won't be able to continue with some of your deliverables or action

items, if you don't know how much certain activities will cost, and whether you have the necessary funds available. It wouldn't make any sense to rent a property without checking on the rental cost first, right? That's especially true if the rental price is higher than your budget. The same thinking is applicable for your project budgeting. The budgeting process usually **happens in conjunction with the scheduling process** because the steps of the scheduling process are highly dependent on the costs. The project manager will collaborate with people on the project to create their estimations.

For the most part, after the cost estimating process has been completed, it's common for the project sponsor or another key stakeholder to review and approve estimation costs, and if necessary adjust and reallocate funds for the project. This could mean that either the CEO or the COO are the ones giving the okay or the final sign-off. For example, in our Office Green project, the director of product has sign-off approval.

As we mentioned before, the project manager will most likely need some kind of sign-off from the finance department. This may vary from company to company. So just make sure you're aware of your company's processes. Project budgeting is never a one-size-fits-all operation. As the project manager, you will have to prioritize where you allocate funds within the project to ensure maximum output.

Ultimately, most projects are created to improve workforce productivity, increase revenue, or attempt to save costs within an organization. Budgeting is one of the most important aspects of project management, and when you start, to stay on budget is one of the trickiest tasks. It's important **not to go over budget** and cost the company extra money, and it's equally important **not to be under budget** either since that might affect the company's budget for the next year.

When it comes to high-profile businesses, such as publicly traded companies like Google, or public sector organizations such as your local education department, they may have a requirement to report on their financial performance to shareholders or auditors. Going too far **over or under budget will change the way the company budgets for the next year**, potentially leaving you with less money to work with in the future. In other words, a project manager must show the requested amount of money was used in order to secure enough budget for future projects. For smaller businesses, there may be a tighter budget, in which case it's especially critical to be careful about spending too much money on a project than initially allocated. It's really helpful to your overall success as a project manager to understand budgeting.

3.1.2 Key components of a project budget

Project managers must account for understanding stakeholder needs, budgeting for surprise expenses, maintaining adaptability, and reviewing and reforecasting throughout the entire project.

Let's imagine some of these factors in our Office Green project. In terms of **understanding stakeholder needs**, it's important to **know exactly what stakeholders expect from this project** in order to deliver. As a company, the ultimate goal is typically to make a profit and to save money and time. The project sponsor—the Director of Product, in this case—needs the project to come in at a certain cost in order to make profit.

As the project manager, you will also need to **budget for surprise expenses**. Let's say several planters arrive from the vendor broken and cracked. Maybe the planter is cracked during delivery process, and it isn't the vendor's fault. In that case, you will have to order some additional planters to fulfill orders, and that may be an added cost.

As your project continues along, you'll have to **review your budget** and sometimes **reforecast**, which means **creating a separate revised budget based on how your project is tracking**. Keeping on top of the budget will help you stay organized, and reforecasting is a way to recalibrate the budget, if necessary.

As the project manager Office Green, you might find that you need to shift costs to different resources and categories within your project budget. Maybe you initially overestimated the cost of plants from the vendor and underestimated the costs of marketing your new launch. You can reallocate these dollars as necessary.

There are several **factors to consider when creating a budget**, including resource cost rates, reserve analysis, contingency budget, and cost of quality.

- **Resource cost rates** are exactly what they sound like, **the cost of a resource**. Some examples of resources are labor, tools, equipment, materials, and software.
- Performing a **reserve analysis** will help you **account for any buffer funds** you may need. A reserve analysis is a **method to check for remaining project resources**. In performing a reserve analysis, you'll **review all potential risks** to your project and determine if you need to add buffer funds. These funds are necessary because new costs that you didn't originally foresee will arise.
- **Contingency budget** in the context of project management, is **money that is included to cover potentially unforeseen events** that aren't accounted for in a cost estimate. The purpose is to **compensate for the uncertainty** that occurs in cost and time estimates, as well as unpredictable risk exposure.
- The **cost of quality** refers to **all of the costs that are incurred to prevent issues with products, processes, or tasks**. The cost of quality includes prevention costs, appraisal costs, internal failure costs, and external failure costs.

Once you've applied these factors, resource cost rates, reserve analysis, contingency budget, and the cost of quality into your budget, you can estimate what your project might cost. Remember, your budget will most likely change, starting with an initial estimate is one way to ensure that you're at least on track and it's okay if your budget does change, that's why we review and reforecast.

3.1.3 Project budgeting 101

A **project budget** is the estimated monetary resources needed to achieve a project's goals and objectives. In previous lessons, we covered a wide range of information related to project budgets. Let's recap to make sure you have the information and tools you need to create and manage your project's budget.

Budgets are typically created in the **initiation and planning phases** of your project. As with any other project management document, you need to continue to review and control the budget throughout the life cycle of your project. Your budget is more than just how much it will cost to complete the project—it is a helpful tool to reference when communicating with

stakeholders and can double as a tracker for your project's progress. Budgets also help control your costs and act as the baseline for the financial portion of the project.

Project budgeting best practices

Here are a few tips to consider when creating your project budget:

- **Reference historical data:** Your project may be similar to a previous project your organization has worked on. It is important to review how that project's budget was handled, find out what went well, and learn from any previous mistakes.
- **Utilize your team, mentors, or manager:** Get into the habit of asking for your team to double check your work to give you additional sets of eyes on your documents.
- **Time-phase your budget:** Time-phased budgeting allows you to allocate costs for project tasks over the projected timeline in which those expenses are planned to take place. By looking at your tasks against a timeline, you can track and compare planned versus actual costs over time and manage changes to your budget as necessary.
- **Check, check, and double check:** Make sure that your budget is accurate and error-free. Your budget will likely require approval from another department, such as finance or senior management, so do your best to ensure that it is as straightforward to understand as possible and that all of your calculations are correct.

Categorize different types of costs

There are different types of costs that your project will incur. For example, you may need to account for both **direct costs** and **indirect costs** in your project budget. Categorize these different types of costs in your budget so that you can ensure you are meeting the requirements of your organization and customer.

Direct costs

These are costs for items that are necessary in order to complete your project. These costs can include:

- Wages and salaries of employees and contractors
- Materials costs
- Equipment rental costs
- Software licenses
- Project-related travel and transportation costs
- Staff training

Indirect costs

These are costs for items which do not directly lead to the completion of your project but are still essential for the project team to do their work. They are also referred to as **overhead costs**. These costs can include:

- Administrative costs
- Utilities

- Insurance
- General office equipment
- Security

Develop a baseline budget

A **baseline budget** is an estimate of project costs that you start with at the beginning of your project. Once you have created a budget for your project and gotten it approved, you should publish this baseline and use it to compare against actual performance progress. This will give you insight into how your project budget is doing and allow you to make informed adjustments.

It is important to continually monitor your project budget and make changes if necessary. Be aware that budget updates can require the same approvals as your initial budget. Also, you should “re-baseline” your budget if you make significant changes. Re-baselining refers to when you update or modify a project's baseline as a result of any approved change to the schedule, cost, or deliverable content. For example, if you have a significant change in your project scope, your budget will likely be impacted. In this instance, you would need to re-baseline in order to adhere to a realistic budget.

Perform a reserve analysis

A reserve analysis will help you account for any buffer funds you may need. First, review all potential risks to your project and determine if you need to add buffer funds, also referred to as a contingency budget. These funds are necessary because new costs that you did not expect are likely to happen throughout the project. You may also want to account for cost of quality in your overall project budget. The cost of quality refers to all of the costs that are incurred to deliver a quality product or service, which can extend beyond material resources. This includes preventing or addressing issues with products, processes, or tasks, & internal and external failure costs. One example would be having to redesign a product or service due to defects. A defect could mean refunds to customers, time and money required to create a new product or service, and multiple other potential costs affecting the client.

Key takeaways

Budgeting in the project management world is a complex process involving many different parties and documentation, but following the best practices described in this reading can help break it down. Remember to use historical data and time-phasing, and reach out to your team for support. Make sure you are capturing all of the components of your budget, including direct and indirect costs. Finally, be sure to baseline your budget so you know where your money is being used and when. These tips can help set you up for budget management success.

Test your knowledge: Understanding project budgets

1. Fill in the blank: Creating a _____ establishes a cost estimate for your project budget and ensures that you calculate the correct expenses for a set period of time.

- cost of quality
- forecast
- contingency budget
- reserve analysis

 **Correct**

A forecast is a cost estimate or prediction that helps you calculate the correct expenses for a particular time period. You will frequently review your project budget, and it will evolve throughout the project life cycle.

2. As a project manager, you determine the cost for items such as software, tools, labor, and equipment. What budgeting term refers to these types of costs?

- Contingency budget
- Resource cost rates
- Reserve analysis
- Cost of quality

 **Correct**

Resource cost rates refer to the cost of resources like labor, tools, equipment, materials, and software. You will need to determine how much each of these resources will cost the company.

3. Which of the following strategies should you consider when creating your budget? Select all that apply.

- Baseline your budget

 **Correct**

A baseline budget is the estimate of costs you start with at the beginning of a project. When your project accrues actual costs, you use the baseline budget to determine if the project is under or over budget. It is also a good idea to document all costs and time-phase your budget.

- Time-phase your budget

 **Correct**

Time-phased budgeting allows you to allocate costs for project tasks over the projected timeline in which those expenses are planned to take place. By looking at your tasks against a timeline, you can track and compare planned versus actual costs over time. Also, make sure you baseline your budget and document all types of costs.

Document all costs

 **Correct**

You should document all types of costs—both internal and external. Some additional strategies to implement include time-phased budgeting and setting a baseline budget.

Disregard historical data

4. Which three of the following items are examples of direct costs for your project?

Utilities

General office equipment

Staff training

 **Correct**

Staff training is a direct cost because it is necessary in order to complete your project.

Wages and salaries of employees and contractors

 **Correct**

Employees and contractors are the people who do the work necessary to complete the project. Therefore, their wages and salaries are considered direct costs.

Materials costs

 **Correct**

Since materials are necessary to complete your project, they are considered a direct cost.

3.2 Managing A Project Budget

3.2.1 Creating a project budget

By now, we know that **project budgets helped to control costs throughout the duration of the project**. They help project managers establish the main objectives of their project and keep them within a reasonable framework to ensure that the project makes financial sense for the company.

What's **the best way to start making a project budget**? You'll find that as you get further along in the process, there are various resources and tactics that you can use to make sure you aren't overestimating or underestimating. You'll **use techniques like researching historical data, leveraging experts, the bottom-up approach, confirming accuracy, and setting your baseline**.

Researching historical data

For starters, you can always **review past projects that are similar** to yours to get an idea of what your project could entail. We refer to that as referring to **historical data**. This way, you can find out what past project managers did right and wrong. The more experienced you

become as a project manager, the more historical data you will have to draw upon, and the better your estimations will be.

Leveraging experts

In a similar vein, you can leverage experts in the field. To **leverage something means to use it to its maximum advantage**. Leveraging experts means **gathering their insights to do something more effectively**. Reaching out to colleagues who worked on a similar project in the past will be a great resource for you as an entry-level project manager. If you're asking someone outside of your company for advice, be sure to **avoid sharing any confidential company information** with them.

Bottom-up approach

Another approach to take is the bottom-up approach. This means **thinking about all the parts of a project from the beginning to the end**, including **making a list of every material, resource, contract worker, or anything** that comes with an associated cost, and **adding all of that together**. You should also ask the vendors you are thinking of working with for quotes, so you can get a rough estimate of how much their work will cost.

Confirming accuracy

After you've created your budget with these resources, you'll want to **double-check everything to confirm accuracy**. Of course, the work doesn't stop once you've created the budget.

Setting your baseline

Your **baseline** is the **dollar amount that you'll use to measure against**, to find out if you're **on track or not**, and to **measure the success of your project**. Once you've set your baseline, you'll have to **revisit that number and adjust it to match** where the project is currently. Making adjustments in real-time is something you have to do a lot as a project manager. The size of the project and company will determine how often you should re-examine and update the budget.

With Project Plant Pals, we suggest **breaking the project down into tasks**. That's the bottom-up approach. From there, we **estimate the cost of each item, add those estimates together, add contingency and tax, and seek overall approval** on our budget from our key stakeholders. Since we're creating a new service, we'll need to hire designers and developers to build out the website and develop the app for our customers. Once these tasks are laid out, you'll have to **negotiate employee allocations, contractor rates, and shop** around for vendors and delivery services. This will help you assign cost estimates to each task.

Now that the tasks have been broken down and assigned, you'll need to **account for material costs**.

- **Do your team members and stakeholders need equipment?** Maybe an employee with a disability requires modifications to accommodate or enhance their workplace. Maybe some remote workers need the hardware and accessories necessary to work

from home. This is where you will include everything from computers to software related to the launch.

- **Will you need storage space for miscellaneous plants or supplies?** "Miscellaneous" is a term that we use to represent additional items that are not included in any of the other areas. Usually, they are minor items or items where there are only one or two of them, and that they are not a major budget line. Be sure to add these items to your expenses.

You will also need a few more line items. Start with the **fixed cost** that won't change over the course of the project. Let's say you're paying to advertise the web developer role to a job board. It may cost you about \$50 to post that job description. That's an example of a fixed, one-time cost. Next, you'll need a line item for things like travel expenses and meals. Finally, we want to **account for buffers and reserves**. You'll need to factor in **unexpected costs** that may come up later on. Be sure to leave yourself with some buffer room. We've chosen to account for **five percent of the overall project budget as our buffer**. This is a **standard practice** and depending upon how much detail you know about the project already, you can raise or lower your percentage for reserves. The client needs to be aware of this buffer in case spending starts to become excessive. In which case, you need to problem-solve with the client and agree to adjust the scope. You'll want to include a **planned cost versus actual cost column** too. This way, you can **keep track of your cost** every step of the way.

Remember, **every project will have an estimated cost and a final cost**. Your goal is to **get your estimated cost as close to the final cost as possible**. You may have to **recalibrate your estimations during the project**. That's when the estimated cost to complete the project comes in. The final cost of your project differs from the forecasted or estimated cost if you weren't exactly on target with your budget.

Remember, while your goal is to get as close to the original estimate as possible, that won't always be the case. Each time you're placed on a new project, it will be helpful to look back on the final costs of previous projects and see how close you came to your goal.

3.2.2 Helpful budget templates

In the previous lessons, you learned that projects come in all shapes and sizes—and so do their budgets. Budgets can be created in a simple spreadsheet or with more complex software programs. Determining which tool is right for you and your project will require input from your organization and your customer.

Budget spreadsheet templates

Budget templates are a useful tool for helping you estimate, track, and maintain a project budget. Below, you will find a few different budget templates that you can use for future projects. Each of these templates is formatted in a digital spreadsheet.

				TARGET BUDGET	ACTUAL BUDGET	UNDER/OVER		
	\$	\$	\$					
TASK	Hrs	Rate	Units	\$/Unit	Fixed cost	Budget	Actual	Under/Over
CATEGORY								
Task						\$		\$
Task						\$		\$
Task						\$		\$
Task						\$		\$
						\$	\$	
CATEGORY								
Task						\$		\$
Task						\$		\$
Task						\$		\$
Task						\$		\$
						\$	\$	
CATEGORY								
Task						\$		\$
Task						\$		\$
Task						\$		\$
Task						\$		\$
						\$	\$	
TOTAL								
						\$	\$	

[Microsoft Excel Budget Templates](#)

[Microsoft Excel Website Budget Template](#) (applicable to any project)

[Google Sheets Budget Template](#)

Spreadsheet skills for budgeting

When using a spreadsheet to track a budget, there are basic skills you will need to learn. Understanding how to use SUM and AVERAGE formulas, tables, and filters are just a few of the spreadsheet skills that will make your job as a project manager much easier. Make sure to check the [course resources on spreadsheets](#) for an introduction to these skills.

3.2.3 Maintaining a project budget

Monitoring the budget is crucial for a project manager to **enforce accountability in terms of spending**. By monitoring your budget regularly, you'll be able to tell if the plans you set into action are actually being implemented on **both a financial and operational level**.

As you may recall from a previous video, a milestone is an important point within the project schedule that indicates progress and usually signifies the completion of a deliverable or phase of the project. Milestones are a metric for tracking progress in the project. **Milestones are a great opportunity to re-review the budget** to identify if anything needs to be reset or revisited throughout the project. That said, **milestones can act as a checkpoint for budget management and payment**. You may have agreed in your contract that you get paid at certain milestones rather than at the end of the project. **Fixed contracts** are usually **paid for when certain milestones are reached**, whereas **time and materials' contracts** are usually **paid for monthly** based on the hours worked and other fees associated with the work, like travel and meals.

As you monitor your budget, you'll want to be on top of cost control. **Cost control is a practice where a project manager identifies factors** that might **impact their budget** and then **creates effective actions to minimize variances**.

Think of it this way: it's **proactive budget management**. It is much better to be proactive with your budget than to be reactive with your budget. If you are reacting instead of anticipating, then you may already have some kind of problem with the budget. In order to control costs, you should **establish a sign-off plan and inform the appropriate stakeholders** of any changes that occur. You'll have to ask yourself which stakeholders or sponsor will be approving the contractor or vendor time sheets. What about invoices? You'll also need to **make sure any changes within the project budget are agreed upon**. For example, you shouldn't approve a new cost or item if it hasn't been agreed upon or if it isn't within the scope, and you shouldn't be spending money if it's not pre-approved by your stakeholder or project sponsor.

It is also important to make sure there's good business case before bringing it to the stakeholder. You'll also need to **manage changes as they're made**. This involves **updating forecasts or estimates and tracking everything**. You never want to be surprised by budget changes, and you don't want to have to keep asking stakeholders for more money. You can prevent that by revisiting these numbers on a regular basis. You'll also want to accept that budget misses will happen. It's your job to bring the expected cost overruns within acceptable limits. Before the project starts, **collaborate with the project sponsors and key stakeholders to determine an acceptable limit**. Is it 1%, 10%? You'll decide together.

In a previous video, we talked briefly about what happens when a project goes over or under budget. Having a project go **over budget** may mean that the **company will have less funds for other areas within the business**, so let's dig a little deeper into the effects on a company when a project goes under budget. Even though it seems like going under budget would be a project manager's dream, it actually isn't. If you go **under budget**, it's an indicator of **less than satisfactory project management**.

Going **under budget indicates** that you may not have done a good job at initially estimating. Going under budget could also indicate that you could have spent more money on the project, meaning that you could have possibly had extra resources or better quality output, and it may mean that **the budget for future projects will be slashed**. The company may figure that since you did this project under budget, you'll be able to do future projects under budget too, so that's not a totally desirable situation to be in either. The best option is to **adequately account for, adapt, and manage your budget** with that risk in mind.

3.2.4 Overcoming budgeting challenges

As you have learned, effective budgeting can set you up for success as a project manager. This reading will discuss some of the most common budgeting challenges you may encounter as a project manager and how to manage them.

Challenge 1: Budget pre-allocation

You may encounter situations where your budget is already set before you even start the project. This is known as **budget pre-allocation**. Some organizations follow strict budgeting cycles, which can lead to cost estimations taking place before the scope of the project is completely defined.

If you are given a pre-allocated budget, it is important to work with your customer to set expectations on scope and deliverables within the allocated budget. To deliver a great product within your allocated budget will require detailed planning.

A pre-allocated budget should also be routinely monitored to ensure the amounts you have budgeted are sufficient to meet your costs. Be sure to carefully track all expenses in your budget. Regularly match these expenses against your pre-allocated budget to ensure you have sufficient funds for the remainder of your project.

Part of that planning includes making sure that you are tracking fixed and time- and materials-based expenses. **Fixed contracts** are usually paid for when certain milestones are reached. **Time and materials contracts** are usually paid for monthly, based on the hours worked and other fees associated with the work, such as travel and meal expenses.

Challenge 2: Inaccurately calculating TCO

Another budgeting pitfall you should try to avoid is underestimating the **total cost of ownership (TCO)** for project resources. TCO takes into account multiple elements that contribute to the cost of an item. It factors in the expenses associated with a product or service over its lifetime, rather than just upfront costs.

Let's relate TCO to something more common, like owning a vehicle. Let's say you buy a vehicle for a certain price, but then you also pay for things related to the vehicle, such as license fees, registration fees, and maintenance. If you add all of this up, you have your TCO for that vehicle. So now that you know what your TCO is, you may consider those fees before you buy your next vehicle. For example, you might opt for a vehicle with fewer maintenance requirements than one that requires more frequent service, since you know that will save you money overall.

The same concept applies to budgeting on a project. If you have a service requirement for a software technology that your team is using, for example, then it is important to budget for the costs of maintenance for that service. Additional types of costs you may need to account for when calculating TCO include warranties, supplies, required add-on costs, and upgrade costs.

Challenge 3: Scope creep

Scope creep is when changes, growth, and other factors affect the project's scope at any point after the project begins. Scope creep causes additional work that wasn't planned for, so scope creep can also impact your budget.

There are several factors that can lead to scope creep, such as:

- A vague Statement of Work (SoW)
- Conversations and agreements about the project that aren't officially documented

- Unattainable timeframes and deadlines
- Last-minute asks from priority stakeholders

Addressing these factors as you plan your project can help prevent scope creep from impacting your budget.

Key takeaway

There can be many challenges to face when planning and managing a budget. Budget pre-allocation, underestimating the TCO of project resources, and scope creep are some of the most common. As you continue your career as a project manager, awareness of these challenges can help you avoid and overcome them.

3.2.5 Activity: Develop a project budget

Activity Overview

In this activity, you will create a project budget to estimate the total cost for developing and implementing an Operations and Training Plan. Be sure to complete this activity before moving on. The next course item will provide you with a completed exemplar so you can compare your work. You will not be able to access the exemplar until you have completed this activity.

Scenario

Review the scenario below. Then follow the step-by-step instructions.

As project manager for Office Green, your job includes working with the operations team to develop and implement an Operations and Training plan for the Plant Pals service. In addition to identifying the major milestones and associated tasks for this plan, you also need to estimate the costs and create a budget.

You will use this budget as a baseline throughout the project, but you should monitor spending throughout the project and make adjustments as needed.

The estimated costs of the milestones and their subtasks are as follows:

Milestone 1: Establish a plant delivery and logistics plan.

- *Task 1:* Purchase delivery trucks. Purchase two delivery trucks at a cost of \$15,000 per truck.
- *Task 2:* Source packaging materials. Purchase 1,500 boxes at a cost of \$2 per box.
- *Task 3:* Pay delivery drivers. Pay two delivery drivers for ten days (assume eight-hour work days) at a rate of \$15 per hour.

Milestone 2: Select and install supply chain management software and equipment.

- *Task 1:* Source vendor (includes setup, installation, and deployment of software and equipment systems): Fixed cost of \$15,000.

Milestone 3: Develop and launch an employee training program.

- *Task 1:* Develop training sessions. Pay the HR specialist \$50 per hour for ten days (assume eight-hour workdays).
- *Task 2:* Train employees to use the software and equipment. Pay the Training Manager \$25 per hour for ten days (assume eight-hour workdays).
- *Task 3:* Monitor employee progress and improve training processes. Pay the Training Manager \$25 per hour for another ten days (assume eight-hour workdays).

Your estimated budget to reach these milestones is \$62,000. This amount includes a reserve buffer of \$3,600 to account for unexpected costs. You should generally allow for a buffer of at least 5%.

Step-By-Step Instructions

Step 1: Access the template

To use the template for this course item, click the link below and select “Use Template.”

Link to template: [Project budget](#)

Step 2: Add milestones and tasks

Fill in the project milestones and tasks under **Milestones & Tasks**. Be sure to group each task with its associated milestone. When you’re finished, your budget should include three milestones and seven tasks. We’ve filled in the first milestone and task for you.

Step 3: List project employees

For each task associated with particular employees, enter the employee who should be paid for that task under **Employee Details**. Some tasks may not have any associated employees, while others could have two or more (e.g., two delivery drivers).

Note: Your spreadsheet should include the pay rates for hourly employees, like the delivery drivers. You should only list salaried employees when they work extra hours on special projects included in the scenario (e.g., the HR Specialist developing the training sessions).

Step 4: List employee hours and rates

Next, calculate the number of hours each employee will spend on each task. Enter this number under **Hours**. Now list each employee’s hourly pay rate under **Rate**. Note that the spreadsheet calculates the total cost for you.

Step 5: Enter material quantities and costs

Now review the scenario for any materials you need to purchase (e.g., trucks, boxes):

- For materials priced per unit, enter the amount needed under **Units**. Then record the cost per unit under **\$/Unit**.
- For fixed-cost materials, record the price under **Fixed Cost**.

Completed Exemplar

To use the template for this course item, click the link below and select “Use Template.”

Link to exemplar: [Project budget](#)

Assessment of Exemplar

Compare the exemplar to your completed budget. Review your work using each of the criteria in the exemplar. What did you do well? Where can you improve? Use your answers to these questions to guide you as you continue to progress through the course.

Let's review each section of the budget:

- The exemplar includes all three milestones and the seven associated tasks.
- Each task includes the relevant information from the scenario (employee details, cost of labor or materials, or a fixed fee).
- The completed spreadsheet breaks down the budget by milestone. The total budget, including a \$3,600 buffer, comes to \$62,000.

Test your knowledge: Creating a project budget

1. As a project manager setting a budget, you factor in unexpected costs that may arise during the project. What budgeting strategy does this refer to?

- Leveraging experts
 Bottom-up approach
 Adding a buffer and reserves
 Setting a baseline



Correct

When budgeting for a project, you'll want to leave room for costs that exceed estimations.

2. As a project manager, what three things should you do to control costs and reduce changes to the budget? Select all that apply.

- Manage changes as they're made.



Correct

You should update forecasts as cost changes occur because you don't want budget changes to surprise you. You should also get stakeholder sign-off on any changes and ensure changes are within scope.

- Establish a sign-off plan and inform stakeholders of any expense changes that occur.

 **Correct**

You should get appropriate stakeholders to agree to any additional costs before they are incurred. You should also manage changes as they are made and ensure the changes are within scope.

- Request stakeholder approval on additional costs only *after* they are incurred

- Ensure budget changes are within scope.

 **Correct**

You should ensure that any additional costs or changes to the budget are within the project boundaries.

You should also get stakeholder sign-off on any changes and manage changes as they are made.

3. As a project manager, what does going under budget on a project indicate about your approach to budget management? Select all that apply.

- That you could have spent more on the project to provide extra resources

 **Correct**

Going under budget indicates that you could have spent more money on the project. For example, you could have possibly had extra resources or better quality output. It may also mean that you did not do a good job at initially estimating and that your budget for future projects could be slashed.

- That you accurately estimated the total cost of ownership (TCO)

- That you effectively conserved funds and will likely receive larger budgets for future projects

- That your initial estimates were inaccurate

 **Correct**

Going under budget indicates that you may not have done a good job at initially estimating and that you could have spent more money on the project. It also could result in your budget for future projects being reduced.

4. What budgeting challenge arises when changes or growth cause additional work the project manager hadn't planned for?

- Inaccurately accounting for total costs

- Budget pre-allocation

- Scope creep

- Inaccurate budget baseline

 **Correct**

Scope creep is when changes, growth, and other factors affect the project's scope at any point after the project begins. Scope creep causes additional work that wasn't planned for, so it can impact your budget.

3.2.6 Introduction to budgeting terms

Cash flow

Cash flow is the inflow and outflow of cash on your project. As a project manager, this is important to understand because you need **funding** (cash into your project) to keep your project running.

Cash that comes into your project allows you to maintain and compensate resources and pay invoices for materials or outside services. In some cases, a project may start out with all of the cash it will receive until the end. If this is the case, it is important to monitor your outflow to ensure that you have enough funding to complete the project.

Monitoring cash flow allows you to have a reference point for your project's health. For example, if the cash flow coming into your project is lower than your outflow, you will need to adjust your budget. Planning and tracking the cash flow for your project is a key component of budget management.

CAPEX and OPEX

Organizations have a number of different types of expenses, from the wages they pay their employees to the cost of materials for their products. These expenses can be organized into different categories. Two of the most common are **CAPEX (capital expenses)** and **OPEX (operating expenses)**.

- CAPEX (capital expenses) are an organization's major, long-term, upfront expenses, such as buildings, equipment, and vehicles. They are generally for assets that the company will own and keep. The company incurs these expenses because they believe they will create a benefit for the company in the future.
- OPEX (operating expenses) are the short-term expenses that are required for the day-to-day tasks involved in running the company, such as wages, rent, and utilities. They are often recurring.

You may need to account for both OPEX and CAPEX on your projects. For example, a major software acquisition as part of an IT project could be treated by your organization as a capital expense. The monthly wages paid to a contractor to help deploy the software would be an operating expense. It's a good idea to talk to your finance or accounting department when you start working on your project budget to see how they determine the difference between OPEX and CAPEX. This will guide you in properly allocating capital and operating expenses for your projects.

Contingency reserves

Sometimes, a project hits a snag and incurs additional expenses. One way to prepare for unplanned costs is by using **contingency reserves**. Contingency reserves are funds added to the estimated project cost to cover identified risks. These are also referred to as **buffers**.

To determine the amount of your contingency reserves, you will need to go through the risk management process and identify the risks that are most likely to occur. We will go into more

detail on risk management later in the course, but it is important to understand that risks to your project can have an impact on your budget.

Contingency reserves can also be used to cover areas where actual costs turn out to be higher than estimated costs. For example, you may estimate a certain amount for labor costs, but if a contracted worker on your team gets a raise, then the actual costs will be higher than you estimated.

Management reserves

While contingency reserves are used to cover the costs of identified risks, **management reserves** are used to cover the costs of unidentified risks. For example, if you were managing a construction project and a meteor hit your machinery, you could use management reserves to cover the costs of the damage.

Contingency reserves are an estimated amount, whereas management reserves are generally a percentage of the total cost of the project. To determine a project's management reserves, you can estimate a percentage of the budget to set aside. This estimate is typically between 5–10%, but the amount is based on the complexity of the project. A project with a more complex scope may require higher management reserves. Note that the project manager will generally need approval from the project sponsor in order to use management reserves.

3.3 Introduction To Procurement

3.3.1 Understanding procurement

Procurement means **obtaining all of the materials, services, and supplies required to complete the project**. You'll need to **procure vendors** as well. **Vendors** are **individuals or businesses who provide essential goods and services**. Therefore, think of vendor management as procurement for individuals or businesses.

Vendor management covers the activities included in **researching and sourcing vendors**. Instead of materials, vendor management is often a **matter of sourcing for a specific service or talent** and then **managing that relationship**. **Sourcing talent includes researching and obtaining estimated costs** from different partner companies you may use on a project. You'll typically **use vendors when they provide specialized skills** that aren't available within your company. Vendor management entails:

- sourcing vendors
- getting quotes for their work
- deciphering which vendors will best fulfill your needs
- negotiating their contracts
- setting deadlines for them
- evaluating performance
- ensuring payments are made

Keep in mind that **not every project will require vendors or contractors**, and so every project won't require vendor management. Let's revisit the example of contract workers in

the context of Project Plant Pals at Office Green. Like many companies, Office Green doesn't have a copywriting department, so for the launch of Project Plant Pals, you'll need to use external resources to supply a contracted copywriter. This person is a necessary team member on the project because Office Green doesn't have copywriters or internal employee resources required to finish this task. This contractor or team of contractors will draft copy for the website for a slated amount of time, and then their work on this particular project will be complete.

3.3.2 The procurement process

There are typically **five steps** that make up the procurement process.

- **Initiating**, which is the **planning process of defining what help you may need outside of your current resources** to hit the project goals. In this step, you will also **make a case for getting extra resources via the procurement process**.
- **Selecting**, which entails **deciding what supplies you need and which vendors you'll go through**.
- **Contract writing**, which is **where the contracts are developed, reviewed, and signed**.
- **Control**, which is **when you make payments, set up logistics and requirements to maintain quality**, and ensure the **service agreement is being met**.
- **Completing**, which is where you **measure the success of the procurement**.

One thing to note is the **procurement process can seem a little different depending on the project management methodology**. There are differences in procurement in the context of Agile versus traditional.

Agile procurement management:

- **More collaborative**, with both the project team and the end supplier than traditional approaches.
- There is a **heavy emphasis on the relationship** between these parties.
- The whole **project team plays a larger role** in identifying what needs to be procured.
- Rather than featuring contracts that are based on fixed deliverables, Agile procurement management tends to have a **living contract** that **can be adapted based on the evaluation** of the project.

If you think of the word "agility," which means to move easily and quickly, you'll be able to remember that **Agile procurement can change more easily** than traditional procurement methods. In this process, the team reviews the project or deliverables on a reoccurring basis and consistently addresses feedback. This way of working is important to communicate to your suppliers so they understand this style of working and agree to maintain flexibility. Again, it is so important to have a positive relationship with the procurement supplier. This is critical since the contract may need to be renegotiated at multiple points during the project.

On the other hand, **traditional procurement management**:

- Tends to **focus on standard contracts with clear terms and deliverables**.

- The project manager may be responsible for end-to-end procurement instead of the entire team providing input.
- The contracts may feature lengthy and extensive documentation that includes fixed requirements and comprehensive detail of the services and deliverables.

While this may appear more rigid, the benefit is you've outlined clearer workstreams and deadlines. This way, you're much more protected from unforeseen circumstances and may not have to pay for unpredictable changes. In traditional approaches, the negotiation process can be a little bit trickier. You won't necessarily have the room to renegotiate contracts if something changes, so you may have to start the whole process over again. That's why being as detailed as possible and spending more time in the negotiation phase is incredibly important in a more traditional project management approach.

3.3.3 Tips for the procurement process

As you have learned, **procurement** means obtaining all of the materials, services, and supplies required to complete the project. You have just learned about the procurement process in project management. To recap, there are five steps in the typical procurement process:

1. **Initiating:** planning what you need to meet your project goals
2. **Selecting:** deciding which suppliers and vendors to use
3. **Contract writing:** developing, reviewing, and signing contracts
4. **Controlling:** making payments and maintaining and ensuring quality
5. **Completing:** measuring your success



During each step of the procurement process, there are some tips that can help you save time and money while ensuring your project's success.

Tips for initiating

While planning your project, figure out which materials, resources, and supplies you will need to get the job done. During this step, you will decide which items will be internally procured and which items will be externally outsourced. Once you've decided which items you need to outsource, compare each of those items specifications, components, quality measurements, standards, and characteristics with your project's requirements. You may find that some of the items have features you don't need. If you can identify those unnecessary features, you will know exactly what you want and don't want in an item, possibly reducing your total cost.

Tips for selecting

Now that you have outlined what you need for your project, you need to determine vendors to source these items. Research and assess various vendors and suppliers, and try to find out if your preferred vendors have a reputation for delivering quality work on time. After you've identified your preferred vendors and suppliers, interview them to learn more about their products and services. If possible, make site visits to see exactly how each vendor runs their business in person.

Tips for contract writing

Contract writing requires excellent attention to detail, so pay close attention to the inclusions and exclusions in the vendor's offer. There may be some items included in the vendor's price that you can provide in-house at low or no additional cost. For example, the vendor's offer may include charges for storing materials, using certain equipment, or labor. These are all things that you may be able to provide from your organization's resources, so you can opt to save costs with the vendor on those items by using in-house materials and resources.

Sometimes, the vendor may write the contract. In this case, checking carefully for clarity and accuracy ensures that you know exactly what you are getting from the vendor. Whether the contract is written by you or by the vendor, you will almost always want to consult with a legal and compliance team to ensure that everything in the contract is ethical and legal.

Tips for controlling

The procurement process isn't over when the contracts are signed. The next step is to ensure that the work is being done according to the terms of the contract. You will need to periodically review the performance and quality of each vendor. When communicating with vendors, remain professional but firm to ensure that all project requirements are being fulfilled and that all major milestones are being met on time and at cost.

Building and maintaining a good relationship with your vendors benefits the team and the overall project. This relationship will make it easier to make adjustments and contract revisions if the need arises. Taking certain measures, like conducting regular check-in meetings, will ensure that the work is being completed according to plan.

Tips for completing

In the completing step of the procurement process, you will measure the success of your procurements. Ask yourself:

- Were the materials created good quality?
- Were there any issues with labor contracts?
- How were your relationships with vendors?

During this step, it is also important to document any lessons learned. It is likely that you will be involved in another project similar to this one in the future. Take notes about how the procurement process went so you can use this information on a future project.

Key takeaways

Procurement is an ongoing process that can be repeated during the life cycle of a project. You may initiate the procurement process several times over if you need additional deliverables. To do so, you will likely evaluate your current vendors—or select new ones if necessary. If you change vendors or contract terms, you will have to write new contracts. It is important to periodically review the quality of each vendor during the controlling phase and, once everything is finished, document the lessons you learned during the completion phase.

3.3.4 Common procurement documentation

There are a few **important documents** that help a project manager **navigate through each phase of procurement**. For instance, in the **initiating phase**, a project manager will create a **nondisclosure agreement**, otherwise known as an NDA. In the **Selecting phase**, a project manager creates a **request for proposal**, or an RFP. In the **Contracting phase**, a **statement of work** or an SOW is created.

Nondisclosure Agreement

NDA is a standard within a lot of companies, and it's best practice to **ask external contract workers to sign an NDA**. The purpose of an NDA is to **keep confidential information within the organization**. So for instance, if a company is using some kind of proprietary technology on a project or preparing for a sensitive product launch, they want to ensure that any conversations or information surrounding that technology doesn't leak out to competitors or to the public before the company is ready to launch. For example, in Project Plant Pals, vendors might be required to sign an NDA because the project is new to market and hasn't been made public yet.

Request For Proposal

RFP is a document that **outlines the details and requirements** of an organization's project to be passed on to vendors. RFPs are used to **solicit bids from vendors** so that you can then **select which vendor might be the best** for your project.

After the RFP is sent out, various vendors will review it, and if they feel they can fulfill your project's needs, they'll provide a proposal. For example, you may create an RFP for Project Plant Pals to source plant providers. In this case, you want to **send out RFPs to all possible plant providers** to ensure that you're **getting the best price, quality, and overall value**.

It's important to note that both the **NDA** and the **RFP** are **fixed** and **remain the same** throughout the process. This means that there's not a lot of room for customization, and it **won't be changed once it's submitted**.



Request for Proposal Template

RFP [Project Name]	RFP Due Date [Date]	Company Name Office Green							
Project Overview [Insert Project Overview] <ul style="list-style-type: none"> • What's the purpose of this project? • What problems will it solve? • What new doors will it open for the company? 									
Goals [Insert Goals] What are some measurable results you can aim to achieve throughout the process? <ul style="list-style-type: none"> • Goal 1 • Goal 2 • Goal 3 									
Scope of Work [Describe Scope of Work in Greater Detail] What are the specifics of the project? How are you going to achieve these goals and make sure the project launches successfully?									
Milestones <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 16.6%;">Milestone A [Name]</th> <th style="width: 16.6%;">[Name] [Insert Details]</th> <th style="width: 16.6%;">Milestone B [Name]</th> <th style="width: 16.6%;">[Name] [Insert Details]</th> <th style="width: 16.6%;">Milestone C [Name]</th> <th style="width: 16.6%;">[Name] [Insert Details]</th> <th style="width: 16.6%;">Implementation</th> </tr> </table>			Milestone A [Name]	[Name] [Insert Details]	Milestone B [Name]	[Name] [Insert Details]	Milestone C [Name]	[Name] [Insert Details]	Implementation
Milestone A [Name]	[Name] [Insert Details]	Milestone B [Name]	[Name] [Insert Details]	Milestone C [Name]	[Name] [Insert Details]	Implementation			
Submission Requirements <ul style="list-style-type: none"> • Requirement #1 • Requirement #2 • Requirement #3 		Questions Vendors Must Answer To Be Considered <p>This helps you properly assess potential vendors.</p> <ul style="list-style-type: none"> i. [INSERT QUESTION #1] ii. [INSERT QUESTION #2] iii. [INSERT QUESTION #3] 							

Statement Of Work

An SOW is **sent after the vendor is selected and evolves as the project goes on**.

3.3.5 Creating a Statement of Work

After you've sent a request for proposal to clients and you've selected the vendor, client, or contractor you want to work with, you will also send them an SoW or Statement of Work. A **statement of work** is a document that **clearly lays out the products and services a vendor or contractor will provide** for the organization. An SoW also **provides a description of the contractor's needs and requirements** to properly perform the agreed-upon services.

Although the SoW covers the customer's needs, it's equally as important to **include the organization's needs and the vendor's needs** too. It's critical that **all parties involved understand what is expected from each of them** in order to deliver the best possible

products or services. The project manager is tasked with developing the SoW but often **asks for input from subject matter experts** or SMEs for **technical expertise** that the project manager may not have. Your organization's **legal advisors will review this document** with you and may even be crafting it alongside you.

Let's discuss how to **create an SoW in the example of Project Plant Pals**.

- You'll want to start by including page headers with your **company name, project, and creation date** on them. At the top of the page, make sure to **include important stakeholders** like yourself as the **project manager** and the name of the **sponsor**, which in this case is the Director of Product.
- Next, you'll construct a **table for revisions**. The SoW will likely go through a few rounds of revisions because several stakeholders may review it and suggest changes. You'll detail those changes in this box here.
- Next, you'll create a **purpose section** where you will go into detail about exactly what the desired outcomes are. Make sure to include a section regarding your **target audience** and make sure it's inclusive of everyone. If you have more specific goals, you can list them here too.
- Next is the **scope section**, where you will include what the service entails. You will also want to mention what's out-of-scope, or in other words, what the project doesn't include. This will eliminate any potential room for confusion and help set expectations with the vendor. This helps draw clear lines and sets the right expectations with the vendor.
- For **deliverables**, you'll want a concise statement about what your project will deliver.
- Since **milestones** are such an integral part of tracking progress, budget, and scope, they'll need to be included here too.
- You'll want to make it really clear on **how many hours** are needed for the completion of this project here, and you will want to designate a **particular date** that you need their services performed by here.
- At the bottom, you'll typically add **terms and conditions** and any **other disclaimers**. It's good to have a disclaimer stating that revisions may take place as the project goes on. This is important to include just in case the scope changes because of unforeseen issues. It's a good idea to **add revisions into the disclaimer** because as project manager, it's best not to over-promise and under-deliver. You always want to be clear that you intend to stick to the schedule unless circumstances outside of your control intervene.
- Another part of your SoW is **payment terms**. This outlines when your suppliers need to be paid. Ensuring that supplies are paid on time will promote strong relationships. Generally, good procurement practice would be to pay your vendors and contractors upon delivery of goods and service, not before, unless a circumstantial agreement has been made. For instance, if Office Green's plant provider requested to be paid when each milestone was completed instead of after the entire project is finished.



Project Plant Pals

Date

Project Manager: **Your Name**

Sponsor: Name, Director of Product at Office Green

Revision History:

Revision date	Revised by	Approved by	Description of change
10/20/20	PM	Sponsor Name	[input change here]

Purpose: To launch a new service that provides desk plants to offices and commercial businesses.

Product Target Audience: Our target audience is anyone working in offices in XYZ cities.

Scope / Major Project Activities:

- The service includes providing customers with small, low maintenance plants that they can place on their desks.
- Customers can order plants online or from a print catalog.
- Office Green will ship the plants to the customer's work address.
- The types of plants include six inch leafy ferns, small cacti, and five inch bonsai trees.
- Major Activities include:
 - Storing the plants in a warehouse
 - Maintaining the health of the plants by providing them with water and light;

This project does not include:

- Annual reporting or custom plant orders that are not mentioned in the scope.

Deliverables:

- Along with the actual plants, Office Green's plant provider will provide maintenance guides on how to take care of the plants.
- Web vendor team will provide a support page on the website to address Frequently Addressed Questions

Schedule Overview / Major Milestones:

- Milestone 1: Fulfill the first quarter of plant orders.
- Milestone 2: Deliver to all of the top customers.
- Milestone 3: Launch customer satisfaction surveys.
- Milestone 4: Report on any insights from customer feedback.

*Estimated hours for completion: 250

*Estimated date for completion: 12/01/2020

*Estimates assume all necessary resources are provided & the scope of the project does not change. Revisions will be made in the event of lack of resources and / or scope changes and / or unforeseen anomalies in the pricing library that require a more granular dive.

Payment Terms: vendors paid upon completion and delivery of goods and services.

Test your knowledge: Introduction to procurement

1. As a project manager, you're interested in working with vendors in a way that is collaborative and places an emphasis on relationships. What procurement management process should you choose?

- Agile
- Flexible
- Traditional
- Historical

 **Correct**

Agile procurement management is more collaborative with both the project team and the end supplier than traditional approaches. There is a heavy emphasis on the relationship between these parties.

2. As a project manager, you host weekly meetings to periodically review vendor performance and work quality. Which procurement process step does this represent?

- Controlling
- Initiating
- Selecting
- Completing

 **Correct**

During this step, you will periodically check on vendor work to ensure it meets the terms of the contract.

3. As a project manager selecting a vendor, you first need to outline the details and requirements of your project in order to solicit bids. Which procurement document helps with this task?

- A Statement of Work (SOW)
- A request for proposal (RFP)
- A work breakdown structure (WBS)
- A non-disclosure agreement (NDA)



Correct
An RFP is a document you use to solicit bids from vendors. Once you receive several bids, you can choose the best vendor for your project.

4. As a project manager creating a statement of work (SOW), who do you ask for input and technical knowledge?

- Subject matter expert (SME)
- Key stakeholders
- Project sponsor
- Vendors



Correct
An SME is someone at your organization who has necessary experience and technical expertise that applies to the project.

3.3.6 Activity: Complete a Statement of Work

Activity Overview

In this activity, you will apply what you have learned about procurement value to complete a Statement of Work (SoW). An SoW is a document that lays out the products and services a vendor or contractor will provide for the organization. It also describes what the contractor needs to perform the agreed-upon services. Be sure to complete this activity before moving on. The next course item will provide you with a completed exemplar to compare to your own work. You will not be able to access the exemplar until you have completed this activity.

Scenario

Review the scenario below. Then follow the step-by-step instructions.

As part of the Plant Pals Operations and Training plan, you selected a vendor to install supply chain management software and equipment. In order to ensure the vendor can successfully set up the proper systems, you need to prepare a Statement of Work (SoW).

For this engagement, the SoW should contain the following elements:

- The vendor will configure inventory and fulfillment tracking software for the Office Green team. This includes auditing existing Office Green software and developing optimizations.

- The vendor will also install the new software on *all* Office Green devices and equipment (laptops, mobile devices, and hard drives).
- The vendor will install fulfillment equipment in Office Green's warehouses.
- The vendor will create training manuals and a maintenance guide for the software and equipment.
- The vendor will meet with the Training Manager and the HR Specialist to explain the training manuals and answer questions.
- The vendor should complete all tasks within two weeks (10 business days).
- The vendor is not responsible for training other employees or ongoing maintenance.
- Office Green will pay the vendor once they have completed all of the work.

Step-By-Step Instructions

Step 1: Access the template

To use the exemplar for this course item, click the link below and select “Use Template.”

Note: This template is an example intended to be used only for this exercise. It should not be relied on as a legal document.

Link to template: [Statement of Work \(SoW\)](#).

Step 2: Title the document

First, write the project name in the page header and under the Office Green logo.

Step 3: Add important stakeholders

Record important stakeholders for the project under the project name. In this case, that includes the project lead (that's you, the project manager) and the project sponsor (the Director of Product).

Note: You won't fill in the **Revision History** until you've drafted the SoW and shared it with stakeholders. This is where you will log changes to the SoW, so don't forget to include it.

Step 4: State the purpose

In the **Purpose** section, write a sentence or two explaining the desired outcomes for the SoW. Try to be as specific as possible about your goals for working with the vendor and how they relate to the larger aims of the Plant Pals project.

Step 5: Define the scope

Next, define the project scope. Enter the major activities the vendor will complete into the **Scope** section.

Step 6: Define out-of-scope activities

Record activities that are beyond the contract's scope in the **Out-of-scope activities** section. Defining what's out-of-scope sets expectations and minimizes potential confusion.

Step 7: Define deliverables

Describe the tangible and intangible outcomes of the vendor's work in the **Deliverables** section. Make sure to be specific and consider the overall goals of the Plant Pals project.

Step 8: Add milestones

Consider the scenario carefully and break down the vendor's work into at least three milestones. The milestones should define the major benchmarks the vendor must reach to complete the work. They are essential to tracking progress and should align with the in-scope activities. Write them in the **Milestones** section of the SoW.

Step 9: Estimate time to completion

Use the scenario above to estimate the approximate number of hours the work should take. Assume eight-hour work days and five-day work weeks.

For example, an assignment that lasts for 20 business days should take 160 hours to complete. Enter the number in the **Estimated hours for completion** section.

Step 10: Identify a due date

Select a date by which the vendor must complete all of the work. Calculate this date using the start date listed in the SoW header (April 12).

Step 11: Set payment terms

It's important for all parties to agree when the vendor will be paid for their work. Record the terms from the scenario in the **Payment Terms** section.

Completed Exemplar

To use the exemplar for this course item, click the link below and select "Use Template."

Note: This SOW is an example intended to be used only for this exercise. It should not be relied on as a legal document.

Link to exemplar: [Statement of Work \(SoW\)](#)

Assessment of Exemplar

Compare the exemplar to your completed SOW. Review your work using each of the criteria in the exemplar. What did you do well? Where can you improve? Use your answers to these questions to guide you as you continue to progress through the course.

Let's review the completed SoW:

- There is a clear and concise purpose statement for the internal stakeholders and the vendor to review.
- The list of in-scope items is clear and specific.

- The list of out-of-scope items sets expectations up front, acting as a single source of truth for the project's boundaries. So, for example, if Office Green wanted the vendor to continue training employees beyond the contract, they would need to submit a change request.
- The deliverables are clear and specific.
- The major milestones serve as checkpoints for the project's progress. The milestones represent the agreed-upon deliverables that the vendor must meet to receive payment.
- The estimated hours to completion match the duration of the contract.
- The estimated completion date is ten business days from the contract start date.
- The payment terms are laid out clearly.

3.4 Navigating Procurement Challenges

3.4.1 Obtaining procurement support

The procurement process doesn't end after you've selected vendors and signed contracts. You'll use **performance trackers and meetings** like quarterly business reviews to **track and evaluate overall performance to ensure that both parties are living up to their initial agreement**, and when there are contracts and paperwork with terminology that you may not be familiar with, you will enlist the **help of a legal team**.

Depending on the **company size**, the **legal situation may vary**. Some companies (usually **well-established and larger businesses**) will **have a legal team**. Some businesses may **outsource their legal team**. Some **startups or smaller companies** may **not have a legal team**, but they might **reach out to legal advisors as needed**. Again, this all depends on the company where you work.

Laws surrounding manufacturing products and consumerism will vary from country to country. But there will nearly always be laws in place that you'll need to follow around topics like **fair and ethical trade**. Most companies have a mission or value statement. Sometimes, a team of people in the ethics and compliance departments are tasked with ensuring that the day to day operations are adhering to their value statement and governmental policies. These team members will also be tasked with duties like working to prevent discrimination and making sure that the company is practicing adequate corporate social responsibility. Also, as a project manager, you need to ensure that the various stakeholders who are representing the business are adhering to these policies and processes too. You'll all need to be aware of any pertinent meetings regarding legal or compliance issues, and you as a project manager will have to remind the team about when those meetings are being held. Looping in the appropriate stakeholders is especially critical if there's some kind of necessary approval since it'll have an impact on the project one way or another.

Like most projects for Project Plant Pals, looping in legal and compliance for review and approvals is really important. For instance, let's say some of the offices where you're delivering plants are pet-friendly. In your contract with the supplier, you've specified that you want to offer non-toxic plants only. Unfortunately, the supplier provided a plant with leaves that are harmful to animals. Office Green could potentially be liable and in legal trouble because this critical detail was missed. Pretty crucial consideration, right? So, regardless of

your future company's legal team or advisory, having **contracts reviewed** in some capacity **makes good business sense** and should be a **priority** for you as a project manager.

3.4.2 Ethics in the procurement process

There's a lot that can be done to ensure that businesses are operating in an ethical way. Project managers have a big job when deciphering whether or not every aspect of their project is sourced ethically. It helps if the **project manager thoroughly oversees the project to make sure the safety, economic, and environmental ethical risks are mitigated**; in other words, doing a lot of research. Monitoring and evaluating throughout the project is a project manager's job.

There are a couple of steps to **safeguard ethical procurement**. The first is knowing your business' **legal requirements**. You'll want to have a **deep understanding of what is required** of you legally as a project manager for your business. You can also **seek out the code of ethics for your profession**, which in this case is for project managers. For instance, the Project Management Institute, also known as PMI, has a code of ethics that you can access as a member or credential holder. This will help you understand some parameters for how to assess ethical versus unethical procurement.

According to the **PMI's Code of Ethics**, **honesty, responsibility, respect, and fairness** are **the values that drive ethical conduct** for the project management profession. When you become a project manager, if you aren't totally sure if something is ethical, first **try to use your best judgment based on what you believe** those words mean, and **continue to do the required research**. If you still aren't sure, don't hesitate to **ask a subject matter expert**, such as someone from the legal team.

As a starting point, **some unethical issues or risks** you may run into may include **bribery** or **corruption**. Some regulations in other countries may not be the same as regulations in your country. For example, you'll want to make sure laborers involved in production are treated fairly, working in good conditions, and are compensated adequately for their work.

It is a good idea to consult your legal team to ensure that you don't run into these situations and to be aware of the regulations surrounding your processes. You will also want to be aware of possible issues with **sole-supplier sourcing**. In some scenarios, you may need to perform non-competitive procurement, which is when a company restricts the bidding process to one supplier. This may be common for companies who are more cautious about exposing trade secrets. But regardless of your reasoning, you will need to be able to justify exactly why you are choosing to restrict bidding to one supplier. There's also interaction with state-owned entities. You'll want to be vigilant when dealing with government agencies and officials. Government agencies may have tighter restrictions and regulations in regard to sourcing, and you don't want to do anything unethical without even knowing it.

A project manager monitors the project's ethics throughout the whole process. In the initiating phase, you'll need to decide whether the project is ethical in the first place. Does it meet your business' Code of Ethics? Does the project meet environmental ethics laid out by governmental agencies? Is the labor going to be ethically sourced? You'll need to review government regulations and policies, assess potential risks, and put together a diverse team that you trust to be ethical.

Before the contracts are signed, you'll want to figure out whether the suppliers you're thinking of hiring are ethical. You'll want to make sure that you're procuring them in an ethical way and are paying them a fair rate. You'll also want to completely understand the supply chain if there is one. After the contracts have been signed by your contractors, make sure to carry out your assurance duties. This may include things like auditing each task and cost, executing quality control, or even approving invoices.

During the production of your service or product, focus on the day-to-day relationships with vendors to make sure they're aware of and meeting your deliverables and keeping you informed of any potential road blocks. After you've done all the research that you possibly can on whether your project is ethical, remember to trust yourself. If something feels wrong, it probably is.

As you know, there's a lot to keep track of as a project manager. By keeping these ethical principles in mind as you begin your project, you will save yourself and the company from a lot of headaches later on. Of course, you can usually go to your legal team or key stakeholders if you ever have a question or need a second opinion.

Test your knowledge: Navigating procurement challenges

1. As a project manager, you are about to hire a new vendor; however, there are terms in the contract you are unfamiliar with. Who should you contact to better understand the contract?

- Another project manager
- A member of the legal team
- Vendor consultant
- A subject matter expert (SME)

 **Correct**

Depending on the size of the company you're working for, there may be an in-house legal team, an outsourced legal team, or other legal advisors.

2. Which of the following should a project manager do to ensure an ethical procurement?

- Speak to the press if they inquire about product sourcing methods.
- Work with government officials as long as they seem trustworthy.
- Make sure that various stakeholders adhere to governmental policies and adequate corporate social responsibility.
- Alter vendor contracts based upon what you believe is most ethical for the company.

 **Correct**

You'll want to involve the appropriate stakeholders if you need their decision on a tricky ethical decision. You should also know your company's business requirements, seek out the code of ethics for your profession, and if necessary, consult with an SME.

3. What are some potential ethical risks project managers need to be aware of? Select all that apply.

Bribery or corruption

 **Correct**

One form of corruption is when a vendor seeks to reduce the competition for a contract during the bid through bribery or other means. Sole-supplier sourcing and inappropriate interaction with state-owned entities are some other ethical traps to avoid.

Interaction with state owned entities

 **Correct**

Any relationship with a government that is based upon inappropriate relationships that limit competition is unethical. Project managers should also be careful to avoid ethical traps like bribery, corruption, or sole-supplier sourcing.

Sole-supplier sourcing

 **Correct**

Sole-sourcing keeps outside vendors from bidding on a project. Project managers should also be aware of the risks of bribery or corruption and inappropriate interaction with state-owned entities.

Fraudulent checks

4. Once you sign a contract with a vendor, you audit each task, execute quality control, and approve invoices. These are examples of what project manager duty?

Assurance

Trust-building

Relationship building

Mentoring

 **Correct**

As a project manager, you'll want to frequently review the work delivered by your vendors.

3.4.3 Avoiding ethical traps in procurement

Now that you have learned about the importance of ethics when conducting procurements, let's talk about some potential ethical traps you might face and how to navigate them.

Understanding ethical traps

An **ethical trap** is an ethical dilemma that causes us to make a certain decision without regard for our ethical principles. You may face ethical traps throughout the course of a project. However, ethics can be of particular concern when it comes to procurement. As you have learned, project managers must take precautions to ensure that they and their suppliers are following ethical principles during the procurement process.

Common ethical traps

Sometimes, potential ethical issues can be overlooked or can be considered the necessary cost of doing business. This is a dangerous line of thinking since these types of assumptions can put your project, company, and career at risk. To review what we discussed in the video, a few of the most common ethical traps that exist when conducting procurements are corruption and bribery, sole-supplier sourcing, and interactions with state-owned agencies.

Corruption and bribery

You may be confronted with different types of corruption when going through the procurement process. One form of corruption is when a vendor seeks to reduce the competition for a contract during the bidding process. A company may attempt to bribe members within the organization to sway their decision into a favorable outcome for the vendor. Bribes may include things like money, gifts, tickets to events, and more. Another type of corruption scheme is to offer a certain percentage of an awarded contract—also known as a *kickback*—to an official who can ensure that their company wins the bid.

Sole-supplier sourcing

In some situations, having a vendor who a company is already familiar with smooths the procurement process and works well for both parties. Ethical issues arise when other vendors aren't even allowed to bid for contracts for which they are similarly qualified. With **sole-supplier sourcing**, vendors may reach out to buyers before a bid is even requested. When the buyer's organization decides to work with that vendor based on their previously-established relationship, that limits competition before the bidding has even begun. When this happens, companies and the public miss out on the advantages of competition, such as reasonable pricing, product quality standards, or speedy delivery options.

Interactions with state-owned entities

There are some instances in which government agencies require an organization to adhere to stricter ethical standards than they might have otherwise. Governmental agencies such as the Food and Drug Administration and The Occupational Safety and Health Administration, for example, keep businesses within legal and ethical standards. If you are unfamiliar with any governmental restrictions that may affect your industry, organization, or project, you could unintentionally fall into an ethical trap.

Avoiding ethical traps

Here are some guidelines that will help you avoid falling into ethical traps when it comes to procurement:

Understand the legal requirements for your procurements

Every country has regulations to adhere to when conducting business in that country. Be sure to research the legal and ethical requirements based on your project and procurement

needs, and if your organization has a legal team, make sure to lean on them for support and advice.

Stick to your ethical codes

Honesty, responsibility, respect, and fairness are the values that underpin ethical behavior in the project management profession. The Project Management Institute's (PMI) [code of ethics](#) provides detailed guidelines to help ensure you maintain ethical conduct in your projects.

Test your ethics

When you face an ethical dilemma, ask yourself questions in each of the following categories:

- **Shame:** Would you be ashamed if someone knew what you did?
- **Community:** Would you want your friends to know the decision you made?
- **Legal:** Would you face legal action if you took this action?
- **Situation:** Would your actions be justified in this situation?
- **Consequence:** Would a negative outcome be worth your actions?

Key takeaway

Making a decision when facing an ethical dilemma can be challenging. But learning the legal requirements for your procurements, sticking to a professional code of ethics, and testing yourself on the ethics of your decision making can help you avoid ethical traps and conduct your procurements honestly, responsibly, and fairly

3.4.4 Reflection: Procurement ethics

As a project manager, you're sourcing a new vendor. The vendor is located in a country that has a history of corruption in your industry. You've had a great initial discussion with the vendor and you don't want to discriminate against it just because of the government's and other companies' history of unethical practices. In 2-3 sentences, describe the steps you should take to avoid any potential ethical traps.

Seek to understand the legal requirements of your procurements

For the vendor you're hiring, are you following its country's regulations? Confirm the regulations with your legal team or outside counsel.

Stick to your ethical codes

Consider the Project Management Institute's (PMI) code of ethics. Be responsible and respectful to your buyers, customers, and the public at large. Practice fairness and honesty.

Test your ethics

Ask yourself the following questions: Would you be ashamed if someone knew what you did? Would you want your friends to know the decision you made? Could you face legal

action? Would your action be justified depending on the situation? Would a negative outcome be worth your actions?

Weekly Challenge 3

1. Which costs are examples of resource cost rates? Select all that apply.

- The cost of a task buffer
- The cost of software to help manage a project

 **Correct**

- The cost of labor for a project team

 **Correct**

- The cost of materials when building a house

 **Correct**

2. Which of the following is an example of using historical data to develop your project budget?

- Reaching out to project managers who worked on past projects at the company
- Getting quotes from potential vendors
- Reviewing past projects that are similar to yours to get an idea of what your budget could entail
- Thinking about all the parts of your project from the beginning to the end and adding the costs together

 **Correct**

3. Is it effective project management for a project to be under budget?

- Yes, this is a sign of excellent project management.
- No, this is a sign of unsatisfactory project management.
- Maybe, but only if the stakeholders change the schedule.

 **Correct**

Please review [the video on maintaining a project budget](#).

4. As a project manager, you research and source for a specific service. You then have to manage that relationship. This is known as what type of procurement?

- Vendor management
- Budget management
- Performance management
- Cost management

 **Correct**

5. You are working with a vendor and ask them to sign an NDA. What does an NDA help to ensure?

- That the vendor and the team both understand the expected deliverables
- That multiple vendors are able to submit bids for the project
- That the amount of promised work is clear to all parties
- That confidential information is kept within the organization

 **Correct**

6. “Honesty, responsibility, respect, and fairness are the values...” begins what type of saying of the Project Management Institute that serves as a guide to how they do procurement and other business?

- Slogan
- Requirements
- Motto
- Code of ethics

 **Correct**

7. Fill in the blank: A project manager needs to alter their budget after making changes to the project schedule and costs. This is necessary in order to _____.

- re-baseline the budget to track project progress of costs
- baseline the budget to track project progress of reserves
- baseline the budget to track project progress of costs
- re-baseline the budget to track project progress of tasks

 **Correct**

8. At what phase in the procurement process would a project manager decide what supplies and which vendors will be used on the project?

- Investigating
- Selecting
- Controlling
- Assignment

 **Correct**

9. Which of the following factors can lead to scope creep and negatively affect the budget? Select all that apply.

- Agreements about the project that aren't officially documented

 **Correct**

- A vague Statement of Work (SoW)

 **Correct**

- Attainable timeframes and deadlines

- Last-minute asks from priority stakeholders

 **Correct**

10. A project manager writes a budget for an upcoming project. They break down the project by important points in the schedule like the completion of a phase. What are these important points known as?

- Milestones
- Progressions
- Dependencies
- Deliverables

 **Correct**

Week 4 : Managing Risks Effectively

Learning Objectives

- Communicate and resolve identified issues in a risk management plan.
- Identify types of risks and measure their impact on a project.
- Examine tools for identifying, assessing, and managing risks.
- Explain what risk management is and how it can help prevent project failure.

4.1 Understanding Risk Management

4.1.1 The importance of risk management

A **risk** is a **potential event** which **can occur and can impact your project**. When you think about risk in the context of project management, you will think about them as **hypothetical**. In other words, these **aren't events that will definitely happen**, but because there's a **possibility that they could happen**, it's your responsibility as the project manager to identify and plan for those risks.

An **issue** is a **known or real problem** that **can affect the ability to complete a task**. What's the **difference between a risk and an issue**? Think of it like this: a **risk is an event that could potentially happen**. If the **event actually happens**, then the **risk becomes an issue**. In other words, **risks are the big what-ifs** and **issues are things that currently impact** a project. It is clear that risks and issues can pose a threat to your project.

How you manage those risks is known as risk management. **Risk management** is the **process of identifying and evaluating potential risks and issues that could impact a project**. It's not a one-time exercise; it's something that you'll **need to do regularly to address potential risks**.

Risk management is a crucial part of the planning process by giving you an understanding of:

- what could go wrong with your project.
- who you need to consult about the risk.
- how the potential risk could be mitigated.

This way, if or when something goes wrong, you'll have a plan prepared and ready to go. Part of being proactive and planning ahead is **identifying potential risks and how to solve for them**. This way, you'll set up your project with better chances for success.

Failing to engage in meaningful risk management can have a few **big consequences** for your project.

- If you don't plan ahead, you may put your project at **risk of not meeting its project goal, its timelines, or success criteria**. For example, if your goal is to publish a

research report and your research analyst quits halfway through the project, you will likely miss the deadline if you don't have a backup plan ready to go.

- **Fail to think through the many different ways** that your project could pivot and still meet its goals. Even if an issue does arise, there often isn't just one way to meet your project goals and success can come in many forms. **Risk management helps you determine how flexible** or rigid your plan is and then **make necessary adjustments**. For example, if your project requires a large product shipment, having a backup supplier ready means you could quickly pivot if a main supply is unable to fulfill your order.
- Risks can **affect projects in a variety of ways that are difficult to foresee**. For example, a supplier you've hired may not have adequate stock to cover your purchasing needs, or the budget for your project could be cut unexpectedly.

The risk management process helps **reduce the impact of unexpected events**, freeing up resources to focus on activities that benefit the project. Let's imagine risk management in the context of Plant Pals at Office Green, which is a new service that will provide customers with small, low-maintenance desk plants. One **potential project risk** is the **possibility that the web page for the new service won't be live in time** for the launch. Another potential risk could be **a fulfillment shortage**.

What would you do if the plant supplier runs low on the cacti and ferns that you need? To **prepare for these potential risks**, you will need to think about ways to **mitigate these issues before they happen**, or how you **will address these issues if they actually occur**. Hopefully, these things won't be a problem, but if they are, you'll be prepared.

I also want to stress that **issues will come up throughout the project you did not or could not have planned for**, and that's okay. When these moments arise, it is important to keep calm, figure out the root cause of the problem, and come up with a solution. Risk management is a really important topic for project managers to understand. Identifying risks and issues prepares you for the unknown. It also positively impacts you as the project manager because you'll feel more prepared, less stressed, and more confident in your approach if an issue does occur.

Test your knowledge: Risk management

1. Define a risk as it relates to project management.

- A risk is a measurement that estimates the potential impact of events that could occur in the future.
- A risk is an event that might occur and could impact a project in the future.
- A risk is a measurement that estimates the impact of known problems.
- A risk is a known problem that has already impacted a project.



Correct

Risks are potential issues that may or may not occur. Project managers should prepare for them, just in case.

2. What is the difference between a risk and an issue in project management?

- A risk is a known problem; an issue is an event that might happen in the future
- Risks and issues are both events that might happen in the future, but they could affect projects to different degrees.
- An issue is a known problem; a risk is an event that might happen in the future
- Risks and issues are both known problems, but they affect projects to different degrees.

 **Correct**

Issues are problems that have already impacted a project, while risks are the potential problems that could impact it in the future.

3. Fill in the blank: Risk management is the process of _____.

- identifying and evaluating potential risks and issues that could impact a project
- identifying and avoiding projects that have a high potential for risk
- identifying and mitigating risks and issues that are already impacting a project
- identifying and initiating projects that have a low potential for risk

 **Correct**

Risk management can help project managers make sure that risks don't turn into known problems.

4. Which of the following are true of risk management? Select all that apply.

- It reveals what could go wrong with a project.

 **Correct**

Risk management can help project managers avoid delays by pinpointing potential issues. It can also help you identify who you'll need to consult about each risk and come up with a plan for how each potential risk could be mitigated.

- It helps determine how to mitigate potential risks.

 **Correct**

Risk management can be helpful in creating a backup plan if something goes wrong. It can also help you avoid delays by pinpointing potential issues and determine who you'll need to consult about each risk.

- It is a one-time exercise at the start of a project.

- It helps identify who a project manager should consult about a potential risk.

 **Correct**

Risk management can help improve communication between you and your stakeholders by informing them about potential risks before they become known issues. It also helps you avoid delays by pinpointing potential risks and determining how each potential risk could be mitigated.

4.1.2 Phases of risk management

In a previous video, you learned that **risk management** is the process of identifying and evaluating potential risks and issues that could impact your project. Risk management is an ongoing practice throughout the life cycle of your project. It typically involves some variation of these five steps:

1. **Identify the risk.** The first phase of the risk management process is to identify and define potential project risks with your team. After all, you can only manage risks if you know what they are.
2. **Analyze the risk.** After identifying the risks, determine their likelihood and potential impact to your project. Serious risks with a high probability of occurring pose the greatest threat.
3. **Evaluate the risk.** Next, use the results of your risk analysis to determine which risks to prioritize.
4. **Treat the risk.** During this phase, make a plan for how to treat and manage each risk. You might choose to ignore minor risks, but serious risks need detailed mitigation plans.
5. **Monitor and control the risk.** Finally, assign team members to monitor, track, and mitigate risks if the need arises.

4.1.3 Uncover opportunities using risk management

When you think about risks, it is likely that you automatically think of potential negative events. But when identifying risks, it is important to also consider the good things that could happen, which are considered **opportunities**. An opportunity is a potential positive outcome of a risk. It is important to recognize opportunities and to capitalize on them as they appear so you can reach your project goals faster, more cheaply, or with less effort. Some examples of opportunities include:

- Completing a milestone ahead of schedule
- Discounted materials
- Availability of additional resources (people, investments, equipment)

How to recognize an opportunity

An **opportunity** is a potential positive outcome that may bring additional value to a project. You can use the same tools and techniques that you use in risk management—identify, analyze, evaluate, treat, and control—to add potential opportunities to your risk management plan. You need to know what to do if things go wrong, but you should also make plans to seize opportunities. By using techniques such as brainstorming and drawing on project history or prior experience, you can identify potential opportunities and outline how you will take advantage of them if they occur.

As a project manager, you should always be on the lookout for potential opportunities when developing your risk management plan. Review the following article for further information on

using risk management strategies to identify and take advantage of opportunities that may occur during your projects: [Effective strategies for exploiting opportunities](#).

Test your knowledge: Risk scenarios

1. Which three of the following scenarios represent possible *opportunities* that could arise from a risk?

Adding two team members from another team to increase productivity and meet the project deadline

 **Correct**

Adding team members could risk the productivity of the team in the short term as they are onboarded, but long term the team should be able to complete more work.

Adopting a new spreadsheet software to streamline and simplify tasks in the future

 **Correct**

Learning a new software could be a risk if it initially slows down the team. However, if it benefits the team long term, it is likely an opportunity.

Completing a milestone ahead of schedule

 **Correct**

While completing tasks and milestones ahead of schedule could disrupt the timeline of the project, it may free up team members to work on additional tasks. This is a positive outcome of a risk.

Hiring a new supplier of an item required to complete a product shortly before the project closes

2. Which of the following scenarios is an example of a project issue? Select all that apply.

Materials increase in price

 **Correct**

Risks like market fluctuations can lead to project cost issues.

Team members complete tasks early

Clients do not return the necessary paperwork on time

 **Correct**

Submitting contracts to clients in the wrong format, for example, can lead to issues such as missed deadlines or legal concerns.

Workers at a supplier's production are currently in a labor strike

 **Correct**

A strike at a supplier is an issue that could mean a delay in receiving necessary project materials.

3. Fill in the blank: The risk management process includes five steps: identify, analyze, evaluate, _____, and monitor and control.

- accept
- mitigate
- treat
- classify



Correct

When a project manager treats a risk, they make plans for how to respond if the risk becomes an issue.

4. During which phase of the risk management life cycle do you use the information you have gained about the likelihood and potential impact of risks to *prioritize* risks?

- Evaluate the risk.
- Monitor and control the risk.
- Identify the risk.
- Treat the risk.
- Analyze the risk.



Correct

During this phase, you use the results of a risk analysis to determine which risks to prioritize.

4.2 Identifying And Assessing Risks

4.2.1 Tools to help identify risks

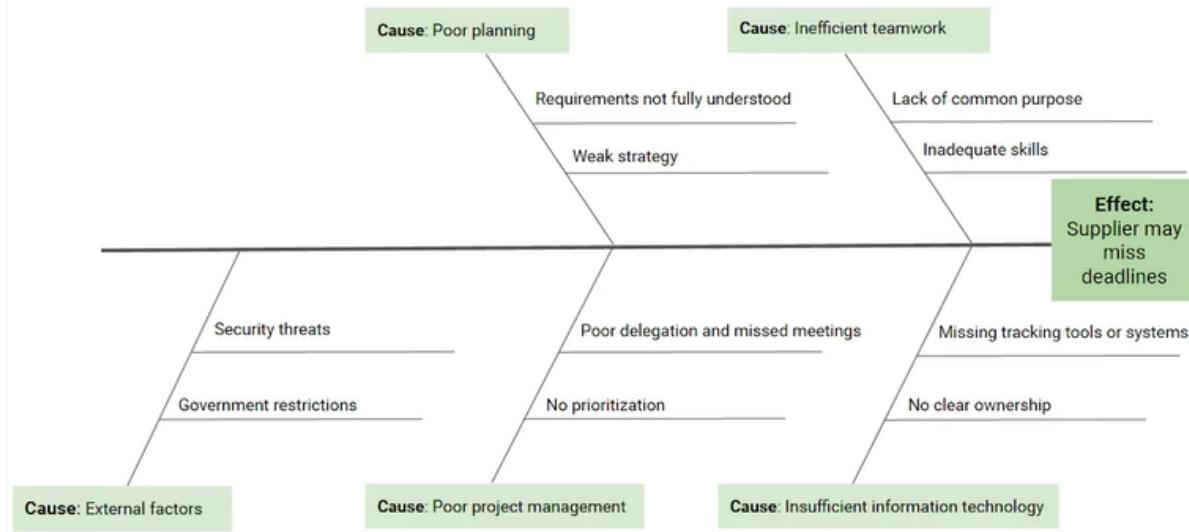
Let's discuss tools and techniques you can use to identify risks, including brainstorming and risk assessment.

Brainstorming

Brainstorming is one of the most effective techniques for identifying risks with the team because it **allows groups to spontaneously share ideas without judgment**. As a project manager, you will be responsible for **bringing a group of people together to imagine potential risks**. Have your RACI chart at the ready to refer to when you decide who to invite to this meeting.

Speaking from experience, the best team for this task is a **diverse one**, which includes **individuals from various roles, backgrounds, and experiences**. Diverse teams bring different perspectives, experiences, and skill sets, and this may help you to **identify risks that you may not have thought of on your own**. For example, one member of your team might have experience working on multiple projects, while another newer team member, might bring a fresh perspective from their previous experience on other teams.

A great tool that you can use during brainstorming is called a **cause-and-effect diagram**, also sometimes known as a **fishbone diagram**. Cause-and-effect diagrams **show the possible causes of an event or risk** and are very useful at risk management.



For example, in the diagram seen here, the effect listed is a supplier missing its deadlines. This is a risk to your project. On the left, you'll brainstorm potential causes that would lead to the effect, like poor delegation or a lack of tracking tools.

In other words, cause-and-effect diagrams can help **identify all the ways that things could go wrong** by identifying a potential risk, known as the effect, and working backwards to consider the potential causes of that risk. By **categorizing and breaking them down** into further causes, you are able to **identify areas that could lead to a potential problem**, like exceeding your budget or allowing scope creep to impact your timeline.

As a reminder, scope creep refers to changes, growth, and uncontrolled factors that affect the project's scope at any point after the project begins. During these brainstorming sessions, you might find that your list of potential risks is quite long, and that's okay. It is a reality you and your team cannot account for every single problem that can occur during your project. So **how do you decide which risks to focus on? List the outcomes from the brainstorm in a risk register. A risk register is a table or chart that contains your list of risks.**

ID	Risk Description	Risk to Project	Mitigation Plan
1	Vendor is one day behind schedule to meet an important milestone		
1.1	Vendor is far behind schedule to meet an important milestone		
1.2	Vendor misses an important deadline		

Risk Assessment

Risk assessment is the **stage of risk management where qualities of a risk are estimated or measured**. By qualities, we're mainly referring to **how likely the risk is to occur** and **its potential impact on a project**.

There are a few **ways to assess risks**, but one we'll focus on is **creating a probability and impact matrix**.

		Inherent Risk		
		Impact		
		Low	Medium	High
Probability	High	Medium	High	High
	Medium	Low	Medium	High
	Low	Low	Low	Medium

A **probability and impact matrix** is a **tool used to prioritize project risks**. Earlier, I mentioned that you need to **assess the likelihood that a risk will happen** and **its potential impact**. This matrix will help you do just that. To create a probability and impact matrix, you will need to think about the **level of impact**.

Impact refers to the damage a risk could cause if it occurs. Impact is also **determined on a scale of high, medium, and low**. High means that if the risk occurs, it will substantially alter the project. Low means if the risk occurs, it will have a slight impact but it's not likely to derail the project. You will also need to think about probability. **Probability is the likelihood that a risk will occur.** We also determine probability on a scale of high, medium, and low. In this case, high probability means there's a high likelihood of this happening. Low probability means you've identified a risk that could happen, but it isn't likely that the risk will occur. These **two considerations come together to determine the inherent risk rating**.

Inherent risk is the **measure of a risk calculated by its probability and impact**. Measuring the inherent risk gives us a **method for understanding a risk**. Inherent risk is also **determined on a high, medium, and low scale**. Basically, if a risk has a low impact and low probability, it has a low inherent risk rating. These are the types of risks you don't need to worry too much about. But if a risk has a high impact and a high probability, then it carries a high inherent risk rating. Medium to high risks are the risks you should focus on and create detailed mitigation plans for.

When you're creating a probability and impact matrix, it's important to ensure you create a matrix that **meets accessibility guidelines and has information and formatting that everyone can easily and quickly understand**. One way to do this is to use **both color and distinct shapes** or text to communicate levels of risk. You can learn more about accessibility communication by visiting course resources.

The way you view and manage each risk will be determined based on your organization's **risk appetite**, which refers to the **willingness of an organization to accept the possible outcomes of a risk**. You, your team, and your stakeholders may have different appetites for each risk. Certain low-level risks that could result in minor setbacks are much more tolerable than high-level risks that have the potential to completely derail your project. Once you've

completed your risk assessment, you will update the risk register to include high, medium, and low ratings for some examples of risks that you've identified for this project.

ID	Risk Description	Risk to Project	Mitigation Plan
1	Vendor is one day behind schedule to meet an important milestone	Low	Check in with the vendor to determine if the project manager can help remove any blockers to progress
1.1	Vendor is far behind schedule to meet an important milestone	Medium	Hold daily check-in meetings to get updates on progress and remove blockers where necessary
1.2	Vendor misses an important deadline	High	Hire a new vendor

4.2.2 How to create a fishbone diagram

Previously, you learned about some tools to help you identify risks. In this reading, we will dive deeper into how to create and use one of those tools: the **fishbone diagram**.

Fishbone diagrams—also known as **Ishikawa diagrams** or **cause-and-effect diagrams**—were developed by Japanese organizational theorist Kaoru Ishikawa in the 1960s to measure quality control processes in the shipbuilding industry. Fishbone diagrams are a visual way to look at cause and effect. They are called fishbone diagrams because they have a similar shape to a fish skeleton.

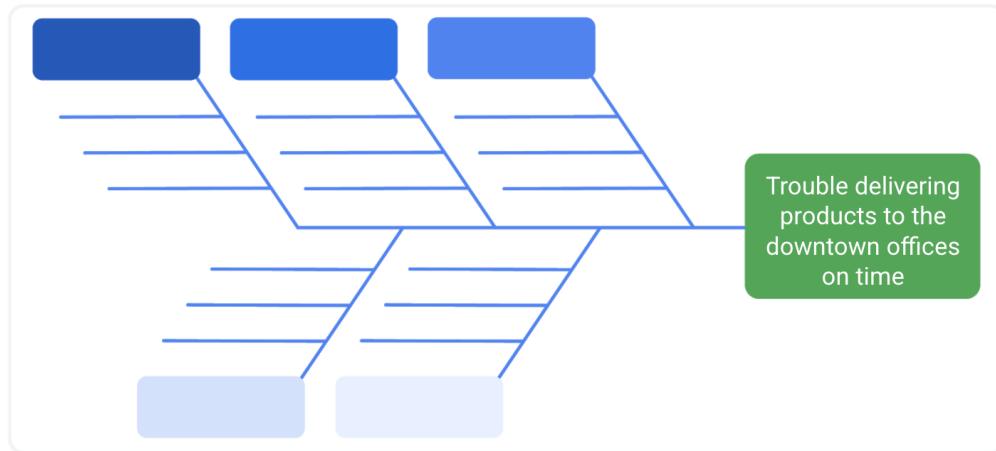
Fishbone diagrams help the team to brainstorm potential causes of a problem or risk and sort them into useful categories. These categories show the areas that you should focus on to mitigate that risk. Fishbone diagrams are also very helpful in finding the root cause of a problem. A **root cause** is the initial cause of a situation that introduces a problem or risk. The purpose of using fishbone diagrams in risk management is to identify the root cause of a potential problem for a project or program.

Case study: Using a fishbone diagram to identify causes of risks

Miguel is a project manager at Office Supply Inc. He is in the planning phase for an upcoming summer promotion project, which will include free delivery of products. Unfortunately, in the past, the company has had trouble delivering its products to downtown office buildings on time. Miguel builds a fishbone diagram to see if he can identify some of the possible causes of this problem in order to mitigate this risk on the current project. He follows these steps to build his diagram:

Step 1) Define the problem

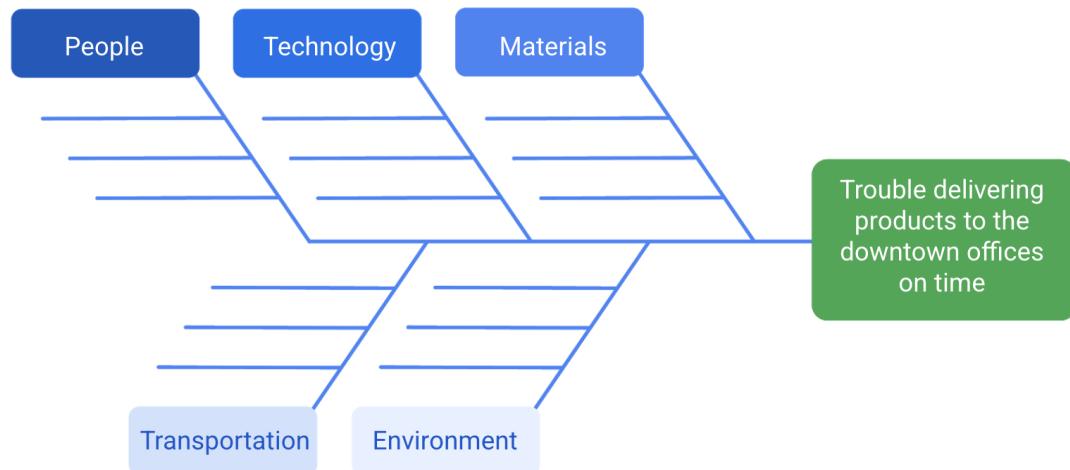
First, Miguel clearly defines what the problem entails. In this case, Miguel states the problem as “trouble delivering products to downtown office buildings on time.” Then he adds the problem to the head of his fishbone diagram.



Step 2) Identify the categories

In this step, Miguel thinks of the types of categories that could be causing the problem. These categories will change depending on the type of problem or industry. Some common examples of categories include “people,” “technology,” “materials,” “transportation,” “money,” “time,” “environment,” and “procedures.”

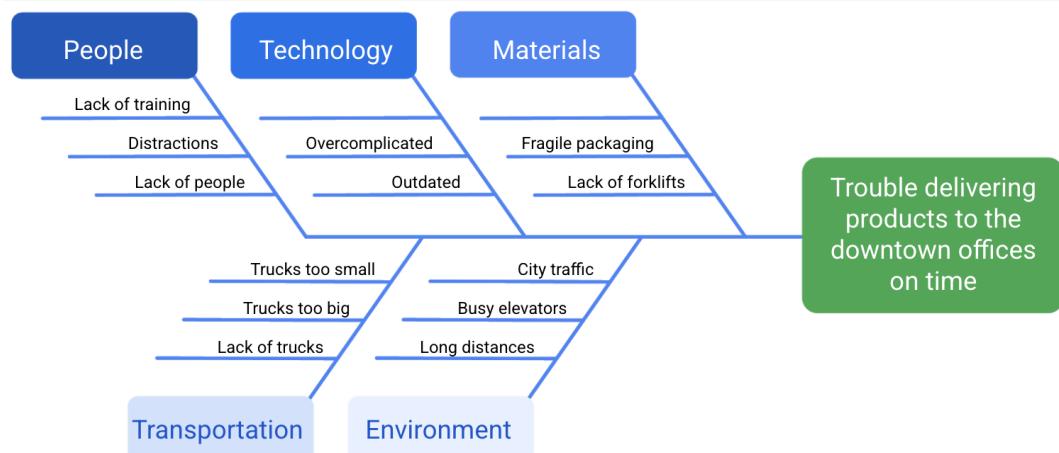
For the delivery problem at Office Supply Inc., Miguel lists the categories “people,” “technology,” “materials,” “transportation,” and “environment” at the top and bottom of the lists to the left of the problem in his fishbone diagram.



Step 3) Brainstorm the causes

Now that Miguel has identified possible categories that relate to the risk, he brainstorms areas of concern within each category. He reaches out to his team for help in identifying these possible causes. Then, Miguel fills in the lists with some of the causes that could be related to each category.

Pro tip: Brainstorming should be a judgment-free zone. Encourage the flow of information related to the categories and try not to rule things out. When dealing with human factors, steer clear of naming individuals; instead, focus solely on behaviors.

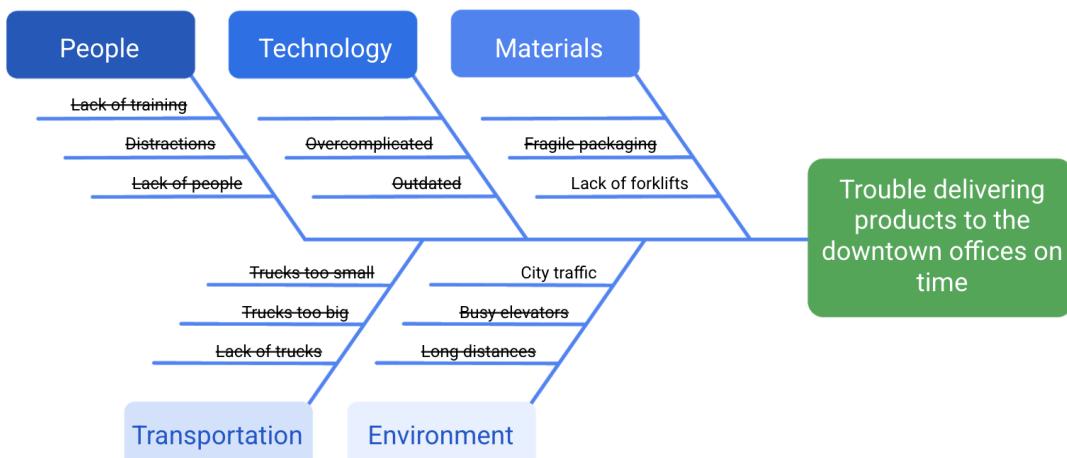


Step 4) Analyze the causes

Now that Miguel has discovered several possible causes for the delivery problems to downtown offices, he analyzes those causes. He needs to identify the root cause of the existing problem so he can figure out how to mitigate it for the current project.

Note that *one* cause of a problem isn't necessarily the *root cause*. For example, Miguel has identified that a lack of forklifts is a problem. Having more forklifts would allow the company to get the products on and off of the trucks more quickly. However, after calculating the amount of time it takes to unload and load the products, Miguel realizes that adding more forklifts won't significantly reduce the amount of time to get the products from the warehouse to downtown offices. Therefore, this is one cause of the problem, but it is not the root cause.

On the other hand, Miguel has noticed that there is no set schedule for sending out deliveries. Since the problem only exists in the city instead of in the suburban areas, he realizes that traffic must also be playing a role in the late deliveries. Therefore, changing the schedule so that the delivery times are before the city's rush hour may help fix the problem.



Pro tip: Fishbone diagrams are tools that can be useful during any phase of the project. When you use them in risk planning, you are trying to identify the possible causes of a

problem that may or may not occur. When you use them in the execution phase, you are trying to find the root cause of an issue that has already occurred.

Key takeaway

Identifying risks and measuring their potential impact on a project can be a complex task. You can help visualize these issues by creating fishbone diagrams. To recap, the steps to create a fishbone diagram are:

- Define the problem
- Identify the categories
- Brainstorm the causes
- Analyze the causes

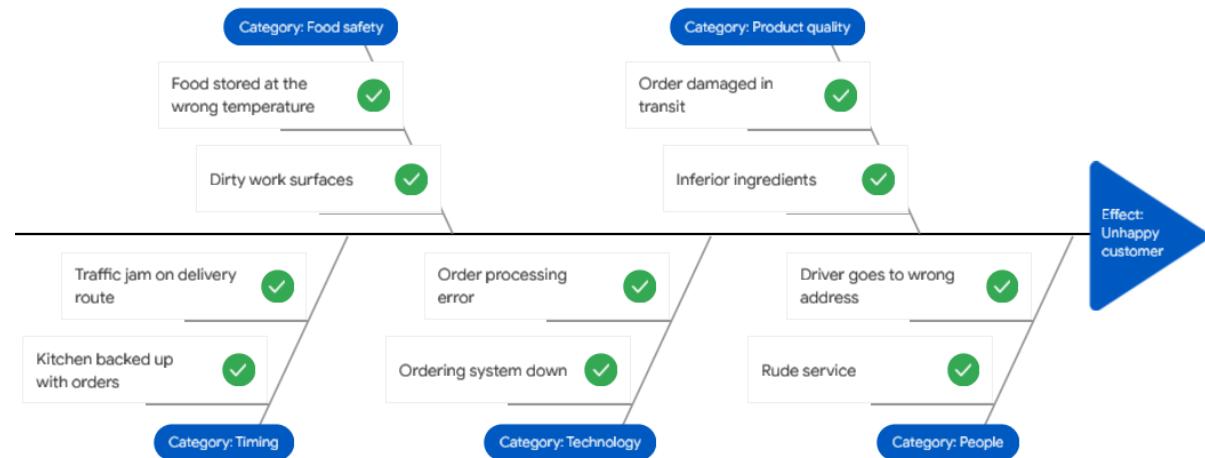
Once you've developed a fishbone diagram to help find a problem's root cause and measure its potential impact on the project, you can then move on to determining how to mitigate the risk.

4.2.3 Practice: Analyzing causes and mitigating risks

Connect the cause to the effect and develop a mitigation plan

Cloche is a bakery that serves bread, pastries, and light meals. They're introducing a new delivery service and want to anticipate potential risks. As project manager, help them uncover potential risks and then perform a risk assessment.

Identify potential causes



What's the mitigation plan?

Risk description	Risk to project	Mitigation plan
Food safety issues due to dirty work surfaces	Low	Ensure daily cleaning checklist meets food safety standards and supplies are well stocked. 
Product quality suffers due to damage in transit	Medium	Test out different packaging materials for quality and durability. 
Late delivery due to traffic jam on delivery route	High	Adjust delivery estimates for peak driving hours and traffic congestion. 

Risk description	Risk to project	Mitigation plan
Unpleasant experience due to rude service	Low	Ensure delivery personnel are well compensated and have proper training. 
Incorrect order due to processing error	Medium	Run regular tests on the ordering system to make sure it's running smoothly. 
Late delivery due to backlog of orders in kitchen	High	Make sure to hire enough kitchen staff to cover high-volume shifts. 

4.2.4 Types of risk

Let's discuss some **common types of risks** that you might plan for while managing a project. Though there are many different types of risks that could impact your project, the big ones that you want to be aware of are: **time risks, budget risks, and scope risks**.

- **Time risks** refers to the **possibility that project tasks will take longer than anticipated** to complete. You'll need to be aware of time risks because time is money. Poor time management may **deplete your budget and upset your stakeholders by causing delays**.
- **Budget risk** refers to the **possibility that the cost of a project will increase** due to poor planning or expanding the project scope. You need to be aware of budget risk since budgeting provides the basis for project costs control. For example, if you overspend, you might not be able to pay your suppliers. This could result in some reputational damage for the company.
- **Scope risk** refers to the **possibility that a project won't produce the results outlined in the project goals**. You need to be aware of scope risks because the deliverables of your project might not be acceptable to your stakeholders or customers, and that may defeat the purpose of the entire project.

While time, budget, and scope risks are very common, there are **other types of external risks** that you should be aware of. By external risks, we're referring to risks that result from factors outside of the company that you have little to no control over. For example, your project could be impacted by an environmental risk, like a major storm, or a legal risk, like a change in regulatory requirements. There will never be a prescription for how to identify and

manage every single possible risk. But if you have a plan, you'll be better set up to deal with whatever comes your way.

Let's discuss a certain type of risk known as **a single point of failure**. A single point of failure is **a risk that has the potential to be catastrophic and halt work across a project**. These are risks that **have the power to stop an entire team** in its tracks, meaning that no one can make progress on their tasks until the issue is resolved.

For example, in our Office Green scenario, a single point of failure might be a power outage that takes down the internal database where every piece of information about the project is stored. Until the database is back up and running, your team won't have access to any of the information they need to do their jobs. As a result, your team won't be able to complete any of their assigned tasks. To mitigate this risk, you might budget for a separate cloud service to serve as your backup for all of your project documentation and information. As the project manager, you'll need to identify and monitor potential single points of failure in your project, since they can be detrimental to the project timeline, budget, and scope.

Another **source of risk** to be aware of are **dependencies**. A dependency is a **relationship between two project tasks**, where **the start or completion of one depends on the start or completion of the other**. In other words, dependencies are like **links that connect one project task to another**. A dependency must be addressed before the task can be completed or before another task can begin. Because dependencies are the links that connect one project task to another, they are often a huge source of risk to a project.

For example, imagine that you've tasked a teammate with hiring a local plant supplier. Until they've signed a contract with the supplier, your team can't place any orders. That's a dependency. Now here's where the risk comes in. If your teammate doesn't meet the hiring deadline and then goes on vacation for a week, this could delay your project timeline. If you don't plan for dependencies, you might risk and impact your budget schedule or project outcome. To prevent something like this from happening, you might ask a teammate to share their out-of-office plans with you at the start of the project. This helps you to stay aware of everyone's schedules, ensuring that there are backup plans in place to maintain your project schedule.

There are two types of dependencies: internal and external. **Internal dependencies** refer to **dependencies within the project** that you and your team have control over. For example, you'll need to secure approval on a website design before development can begin. On the other hand, **external dependencies** are dependencies that you have **no control over**. For example, the farm that your plant vendor works at might have experienced a lighter rain season this year, meaning that they'll have fewer plants to sell.

Test your knowledge: Measuring risk impact

1. Which type of risk involves the possibility that a project will *not* produce the results outlined in the project goals?

- Budget risk
- Scope risk
- Time risk
- Environmental risk

 **Correct**

This type of risk involves the possibility that a project won't meet your project goals and could result in the deliverables of your project not being acceptable to your stakeholders or customers.

2. Imagine you're a project manager overseeing the development and launch of a new app. Which of the following problems could be a *single point of failure* risk in the app's development?

- Failing to back up key project documentation, which may result in a complete loss of essential data.
- Lack of communication between the designers and the project lead, which may lead to tension among team members.
- Receiving negative feedback from user testing, which may lead to more work for the developers.
- Completing a project milestone behind schedule, which may delay the project timeline.

 **Correct**

If the documents become corrupted and the data gets lost, the project can't move forward until the team rebuilds them. That makes this a single point of failure risk, which has the potential to be catastrophic and halt work across the project.

3. Continuing with the app-development project scenario from the previous question, which three of the following task relationships demonstrate an *internal* dependency?

- Researchers must conduct usability tests before the team can improve the design.

 **Correct**

Your team is responsible for usability testing, making this an internal dependency.

- Clients must sign off on the design before the official launch.

- Designers must complete wireframes before they begin prototyping.

 **Correct**

Your team is responsible for the app's design, making this an internal dependency.

- Partner agencies must deliver image assets before the app is complete.

- Developers must fix bugs before the Quality Assurance team begins testing.

 **Correct**

Your team is responsible for bug fixes, making this an internal dependency.

4. Continuing with the app-development project scenario from the previous question, you need to secure funding to develop the app. You want to write a grant proposal to an investment firm. Which of the following is an *external* dependency for this task?

- Outline your project milestones in the proposal.
- Appoint a team member to assemble the proposal.
- Get feedback from the investment firm about the types of projects they are interested in funding.
- Identify team members to write the sections of the proposal that align with their expertise.

 **Correct**

Your team can't control what interests the investment firm, making this an external dependency for the grant-writing task.

4.2.5 Managing single point of failure risks

Previously, you learned how to use various tools and strategies to identify and manage risks as you plan your project. In this reading, we will discuss how to manage risks with the highest potential of impacting your project.

Single point of failure risks

Once you have identified your risks and ranked them, give special attention to the risks that could have a catastrophic effect on your team's ability to complete the project. A **single point of failure** is a risk that, if it were to materialize, could cause a significant amount of disruption to your project and could even shut it down. You should plan for these risks early on in the project.

For example, a lot of projects use **subject matter experts (SMEs)**—team members with a deep understanding of a particular job, process, department, function, technology, machine, material, or type of equipment. SMEs are involved to advise you throughout the project life cycle. Having only one SME familiar with a critical system on your team is an example of a single point of failure risk. This SME will only offer one perspective, and if they are the only person advising on the system, there is no one to offer another perspective.

Case study: Using mitigation strategies to manage single point of failure risks

Let's imagine that Office Green uses plant seeds from a company in South America for the majority of its offerings. The plants produced by these seeds are in high demand by Office Green's customers. However, the local government on the suppliers' end just announced that it would be imposing a new tax on the exporting of seeds and produce. As a result, the price of the seeds suddenly becomes so high that it is difficult for the company to supply the seeds to Office Green, putting the project at risk of not having these seeds available to purchase.

Let's look at how these four risk mitigation strategies can be used for managing single point of failure risks in the Office Green example:

Four types of risk mitigation



Avoid

This strategy seeks to sidestep—or avoid—the situation as a whole. In the Office Green example, the team could avoid this risk entirely by considering using another seed that is widely available in several locations.

Minimize

Mitigating a risk involves trying to minimize the catastrophic effects that it could have on the project. The key to minimizing risk starts with realizing that the risk exists. That is why you will usually hear mitigation strategies referred to as *workarounds*. What if the Office Green team decided to use both the original South American supplier and another supplier from a neighboring country? More than likely, the change in taxation and regulation wouldn't affect both companies, and this would provide Office Green some flexibility without having to completely eliminate their preferred supplier.

Transfer

The strategy of transferring shifts the responsibility of handling the risk to someone else. The Office Green team could find a supplier in North America that uses the seeds from several other South American countries and purchase the seeds from them instead. This transfers the ownership of South American regulatory risks and costs to that supplier.

Accept

Lastly, you can accept the risk as the normal cost of doing business. **Active acceptance of risk** usually means setting aside extra funds to pay your way out of trouble. **Passive acceptance of risk** is the “do nothing” approach. While passive acceptance may be reasonable for smaller risks, it is not recommended for most single point of failure risks. It is also important to be proactive and mitigate risks ahead of time whenever possible, as this may save you from having to accept risks. In the Office Green scenario, the project manager could schedule a meeting with project stakeholders to discuss the increase in South American taxes and how it could impact the project cost. Then, they might decide to actively accept the risk by setting aside additional funds to source the seeds from another supplier, if necessary, or to passively accept the risk of not receiving the seeds at all this season.

Key takeaway

If you have strategies you can rely on for avoiding, minimizing, transferring, and accepting project risks—including single point of failure risks—you will be in a better position to protect your project from the possible impact of these risks.

4.2.6 Visualizing dependency relationships

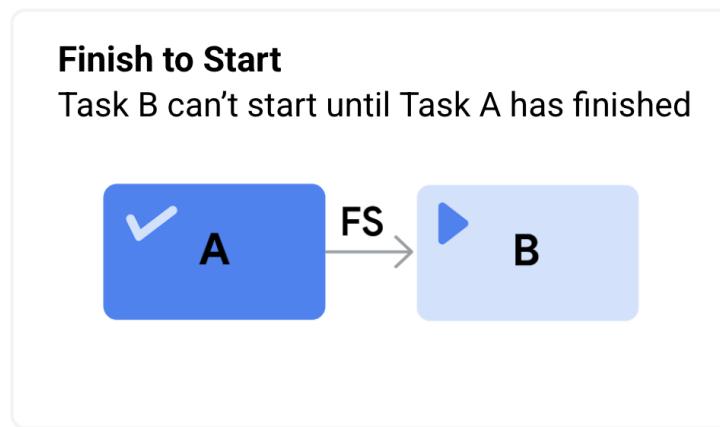
In the video, you learned to identify several types of risks. In this reading, we will be discussing the different types of dependencies that can play a critical role in our project's success.

Types of dependencies

Dependencies are a relationship between two project tasks in which the completion or the initiation of one is reliant on the completion or initiation of the other. Let's explore four common types of dependencies:

Finish to Start (FS)

In this type of relationship between two tasks, Task A must be completed before Task B can start. This is the most common dependency in project management. It follows the natural progression from one task to another.



Example: Imagine you are getting ready to have some friends over for dinner. You can't start putting on your shoes (Task B) until you've finished putting on your socks (Task A).

Task A: **Finish** putting on your socks. → Task B: **Start** putting on your shoes.

Finish to Finish (FF)

In this model, Task A must finish before Task B can finish. (This type of dependency is not common.)

Finish to Finish
Task B can't finish until Task A has finished

FF



Example: Earlier in the day, you baked a cake. You can't finish decorating the cake (Task B) until you finish making the icing (Task A).

Task A: **Finish** making the icing. → Task B: **Finish** decorating the cake.

Start to Start (SS)

In this model, Task A can't begin until Task B begins. This means Tasks A and B start at the same time and run in parallel.

Start to Start
Task B can't start until Task A has started



SS

Example: You need to take the train home after work. You can't get on the train (Task B) until you pay for the train ride (Task A).

Task A: **Start** by paying for your train ride. → Task B: **Start** going home by boarding the train.

Start to Finish (SF)

In this model, Task A must begin before Task B can be completed.

Start to Finish
Task B can't finish until Task A has started

SF



Example: One of your friends calls to tell you he'll be late. He can't finish his shift (Task B) and leave work until his coworker arrives to start her shift (Task A).

Task A: Your friend's coworker **starts** her shift. → Task B: Your friend **finishes** his shift.

Dependency graphs

As a project manager, you will use these dependencies to visually represent the flow of work during your project. Let's examine how to use a dependency graph with an everyday example.

Imagine you are making peanut butter and jelly sandwiches for the kids who will be coming to your dinner, and you want to use dependency relationships to map your activities on a graph.

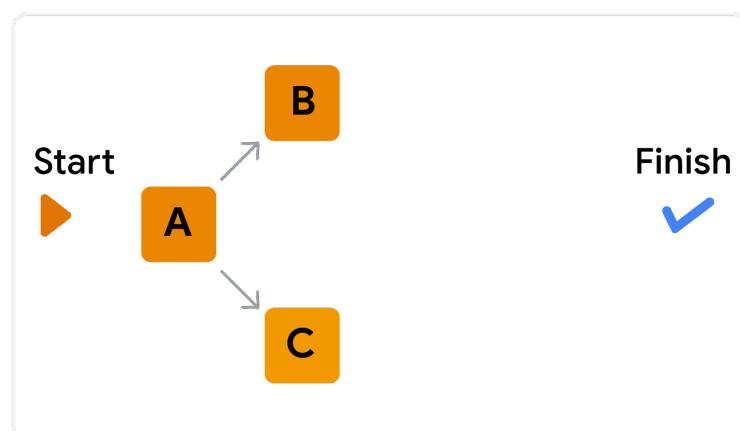
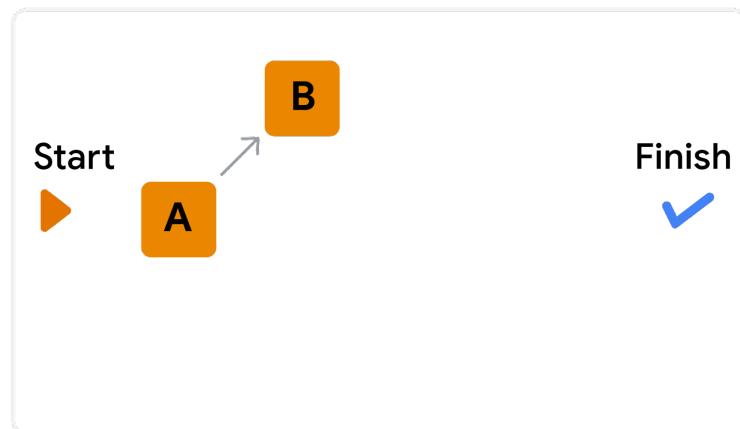
Peanut Butter & Jelly Time

Activity	Work	Relationship
A	Gather materials	After starting the project
B	Put jelly on a piece of bread	After A
C	Put peanut butter on a piece of bread	After A
D	Put both pieces of bread together	After B and C
E	Serve to kids	After activity D

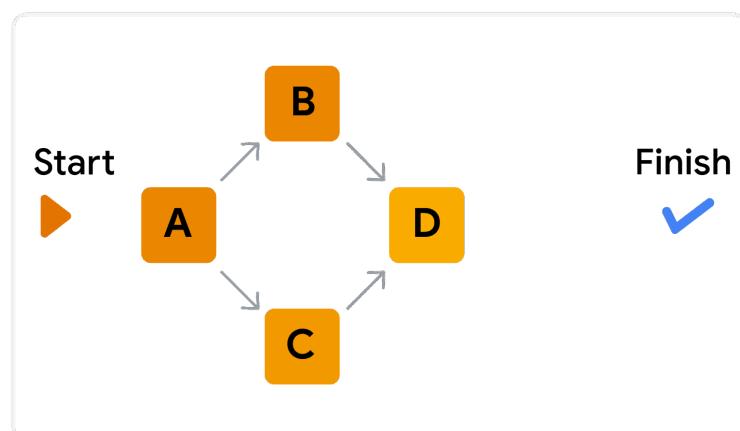
Let's break each task down to create your dependency graph:

1. When you start your sandwiches, you need to gather your materials: bread, knife, jelly, peanut butter, plates, and napkins (Task A).

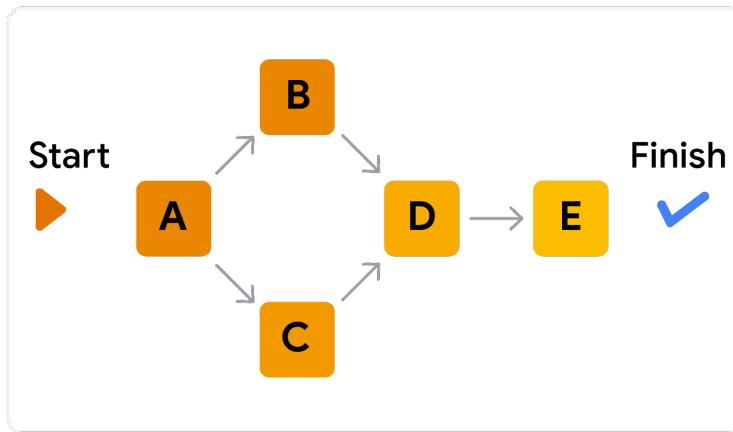
2. At this point, you can put jelly on one piece of bread (Task B) and peanut butter on the other piece of bread (Task C).



3. Now you need to put both pieces of bread together (Task D).



4. Finally, you can put the sandwich on a plate and serve it (Task E).



Key takeaways

There are four types of task dependencies:

- Finish to Start
- Finish to Finish
- Start to Start
- Start to Finish

A dependency graph can help you visualize these different dependencies and the flow of the work that needs to be done on a project. They can also help you identify any risk associated with them.

Test your knowledge: Identifying and assessing risks

1. Imagine that you're overseeing a project to construct a new office building for your company, and you need to determine your task dependencies. Which of the following tasks should come first?

- Begin construction on the new building.
- Set the project budget.
- Identify the construction site.
- Get stakeholder input to determine project goals.

 **Correct**

Connecting with stakeholders is a critical first step in any new project. Following that, you can set the project budget, identify the construction site, and begin construction on the new building.

2. Continuing with the construction project scenario from the previous question, which of the following tasks should come last in the project?

- Move equipment to the new office.
- Hire an architect.
- Order the building materials.
- Plan for risk.

 **Correct**

Moving equipment into the new office comes after planning for risk, hiring an architect, and ordering materials.

3. Continuing with the construction project scenario from the previous question, imagine that you underestimated the amount of a particular material needed to complete the new building. You purchase more of the material at full cost, since you no longer qualify for the bulk, discounted rate. What risk does this scenario demonstrate?

- Legal risk
- Time risk
- Budget risk
- Environmental risk

 **Correct**

Unexpected costs due to poor planning can pose a risk to the project budget.

4. Continuing with the construction project scenario from the previous question, the project team completes the designs (Task A) and then begins construction (Task B). What type of dependency describes the relationship between Tasks A and B?

- Start-to-Start (SS)
- Finish-to-Finish (FF)
- Start-to-Finish (SF)
- Finish-to-Start (FS)

 **Correct**

Task A must be completed before Task B can start (the designs must be completed before construction can begin), making this an example of a Finish-to-Start dependency.

4.3 Mitigating And Communicating Risks

4.3.1 Risk mitigation strategies

Risk mitigation planning is about **finding ways to eliminate or reduce the impact of potential risks to your project**. There are **four common ways to mitigate risk**. You can **avoid it, accept it, reduce or control it, or transfer it**. Let's discuss each option using the Office Green example.

Sometimes you can **avoid the risk altogether**. For example, if you learn that a certain contractor you've considered working with on your Office Green project has a poor reputation for meeting deadlines, then you might choose to avoid that risk by hiring a different contractor.

You can also **accept the risk**, especially ones that you deem **low in probability and impact**. In this case, you're accepting the possibility that this risk can happen. You've agreed to monitor it throughout the project, and you'll ultimately be okay with the risk if it does happen. For instance, maybe your plant supplier tells you that one of the planter styles you've requested is back-ordered. The supplier is confident that they'll have time to restock the planters without delaying your project schedule, but if there is an issue with every stock shipment, this could delay deliveries to your clients by up to two days. Rather than starting over with a new supplier, you decide that it makes more sense to accept the risk. It wouldn't be ideal for this delay to occur, but you're flexible and you know that accepting this risk will save you and your team the headache of onboarding a new supplier, which could take two weeks.

Another way to mitigate a risk is to **reduce or control it**. Personally, I like to use a decision tree when building mitigation plans. **A decision tree is a flowchart that helps visualize the wider impact of a decision** on the rest of your project. For example, you decide to hire the contractor with a reputation for missing deadlines because you know they do great work. In this case, you might create a quick flowchart that visualizes the risks and potential options for addressing it, like checking in with the contractor daily, either by email or through meetings. Ultimately, you might then choose to have daily check-in meetings with the team to ensure that they're staying on top of their tasks.

Finally, you can choose to **transfer the risk**. For example, you've determined that it's too risky to attempt to grow plants on site at Office Green due to the possibility that bad weather or pests could negatively impact your product. Instead, you've made a decision to transfer the risk to another party or parties. By outsourcing plant production to local suppliers, you have the power to change suppliers if there's an issue with quality. When you transfer the risk, you don't risk losing out on time, resources, and money.

4.3.2 Building a risk management plan

A risk management plan is a living document that contains information regarding high-level risks and the mitigation plan for each of those risks. This plan helps ensure that teammates and stakeholders have a clear understanding of potential problems and a plan to address them should they occur. Risk management is an ongoing practice that you'll take part in throughout the planning and execution of a project.

Since **risk management evolves throughout the project**, the plan should be updated regularly to add newly-identified risks, remove risks that are no longer relevant, and include any changes in the mitigation plans. Let's review an example of a risk management plan similar to the one we sometimes use here at Google.

Link to template: [Risk management plan](#)

At the top of the document, we include **the name of the company**, and below it, **the name of the project**. We also include the **document author** so that anyone reviewing the plan

knows exactly who to reach out to if they have any questions. This template also designates a spot for the **document status**. As you're building your plan, you can list the status as "in progress." Once the plan is complete, you can change the status to "final."

We've also included helpful details like **when the document was created** and **when it was last updated**. Details like these might seem small, but it's best practice to include them. That's because **being transparent about dates provides stakeholders** with a sense of **how up-to-date the document is**. Below these details, we have the **document objective**. Here, we've written that our objective is to **outline mitigation plans** for Project Plant Pals. Below that, we've added an **executive summary** of our project. Executive summaries should include a **brief introduction to the normal conditions of a project and an outline of the potential risks that could impact the project**.

Now onto the really important stuff: **the risks and how we'll mitigate them**. This document also includes the **risk register** you learned about earlier, which is a table or a chart that contains your list of possible risks. Down in the appendix of the document, you'll find the **probability and impact charts** as well as the **probability and impact matrix** that we use to assess our risks. Once you've filled out the risk management plan, you'll share it with your team and stakeholders to get their input and to ensure that they are aligned with your plans.

Test your knowledge: Mitigating and communicating risks

- Imagine you have learned that a contractor who has done quality work for your organization in the past has received some negative reviews recently. You choose to hire another contractor for the current project. This is an example of mitigating risk by _____.
 transferring it
 avoiding it
 accepting it
 reducing or controlling it



Correct

By hiring a different contractor, you are mitigating the risk by avoiding it altogether.

- Which of the following are basic components of a risk management plan? Select all that apply.

- A risk register



Correct

A risk register contains a list of possible risks to a project, making it easier to avoid or mitigate them. A risk management plan should also include a probability and impact matrix and mitigation plans.

- A probability and impact matrix



Correct

A probability and impact matrix helps determine the likelihood a risk will occur and the damage a materialized risk could cause to the project. A risk management plan should also include a risk register and mitigation plans.

- Mitigation plans

 **Correct**

Mitigation plans give teams and stakeholders a clear understanding of potential problems and a plan to address them. A risk management plan should also include a probability and impact matrix and a risk register.

- A Gantt chart

3. Which of the following tools can help project managers visualize how to mitigate a risk in order to reduce or control it?

- A decision tree
- A project charter
- A statement of work
- A power grid

 **Correct**

A decision tree is a flowchart that can help project managers visualize the wider impact of a decision on the rest of a project.

4. What step should you take *after* you complete your risk management plan?

- Create a power grid to include in the appendix of your plan.
- Share the plan with your team and stakeholders.
- Implement the individual mitigation plans for the risks you have identified.
- Estimate the likelihood and impact of the project risks you have prioritized.

 **Correct**

Once you've filled out the risk management plan, you should share it with your team and stakeholders to solicit their input. This will help you confirm alignment with your plan.

4.3.3 Communicating risks to stakeholders

As you've learned in the past few videos, **identifying and assessing risks** is a crucial part of the project planning process. These exercises help **clarify the most important risks** for you and your team and ensure that everyone agrees on which risks to plan for. But it's not enough for you and your teammates to simply be aware of the biggest risks to a project.

You also **need to communicate these risks to your project stakeholders**, whether through documentation, e-mail, meetings, or other forms of communication you've deemed appropriate. Your stakeholders need to be aware of the risks facing a project, because **if you don't tell your stakeholders about important risks, they may be less equipped to help you if an issue does arise**. For example, they might not be able to provide you with more budget should you need it or with more resources should you require them. Even worse, your stakeholder might be caught off guard by an issue. Unpleasant surprises like these can erode that trust in you as a leader of the project. They'll likely want to know if you were

aware of the possibility that this risk could occur, and they might wonder why you didn't share this information with them sooner. That's why it's **important to communicate early and often with stakeholders** about medium- and high-level risks. It sets expectations with stakeholders about what to potentially expect during the project execution phase and demonstrates that you've taken steps to mitigate and plan for those risks should they come up. It also gives you the opportunity to **suggest ways they might be able to help you** if a risk does arise.

How do you **communicate risks to stakeholders** during the planning phase? Well, that depends on the severity of the identified risk.

- For **low-level risks**, something as **simple** as an e-mail might suffice. For example, when sending out weekly planning updates to a project stakeholder, you might list a few low-level risks that are relevant to their interests and briefly explain how you'll address these risks if they arise.
- For **medium level risks**, you might increase your level of communication to a **direct e-mail between yourself and the stakeholder** in which you outline the risk with more specifics and provide a detailed explanation of your plan to mitigate the risk. You might also link to your risk management plan to provide them with more information. You might write "urgent" in the subject line to stress the e-mail's importance.
- The serious nature of **high-level risks** requires a **thorough and direct level of communication**. When you're meeting with stakeholders to go over the project plan, you might add an agenda item to present serious risks and your plans to mitigate these risks. You can also use this time to collect feedback on your risk management plan and ask for insights from stakeholders on how they suggest handling these high-level risks. Your stakeholders might have prior experience planning for similar risks and strategies that you hadn't considered before.

Risk communication is a big part of my role here at Google. As a program manager, I'm constantly writing e-mails and delivering presentations on the status of my projects, often with the goal of sharing known risks and my risk mitigation plans. In discussing these plans with my stakeholders, we often uncover other risks that I hadn't even considered. For example, in a recent meeting, I was presenting a potential new product to a stakeholder on a different team. In the meeting, the stakeholder flagged their concerns that my solution might create time and resource risks that could have a negative impact on their team. This discussion gave me deeper insights of my colleagues' potential risks and of the product's users' needs, which made me realize that I needed to ask my project sponsors for additional budget and resources.

It's always a good idea to discuss your plans with your stakeholders. They may have a different perspective. To recap, it's important to communicate risks to stakeholders so that they're better able to help you should one arise, and you should tailor your communication style according to the severity of the risk.

Weekly Challenge 4

1. A project manager has a responsibility to identify and plan for potential problems and known issues. What is this process of identifying and planning called?

- Risk mitigation
- Risk identification
- Risk management
- Risk analysis

 **Correct**

2. The risk management process can provide project managers a better understanding of what information? Select all that apply.

- What could go wrong with the project

 **Correct**

- When exactly the risk will occur
- How could the project manager mitigate the potential risk

 **Correct**

- Who the project manager needs to consult about a risk

 **Correct**

3. As a project manager practicing risk management, you find and define potential project risks. Which risk management step does this represent?

- Monitor and control risks
- Avoid risks
- Treat risks
- Identify risks

 **Correct**

4. Which of the following are steps involved in creating and utilizing a fishbone (or cause-and-effect) diagram? Select all that apply.

Analyze the causes

 **Correct**

Define the problem

 **Correct**

Mitigate causes

Identify categories

 **Correct**

5. Fill in the blank: Once an organization has explored the inherent risks of a project, its willingness to accept the possible outcomes of those risks is known as _____.

risk appetite

risk register

risk analysis

risk assumption

 **Correct**

6. Which of the following are examples of external risk? Select all that apply.

A deliverable takes longer than anticipated to complete

A breakdown in communication among team members

A project vendor goes out of business

 **Correct**

A change in regulatory requirements

 **Correct**

7. A project manager has just learned that a supplier has a history of missing deadlines. The supplier is defensive when asked about this. The project manager decides to find a new vendor. What kind of risk mitigation strategy is this?

- Accepting risk
- Avoiding risk
- Transferring risk
- Controlling risk

 **Correct**

8. A project manager communicates a newly discovered risk to a stakeholder. They include the risk in a weekly planning email with potential ways to address the risk if needed. What level of risk are they likely writing about?

- Medium-level risk
- Low-level risk
- Single point of failure
- High-level risk

 **Correct**

9. As a project manager, you're identifying task dependencies. Task B cannot start until Task A is complete. Which type of dependency does this situation represent?

- Finish to Finish (FF)
- Finish to Start (FS)
- Start to Finish (SF)
- Start to Start (SS)

 **Correct**

10. Should a risk management plan be updated regularly?

- Yes; the plan is a living document and should include new findings
- No; the plan should be determined as early as possible
- Maybe; if the stakeholders specifically request the updates

 **Correct**

Week 5 : Organizing Communication And Documentation

Learning Objectives

- Draft a simple communication plan and explain how to manage it
- Examine the elements of a communication plan that are vital to project success.
- Explain the value of documentation in creating visibility and accountability for team members.
- Organize project documents in one centralized place.
- Prepare for a job search by documenting career-relevant experience and highlighting transferable skills.

5.1 Creating An Effective Communication Plan

5.1.1 Why communication is critical

Communication is very important to every project. I'd even argue that it's the most important tool in making sure your project runs smoothly. Many times, what contributes to the success or failure of a project team comes down to whether or not everyone understands what's happening and how their tasks contribute to the project's goals. As project manager, you play a big part in making sure everyone knows what their roles and tasks are. You're also the person that team members come to when they're just in need of a quick answer. Being able to communicate clearly and effectively is key. It's important to remember that **without effective communication, the project is at risk of missing important opportunities or even failing altogether.**

Communication is the flow of information. It includes everything **that's shared, how it's shared, and with whom.** **Good effective communication** is always **clear, honest, relevant, and frequent**, but **not too frequent**. There is such a thing as information overload. Effective communication makes it possible for your project to run **on time** and up to the expectations outlined in the project plan.

Take full advantage of tools like meetings, emails, phone calls, written documents, and formal presentations, and make sure they are accessible by everyone. It's also important to remember that communication is **not a one-time event or one-way route**. It needs to happen throughout the entire life cycle of the project, from the project team and stakeholders, as well as from you.

Be sure to clarify goals and client expectations, follow up on action items, and communicate delays as the project progresses. This will help you **avoid issues and setbacks**. As the project manager, you're responsible for **creating a consistent flow of communication** throughout the project, **setting the tone for team communication** and working to make sure everyone's on the same page, every step of the way, gives your project the best chance to succeed.

5.1.2 Tips for effective communication

In the previous videos, you learned that communication is key to any successful project. As a project manager, you are central to that communication, which is an ongoing process throughout the life cycle of a project. A good project manager must be effective in communicating with all stakeholders and team members through various mediums.

As the project manager, it is important to develop a communication plan for the duration of your project. Good communication helps your project run smoothly, leads to better outcomes, and supports a healthy team culture. You can use these four tips to foster effective communication within your team:

Recognize and understand individual differences

You can encourage open, inclusive communication by:

- Not making assumptions about your audience's backgrounds, identities, or experiences.
- Being mindful of your own biases.
- Using appropriate, professional, and neutral language.
- Including, respecting, and being curious about diverse points of view.

As the project manager, you will undoubtedly work with a diverse group of team members and stakeholders on each project. You will need to understand each team member's background, experiences, perspectives, and biases—as well as your own—to communicate effectively.

Brainstorm and craft the appropriate message

Communicate the right message by thinking about your intended audience. With whom are you communicating? In your communications, always be clear about your reasons for reaching out:

- What channels can your audience use to contact you or the team?
- Are you conveying information?
- Are you asking for input?
- Are you clarifying an issue?
- Are you resolving a problem?

Some team members may require detailed information, while others may only need an overview of the situation. No matter your audience, you should be sure to identify the purpose of the message, state the information or request clearly and concisely, and stay on topic.

Deliver your message

As you craft your message, think about which methods are available and appropriate for communicating with various members of your team, whether that is in person, in a video conference, over the phone, via email, or in a meeting. Choosing the right method is

especially important if you have team members or stakeholders in different regions and time zones. Also, be sure to:

- Avoid including any sensitive or potentially private information.
- Assume everyone at the company will receive the communication.

Obtain feedback and incorporate that feedback going forward

Communication doesn't end when you deliver your message, so be sure to follow up with your audience by:

- Checking to make sure your message was clear.
- Asking them for feedback.
- Encouraging open communication.
- Responding to questions quickly.

In this final step, you will obtain feedback from your audience to ensure that your message was received as you intended.

Key takeaways

You now have the steps to communicate effectively as a project manager! You have learned how to foster open, inclusive communication by recognizing and understanding individual differences among your team members. You know how to craft and deliver an appropriate message and the importance of obtaining and addressing feedback. Most importantly, make sure your communications are clear, honest, relevant, and frequent. Following these guidelines will set you up for successful communication throughout your projects.

5.1.3 Starting a communication plan

A communication plan organizes and documents the process, types, and expectations of communication for the project. The size and complexity of your communication plan will be different for every project, but it is always good to have one. Especially with **multiple stakeholders, different phrases and change management are involved.** It will really help you, your project, and the stakeholders.

Just like other plans related to the project, your communication plan needs to address these questions:

- what needs to be communicated?
- who needs to communicate?
- when communication needs to happen?
- why and how to communicate?
- where the information communicated is stored?

Let's break down each question with a sample communication plan that I've created for our Plant Pals project.

Type of Communication	Recipients	Frequency	Key Dates	Delivery Method	Goal	Sender/Owner	Resource Links	Note
Project Newsletter	Key Stakeholders	Monthly	First Monday	Email	Status Update Overview	Project manager		
	Core Team	Daily	12pm ET	In-person / Video conference	Progress Update, Blockers, Next Steps	Team lead		
Daily Stand-ups	Marketing	Weekly	Wednesday 2pm	Email + Video conference	Backlog grooming, Demo	Project manager		
	Procurement	Weekly	Wednesday 3pm	Email + Video conference	Launch Prep	Project manager / Team lead		
Weekly Check-in	Product Development	Weekly	Wednesday 4pm	Email + Video conference	Key learnings & Celebration	Project manager		

Project Communication Plan

Project Title:	Plant Pals
Project Manager:	Rowena Halford
Executive Sponsor:	JuAnne Ng
Principal Stakeholder:	Emilio Garcia
Date:	8/24/2020

Deliverable Info	Recipient(s)	Delivery Method(s)	Schedule	Who's Responsible?
Project Information	Project Manager	Sharepoint	As needed	Project manager
Project Status	Project Team	ePortfolio	By noon Tues	Project manager
Agenda Minutes	Steering Com.	Email	Monthly	Project manager
Timeline Update	Project Manager	Meetings	As needed	Project manager
Project Updates	ITEC / Exec. Sponsor	Team meetings	As needed	Project Team
Project Risks	OU Steering Com.	Risk Devel	As needed	Project manager

Resource Links	Sharepoint	Core Team Mtg Notes
	ePortfolio	Stakeholder Mtg Notes
	Risk Assessment	Timeline
	User Feedback Surveys	Marketing Docs

	Purpose	Medium	Frequency	Audience
Kickoff meeting	-Introduce project -Confirm objectives, goals, and deliverables needed	-In-person meeting (send video conference link for remote workers)	-Once at start of project	-Project team -Project sponsor -Director of product management -Director of engineering -Additional stakeholders
Project team meetings	-Review status of project	-In-person meeting	-Every Monday @ 9 a.m.	-Project team (PM, UX, engineering)
Check-ins/ meeting recap	-Update interested parties on project status based on notes from project team meeting	-Email	-Every Monday morning	-Project sponsor -Stakeholders
Project status meetings	-Update leadership on project status and give opportunity to ask questions	-Conference call	-Monthly	-Project manager -Project sponsor
UX design reviews	-Give project sponsor the opportunity to provide feedback on app design	-In-person meeting (email with design sent prior to meeting)	-Once after initial UX design complete	-UX designers -Project sponsor

- First off, your communication plan should include what you're communicating on, or in other words, the **type of communication**. This could include things like status updates, issues, feedback from users, daily check-ins, and other types of project meetings.
- Then, you need to identify **who you communicate with**. These are **recipients of the information**, like key stakeholders and the core project team.
- For each type of communication, **record when to communicate**. This includes the frequency, which is how often you'll communicate, and **key dates like deadlines** or major meetings. One thing to keep in mind is that not everyone needs to receive the same amount of information at the same time. Generally speaking, your key

stakeholders will get their information less often, like in a monthly, high-level summary, email, or project review meeting, but your core project team could receive more detailed info through daily email updates or quick virtual check-ins.

- Next, include **how you're communicating** or **what delivery method you'll use**. This could be email, in-person, or virtual meetings, or a formal presentation.
- Your plan also needs to include the **goal of communicating**. This is your "why." So ask yourself: why are you communicating? Is it to give a progress update, identify a risk, and address barriers? Or perhaps you need to figure out next steps, detailed preparation plans, and reflect on lessons learned. The goal of communication could be a combination of any of these or some other reason altogether. In either case, there must be a purpose for communicating, otherwise you risk wasting valuable time.
- Finally, include **where communication resources are located, along with any other notes**. Try to remember that relevant information should be easily accessible. So that you, your stakeholders, and your team can quickly find the resources they need to make decisions, work on tasks, get caught up, or provide updates.

One more benefit to an effective communication plan is that it **allows for continuity of the project's operations**. If a new project manager comes on to the project and sees the plan, they should be able to quickly access past meeting notes and documentation, as well as current and upcoming communications. The communication plan also helps with **effective change management**, the process of delivering your final project and getting it successfully implemented. When others have access to the communication plan after you leave the project, they'll be able to fix any problems that might come up, make decisions, or apply similar processes to a new project.

5.1.4 Developing a communication plan

There are few key benefits to planning your communications up front. **Creating a communication plan** helps:

- improve the overall effectiveness of communication
- keeps people engaged and motivated throughout the project
- gets stakeholders involved in effective conversations.

Let's try building a sample communication plan so you can see how it helps with managing the different aspects of project communication. We'll continue with the Office Green Plant Pals Project.

Here's an example of a **basic communication plan using a spreadsheet**. Before anything else, think about what types of communication you'll be using throughout your project. Feel free to refer back to your RACI chart and stakeholder map, which are tools that will help you figure out what type of communication might work best for each person, group, or role.

In this example, let's say the stakeholders are busy senior executives who may not need day-to-day details. Instead of daily meetings, it's better to send a newsletter that summarizes key milestones and project progress to date.

The core team, on the other hand, may benefit from a daily stand-up, which is a daily meeting designed to bring everyone up to date on key information. Here, each team member

briefly describes any completed work and any barriers that stand in their way. This is common in Agile project management, as it helps the team stay coordinated and move quickly throughout the project. We will go ahead and enter daily stand-ups in this row. But sometimes daily meetings aren't possible, given time zone restrictions or other obligations. Don't worry, there are other ways to keep communication flowing. For example, the project team that created this program had daily email status updates for the whole team to report which action items were being worked on for the day. They also used a project tracker for tasks and milestones to make sure everyone is on the same page.

A Type of Communication	B Recipients	C Frequency	D Key Dates	E Delivery Method	F Goal	G Sender/Owner	H Resource Links	I Notes
Project Newsletter	Key Stakeholders	Monthly	First Monday	Email	Status Update Overview	Project Manager		
Daily Stand-Ups	Core Team	Daily	12pm ET	In Person / Video Conference	Progress Updates, Blockers, Next Steps	Team Lead		
Weekly Check In	Marketing	Weekly	Wednesdays 2pm	Email + Video Conference		Project Manager		
Weekly Check In	Procurement	Weekly	Wednesdays 3pm	Email + Video Conference		Project Manager / Team Lead		
Weekly Check In	Product Development	Weekly	Wednesdays 4pm	Email + Video Conference		Project Manager		

Next up, think about who needs to receive information about your project. These are the communication recipients. It helps to look back to the stakeholder map and RACI chart again. Ask yourself:

- Who needs to be heavily involved in the details?
- Who has high interest in the project?
- Who needs only to be informed of major milestones?

Next up in recipients are the project subgroups for marketing, procurement, and product development. Let's add separate meetings in for each of those groups in addition to the core team meetings. Since those subgroups are not part of the core team, you might only want to meet with them weekly instead of every day. Let's add weekly check-in to each of these.

Another best practice is to list contact information and time zones in your communication plan. That way, you know when people are available for communicating. Let's add that in. Feel free to hide this column since it contains sensitive information about people involved in your project. There are other ways to list contact information privately and link it for easy reference.

If you're having trouble deciding which type of communication to use, one way to help you choose is by thinking about the frequency. As I mentioned earlier, a senior stakeholder probably won't be able to attend daily meetings, and they don't need every piece of information. Instead, you can communicate with a senior stakeholder on a weekly or monthly basis and you can focus on high-level status updates like overall progress, recent wins, or milestones reached, and current metrics. In this case, let's send out the project newsletter once a month. If you're unsure, it's always great to ask senior stakeholders which method of communication works best for them.

When you work with your core team on a project, you need to get into more of the day-to-day details. Check in regularly and ask how everything is going.

- How they're doing on tasks?
- Do they need your help with anything?

Add in a daily meeting for your core team and a weekly meeting for the subgroups. Let's make that happen.

Meeting more frequently can help unblock issues and keep the project on the right track. This leads us to key dates. Listing key dates and times are important for coordination. For example, if you're launching a product or new process or giving a presentation, you should list the key dates. Keep in mind, not every type of communication needs a specific key date listed. For example, with daily or weekly communications, you might not need to specify the actual date every week. You could just list every Monday or something like that. Let's add in key dates to our plan. For the monthly newsletter, let's send that on the first Monday of every month. Let's schedule the daily stand-ups at noon and the weekly check-ins are on Wednesdays at two, three, and four o'clock.

Now let's talk about delivery methods, like email, in-person and virtual meetings, a shared document that gets updated regularly, or a progress report that gets presented. Deciding the best way to communicate is a skill. One thing I continuously need to adapt and work to improve in my role as project manager is communicating among different teams and levels of authority. A director or executive may only have five minutes, so I need to be concise and know exactly what I need from them. Likewise, I might be used to communicating via instant message and video chat with my core team. However, one of the subgroups on the project might respond better to emails and in-document comments. Let me add in these methods for our communication plan, starting with email.

Emails are a very common way to get people in sync, but write too much and you may lose your audience. After all, no one really wants to read a two-page email. One way to get around this is by adding a note at the top of your email. This will alert readers that some details of a long email may not be relevant to them. With this kind of email, lead with key points and action items limited to two to three sentences. Then include a longer section at the bottom for those who want or need additional details. The goal of communicating is getting your point across effectively.

Think carefully about what you need to accomplish with each type of communication. For high-level stakeholders in particular, I'm constantly trying to answer, so what? Why should they care about my project?

The same goes for my core team. What information is going to help make sure they complete tasks on time and stay motivated? Thinking about these questions helps me focus on the most important bits of information to share. Let's fill this in in the communication plan. The goal of the monthly newsletter for stakeholders is to give a status update overview. Goals for the daily stand-ups with the core team would be to report progress updates, blockers, and determining next steps. Let's add those in as well.

Next, you need to make sure you're able to reach everyone you need to communicate with. It helps if communication is a team effort, especially on more complex projects. You shouldn't be the only one communicating. You want to enable other team members to be involved in communications, based on their expertise in the project. I'll add a column for sender and owner to indicate who is responsible for each communication. Then highlight the sender or owner for each of these communication types, starting with the project manager as the sender for the newsletter.

Keep in mind, it's always a good idea to check in with everyone to make sure communications meet their needs. Everyone absorbs information differently; what works best for you doesn't always work best for others. Some people are more visual and want to see charts and graphs. Some people might prefer to listen to information through a presentation or a meeting. Some people may want to review and analyze information on their own first, and then speak with someone about what they've read. If you're only presenting information in just one or two ways, you risk engaging some people but not others.

Your goal as project manager is to optimize and streamline communications. A great way to optimize your communications for everyone on the team is by sending a brief email or survey that asks three questions.

- What is working in how we communicate with you about the project?
- What is not working or is not effective in our communications?
- Where can we improve our communications with you?

This will give you plenty of useful information on how you can adapt the communication style to cater to each team member. Communication plans contain a lot of important information and there are so many different ways to set one up, depending on the size of your team and the needs of your project. Whichever system you choose to use, the most important thing is to make sure your communication plan clearly identifies who needs to be involved in project communication.

5.1.5 Best practices for building a communication plan

In the previous video, you learned how to develop a basic communication plan. You also learned how to document who needs to be involved in project communication, how to communicate with them, why you are communicating, and how often that communication should occur.

In this reading, we will reinforce the top tips to keep in mind when creating a communication plan to ensure that it is an effective tool for you and your project team.

Tips for creating your communication plan

Identify, identify, identify

Before you begin creating the plan, answer these questions to ensure that you have all of the relevant information:

- **Project stakeholders:** Have you created a RACI chart or stakeholder map of all your stakeholders? Who is your audience? Who will need to be informed at different points during the project life cycle?
- **Communication frequency and method:** When and how often should you check in with your stakeholders? What methods of communication do they prefer? How much detail does each stakeholder need?
- **Goals:** What is the goal of your communication? Do you need a response? Are you trying to encourage engagement or simply providing an update?

- **Barriers:** Are there any time zone limitations? Language barriers? Do some stakeholders require time to reply or respond (e.g., an executive)? Are there any privacy or internet access issues?

Document and develop

Choose a tool or template to document all of your communication needs, and begin developing your plan. Once you understand the basic elements (stakeholders, communication methods, goals, and barriers), it's time to work out the details! Here are some tips:

- **Add a column for notes.** Project management is not one-size-fits-all, and there are a lot of pieces that need to be tracked. For instance, if you are reaching out to a senior leader or executive, do you need to copy anyone else on the email? If a stakeholder is out of office or unavailable on certain dates, do you have a backup plan? Add notes to set reminders and any additional relevant details.
- **Use formatting to highlight any key details in the plan.** Is there a launch announcement or an urgent decision needed for the project to move forward? Highlight these pivotal elements in a different font color or size to stress their importance.
- **Ensure that the team can access your document.** Share the plan with your team. Allowing your team to review the document ensures that they are aware of the plan and gives them a chance to offer feedback. Sharing the document also serves as an extra check to make sure you aren't missing any crucial pieces.
- **Test your plan.** If you are sending a team-wide email or link, send a test email to yourself or a colleague. If you are planning a virtual presentation, be sure to test the visual, audio, and other technical aspects in advance. That way, you can minimize any technical problems.

Check in

Once your communication plan is out in the world, check in with your audience about the effectiveness of your plan. Scheduling routine check-ins will help you understand what is and is not working so you can improve your plan. You want to ensure that your communication plan gets the right information to the right stakeholders at the right time. Additionally, make sure to double check that key stakeholders have not changed over time.

Evaluate where you may be over- or under-sharing information or missing stakeholders. You can do this through:

- Anonymous survey forms
- Polls or open feedback sessions during team meetings
- One-on-one conversations and check-ins with key stakeholders

Keep these tips in mind as you build your next communication plan and you will be set for communication success!

Test your knowledge: Effective communication

1. Fill in the blank: Effective communication is clear, honest, relevant, and ____.

- urgent
- frequent
- one-sided
- rare



Regular communication keeps stakeholders up-to-date, but be mindful of information overload.

2. Imagine that a restaurant is hosting a recruitment day to hire delivery drivers. The project manager creates a plan to organize stakeholder communication. The plan indicates the following:

- The team lead updates the core hiring team every day for two weeks prior to the event to report next steps so they each know their daily responsibilities.
- The core hiring team contacts the job candidates the Friday before the event to remind them of the time and location.
- The project manager contacts the venue and caterers the Monday before the event to confirm reservations.

In the above scenario, what three key elements are *missing* from the communication plan?

- Communication risks
- Resource links



While the plan includes details like recipients, dates, and goals, it doesn't include where communication resources will be stored, such as a digital document. Other key elements that are missing from the plan include the type of communication and delivery methods.

- Delivery methods



While the plan includes details like recipients, dates, and goals, it doesn't specify how the team will communicate, such as by email, phone call, or in-person. Other key elements that are missing from the plan include the type of communication and resource links.

- Dependencies

3. Which of the following is a best practice you can use to help ensure that your communication plan is effective for your team? Select all that apply.

- Add a column for notes.



You can add notes to your communication plan to include any additional relevant details and to set reminders. You can also use formatting to highlight key details, share your plan with your team, and test your plan ahead of time.

- Test your plan

 **Correct**

If you are sending a team-wide email or link, send a test email to yourself or a colleague. If you are planning a virtual presentation, be sure to test the visual, audio, and other technical aspects in advance. You should also add a column for notes, use formatting to highlight key details, and share your plan with your team.

- Share your plan with your manager but not your team.

- Use formatting to highlight any key details.

 **Correct**

You can highlight key elements in a different font color or size to stress their importance and include a notes column for any additional relevant details. It's also important to ensure that your team has access to your plan and to test your plan ahead of time.

4. How can you recognize individual differences in your communications? Select all that apply.

- Be mindful of your own biases.

 **Correct**

Everyone has some biases, and you should be aware of yours when communicating with your team members and stakeholders. You should also avoid making assumptions about your audience's background, use professional language, and include diverse points of view when communicating.

- Use appropriate, professional, and neutral language.

 **Correct**

Using professional and neutral language will help to keep your communications inclusive. You should also avoid making assumptions about your audience's background, be aware of your biases, and include different perspectives when communicating.

- Craft your communications based on what you assume about your audience's backgrounds, identities, or experiences.

- Include and respect diverse points of view.

 **Correct**

As a project manager, you should understand and show respect for each team member's perspective. To ensure inclusive communication, you should also avoid making assumptions about your audience's background, be conscious of your biases, and use professional language.

5.1.6 Identify: Communication goals and methods

As project manager for the opening of a new bakery location, you're creating a communication plan. Match stakeholders to goals and decide how (and how often) to communicate with them.

Stakeholder	Communication goal	Communication format
The owner and senior stakeholders	Provide a high-level overview of the project status and its impact	Quarterly presentation, held in person
Customers	Collect data on popularity of new and potential menu items	One-time survey, sent via email with two follow-up reminders
Project team	Discuss project progress, action items, and blockers	Daily planning meeting, via video call
Bakery managers	Coordinate on opening day menu and promotional giveaways	Weekly planning check-in, via phone

5.1.7 Activity: Draft a communication plan

Activity Overview

In this activity, you will create a communication plan to help you manage all the different kinds of communication that happen during a project. Communication plans help you organize recipients, communication frequency, and the types of information you need to share.

Note: When you create a communication plan at the start of a project, don't feel obligated to follow it exactly. Communications should be flexible enough to adapt if and when circumstances change.

Be sure to complete this activity before advancing to the next course item, which will provide you with a completed exemplar to compare to your own work. You will not be able to access the exemplar until you have completed this activity.

Scenario

Review the scenario below. Then complete the step-by-step instructions.

As part of the Plant Pals Operations and Training plan, your team will need to organize and host trainings for employees. You want to make sure that a majority of employees are properly trained to use the new software and equipment before sending the first round of Plant Pals test batches to customers. Because your employees will need to learn several different processes, training sessions will take place over a period of ten days. Your team has just over three weeks to prepare before the sessions begin.

As the Plant Pals project manager, you will work with your team to plan and execute the preparations for the training sessions. One of your tasks is to build a communication plan, which should include:

- **What** you need to communicate (the goal of the communication)
- **Who** needs to communicate
- **When** information-sharing needs to happen
- **Why and how** to communicate with everyone involved

As you begin planning the training sessions, you identify the key teams and stakeholders who will need to communicate about the event:

Core Team: Your core project team will lead the planning and task coordination. These tasks include communicating with stakeholders, preparing the schedule, reserving space and equipment, training the employees, and more.

The team members who are directly involved in organizing the trainings include:

- An **Administrative Coordinator** who is responsible for scheduling and communicating with other Office Green teams (e.g., Facilities)
- A **Human Resources Specialist** who manages hiring and develops training protocols (with the help of the Training Manager)
- A **Training Manager** who reports to the HR Specialist, runs the training program on the established protocols, and refines training processes

The other members of your core project team (the **Financial Analyst**, **Fulfillment Director**, **Quality Assurance Tester**, and **Inventory Manager**) will attend team meetings and are available to pitch in if you need them.

Additional stakeholders with whom your team needs to communicate include:

Software and Equipment Vendor: Members of your team will need to meet with the vendor to learn about the software and equipment so they can create an effective training plan for employees. The team members responsible for creating and running the training program should organize and attend this meeting. Your team should allow adequate time to learn about new processes and ask follow-up questions. This meeting must take place before the end of the vendor's SoW.

Human Resources: The Human Resources department can help your team as they develop the training plan. They will also provide support during the training sessions. Your team will want to communicate with them regularly (but not daily) and on an as-needed basis. The HR Specialist on your team is the point of contact for the rest of HR.

Facilities: Facilities will reserve and manage the spaces and equipment needed for the training sessions. They will need to review the schedule and understand your needs for each session ahead of time. A member of your team needs to keep them updated and informed of any changes to requirements.

Print Shop: The vendor who will install the software and equipment is also creating training manuals for your team. One of your team members will need to coordinate with the print shop to make copies of the manuals for each training.

Office Green employees: You will also need to coordinate with the employees who need to be trained! A member of your team should tell them where they should arrive, where they should go, what they need to bring, and communicate other necessary details. The same team member will also need to conduct the sessions and solicit feedback from employees through a post-training survey.

Your Office Green Manager: Your manager wants to be kept informed of your team's progress but doesn't need to know every detail. They can also be a helpful resource for the planning process, if necessary. You already communicate with them regularly, so you can update them at one of your weekly meetings.

Senior Leadership: Your manager asks you to let senior leadership know about the outcome of the trainings (and to copy them when you do so). The Director of Operations and the Director of Product (the project sponsor) want to be kept informed but don't have much time for meetings.

Step-by-Step Instructions

Step 1: Access the template

To use the template for this course item, click the link below and select "Use Template."

Link to template: [Communication plan](#)

Step 2: Review the communication goals and recipients

The goal and recipient of each communication is already filled out in the template. Review this information and consider the people and teams you need to coordinate. Then try to think of some ways you can effectively communicate about each goal.

Note: *The first line of the communication plan has already been filled in. You can reference this information as you complete the rest of the plan.*

Step 3: Determine communication types

How should you communicate about each goal? What type of communication is best for each recipient? Select one of the following communication types from the drop-down under **Type of Communication**:

- *Planning Meetings:* Standard meetings with team members or stakeholders to plan event details
- *Planning Check-In:* Brief meetings with stakeholders and support staff to discuss action items or check on task progress
- *Training:* Sessions for employees to learn about jobs or specialized tasks
- *Informational update:* Key details, instructions, and resources for trainees
- *Status Update:* Timely project updates for senior stakeholders to get high-level information, give feedback, and answer questions

Note: *You can use drop-down items more than once. For example, you might want to build multiple planning check-ins into your schedule.*

Step 4: Determine the frequency

How often do you need to communicate with each recipient? Consider each stakeholder's level of involvement in the project when deciding how often to communicate. Select one of the following frequencies from the drop-downs under **Frequency**:

- Daily
- Weekly
- One time

Note: You can treat these frequencies as approximate since you'll be able make note of other communications (like day-of reminders) under the **Key Dates** column in **Step 6**.

Step 5: Add the sender or owner

Who from the team should share or communicate about this information? Select one of the following options from the drop-downs under **Sender/Owner**:

- Project Manager (you)
- Core Team: Administrative Coordinator
- Core Team: HR Specialist
- Core Team: Training Manager
- Core Team: HR Specialist & Training Manager

Step 6: Add the key dates

When should this communication happen? Are there important reminders or deadlines you should note? Consider how much time you have to plan the event and when it makes sense to communicate about each goal (e.g., early or late in the day or the week). Enter your selected times under **Key Dates**.

There are no right answers here, but try to be specific about times and dates—and make sure your stakeholders don't need to be in two places at once!

Note: Your stakeholders' schedules will vary, and it's unlikely that they will all be able to make every scheduled meeting. Sometimes, you will need to decide whether you need to reschedule if a key team member can't make it.

Step 7: Determine the delivery method

How will you or your team members share this information? Should you meet in person or over the phone? Should you send a personal email or is a group message more effective? Select your delivery methods from the drop-downs under **Delivery Method**:

- In person
- Phone call
- Email (from individual address)
- Email (from company address)

Note: The best delivery method for each communication depends on the needs and preferences of particular stakeholders. For this exercise, you can use your best judgment.

Step 8 (Optional): Add resources and notes

If you'd like, fill in the **Resources** and **Notes** columns. You can consult the scenario for any important details or come up with your own.

For example, the template includes a link to the meeting agenda and notes for daily team meetings. These documents aren't specifically mentioned in the scenario, but they're useful for any project meeting.

You don't need to complete both of these fields for every communication item. Instead, try to think about what kinds of resources or information can help you reach your communication goals.

2. Fill in the blank: In the communication plan you created, you scheduled _____ to keep your manager informed and get feedback.

- weekly updates
- a one-time meeting
- daily updates

 **Correct**

Your manager is interested in the trainings, but not directly involved, so weekly updates should be enough.

3. In your communication plan, how often does your team communicate with Human Resources while developing the training plan?

- Daily
- One time
- Weekly

 **Correct**

Weekly check-ins are appropriate for communicating with Human Resources.

4. In your communication plan, who is the Sender/Owner responsible for communicating the training schedules, locations, and other details to Office Green employees?

- The Training Manager
- You, the Project Manager
- The Administrative Coordinator
- The HR Specialist

 **Correct**

The Training Manager is responsible for communicating practical information to trainees.

5. In your communication plan, who coordinates with the Print Shop about printing the training manuals?

- The HR Specialist
- The Administrative Coordinator
- You, the Project Manager
- The Training Manager



Correct
The Administrative Coordinator communicates with other teams, like the Print Shop and Facilities.

Completed Exemplar

To view the template for this course item, click the link below and select “Use Template.”

Link to exemplar: [Communication plan](#)

Assessment of Exemplar

Compare the exemplar to your completed deliverable. Review your work using each of the criteria in the exemplar. What did you do well? Where can you improve? Use your answers to these questions to guide you as you continue to progress through the course.

Note: Your communication plan may differ from this exemplar. That's because communication types, frequency, and delivery methods can change depending on the situation, schedules, personal preference, etc. What should always be consistent is your attention to your stakeholders' roles, needs, and communication styles. Learning about your team is crucial to creating an effective communication plan.

Let's examine how the different parts of the scenario fit into the communication plan

Planning Meetings with the Core Team: Since the core team is directly involved in planning and executing the trainings, you want to meet with them daily and in person. The goal is to check in with each member about their progress, troubleshoot any issues, and make sure everyone stays on track. Your manager can also be a planning resource, so you make sure to schedule the team meetings later in the day than your weekly meeting with your manager. You make a note to check in with your manager with questions and link to the meeting agendas and notes.

Software & Equipment Vendor: Since your HR Specialist and Training Manager will plan and run the trainings, they will both need to meet with the vendor. They allow a half-day for this meeting, which will give them time to go over the training manual and ask follow-up questions. You link to the vendor's Statement of Work and make a note to remind the HR Specialist and Training Manager to check in with relevant team members after the meeting.

Human Resources: Your HR Specialist owns communications with the HR department, and checks in with them weekly and in-person for project planning assistance. Since HR will also provide support during trainings, want to send them reminder emails as well. You note that more communications will likely be necessary on an as-needed basis.

Planning Check-ins with Facilities: Facilities needs to know the training schedule and requirements, but does not need daily updates. The Administrative Coordinator checks in with them weekly over the phone (but could also meet with them in person). You link to the forms you need to request rooms and equipment for the training sessions.

Planning Check-ins with the Print Shop: The Print Shop needs to know the details of the event, but you may not need to check in with them every day. The initial planning meeting is the most important, after which weekly check-ins (over the phone or in person) will suffice. Your Administrative Coordinator takes care of these communications. You link to the printing request forms you will use to order the training manuals.

Informational Updates for Office Green employees: You want to communicate with the trainees consistently so they remember when to arrive, where to go, and what to bring. Your Training Manager sends a group email from an official Office Green account each week and sends a reminder the day before each group's training session. That's a lot of messages to keep track of, so you make a note for the Training Manager to automate the reminder emails.

Training for Office Green employees: The Training Manager will also run the in-person trainings, which are scheduled each day for ten days, beginning at 10:00 AM. You make sure to link to the training schedule, so that it's easily accessible.

Survey for Office Green employees: Once the training sessions are complete, the Training Manager will send the trainees a survey via email (with two follow-up reminders). You make a note to discuss the results at the next team meeting.

Status Update with your manager: Since your manager wants to be kept informed of your progress, you decide to update them at your weekly, in-person meeting. You make a note to come prepared with a brief update and specific questions for your manager.

Status Update with Senior Leaders: Since the Director of Operations and the Director of Product want to know how the trainings went, you send them an email update (and CC your manager) once they have concluded. You link to the resources you'll need to create your report.

5.2 Documenting Project Planning Resources

5.2.1 The value of project documentation

Documentation storage and sharing is very important. Having **plans in one place** makes communication **quicker, easier, and more streamlined** because **everyone knows where to find any information they need**. Just as important is making sure your **files are stored with clear labels or organized into folders**. For example, on my team, we have certain reports stored in one central place. This makes it easier for teams in different countries to find and share their research with each other, which optimizes workflow and reduces duplicate work.

Documenting and organizing plans also provides **visibility and accountability**. Your project plan is a great example of this. Each task has an owner and a due date. This creates visibility for the members of the project team and accountability for the task owner.

It's common for members of the team and senior stakeholders to reference your project plan and associated documents when they need a refresher on timelines or milestones. Having up-to-date plans will help ensure there's no room for misinterpretation or miscommunication.

Once you've created a centralized location for your documents, it's time to think about **managing permissions of your files and folders**. If someone isn't a core part of the project team, you might not want them to have full access to all of the meeting notes. Instead, summarize the relevant information into a status report for those who need to stay informed of final outcomes but don't need all background information.

There's another big benefit to setting up your project plans and centralizing them in one place: **continuity**. As the project manager, there could be times when you need to suddenly leave the project. Say you got sick, transferred to another project, or needed to take a leave of absence. Another project manager may need to step in, and if all the project information is scattered across unorganized personal notes, it's not very helpful. But if you documented all the plans in one place, the new project manager can find everything they need and pick up right where you left off.

It's always useful to **store guides, manuals, meeting notes, plans, and processes** all in a **centralized place and clearly labeled**. You'll also want to make sure the people in relevant roles are granted access to those documents. So even if you're not present, the project can carry on. As project manager, it's your job to ensure that project data can be accessed in the future by others. Documenting your plans and making them available is part of a project management best practice called **knowledge management**. If someone needs to review this project for making decisions or planning similar projects, they should be able to easily access the information they need.

It also helps set the tone for future projects and future project managers, which can be incredibly helpful if you happen to be the one jumping onto a new project. For example, if an architect is working on a kitchen remodel and they want to make a decision about the design, they can look at the old project plans to understand why the decision was made to put the sink in a certain location. Or if a new architect comes in halfway through the remodel, they might want to know why the other architect designed the plumbing a certain way. By looking at the old plans, they can go back and get the information and context they need to move forward with more informed decisions.

It's also important to **determine what kind of information to share with whom and when**. Focus on the key information related to what specific individuals need to know. Think about this scenario: a project manager who is working with all the VPs at their company decides to send out daily updates. From a communication standpoint, what could be the potential impact of the project manager's decision? Well, since VPs get lots of emails, they're not likely to read the updates. That ends up being a waste of time for you. Also, when you send a lot of unnecessary information, then it's hard to tell what's really important.

Figuring out the **right information to share** is even more important when you're working on projects that have **sensitive data**. In those cases, you need to be very careful of how you

share information about your project with stakeholders who do not have permissions to view sensitive data. For example, financial data or user survey results are often highly sensitive and should never be made available to unauthorized viewers.

Here's another scenario: let's say your team is working on a high-profile launch of a brand new product, say, an electric car. Most people don't need to know all of the thinking behind the project or see all the draft versions, but they do need to know what the final design will look like. The project is legally sensitive, and you want to avoid leaks and over-sharing classified data. If you share the entire project folder with everyone who needs to know only the end result, you risk doing just that: revealing highly sensitive and classified data. If this information gets leaked to the wrong people, project plans and company data could be made public, ruining the big launch of the electric car. You also risk violating company policy and damaging your reputation as a trustworthy and responsible project manager. Only share information on a need-to-know basis. It's your job to **present the right information at the right time to the right people**.

Let me show you an example. In this sample communication plan, one of the resources is user feedback surveys. This resource contains raw data collected from surveys submitted by Plant Pals test users, which means it has **personally identifiable information** or PII. PII is anything that **possibly reveal someone's identity**, like a screen name, password, phone number, e-mail address, first or last name, anything like that. For that reason, only share that resource with the members of the project team who are approved to access this level of information. Then if anyone else tries to open the document, they will be alerted that they need to request permission to access it. If you need to share results of these surveys, those can be presented in a graph, chart, or summarized in a report without any PII included. Then you can share that information with the broader team.

5.2.2 Organizing project documentation

Organizing your project plans makes everyone's job **easier** and **eliminates opportunity for confusion**. As a project manager, your goal is to have all of your **project resources documented and linked in a way** to where you or anyone on the project can access what they need quickly. A couple of handy ways to **get organized** are **using a shared file drive**, like **Google Drive**, and **creating one resource like a document or spreadsheet that links all of the files and resources** that your project uses.

You can also stay organized by **creating a centralized planning document that links everything together**. This can serve as a quick reference guide that you can use to find all your frequently accessed files in one place.

If your project uses multiple spreadsheets and you want to avoid having to open lots of separate files, you can **group them within one sheet** like this. This sheet has tabs for all the other sheets that contain project information. You can add a new sheet at any time. It's helpful to include an overview sheet and link any non-spreadsheet files. This is also a good place to provide a brief description of the project, instructions for how to use the sheet, or communication expectations.

5.2.3 Activity: Organize documents in a project plan

Activity Overview

Congratulations! You've come a long way and worked hard to complete all of the individual project planning documents, also known as project artifacts, in this course. In this activity, you will gather those documents and compile and organize them in one central place—your project plan. Having your documents in one place makes communication quicker, easier, and more streamlined, so everyone can find the information they need.

Be sure to complete this activity before moving on. The next course item will provide you with a completed exemplar to compare to your own work. You will not be able to access the exemplar until you have completed this activity.

Scenario

Review the scenario below. Then complete the step-by-step instructions.

As the project manager for Office Green's Plant Pals Operations and Training plan launch, you want to keep all your planning documents organized in a central location. That way, you can easily share information and track the status of the project's many moving pieces. Your project folders and labels should be clearly organized to provide visibility, continuity, and accountability.

A project plan is not only useful for streamlining team communications, it can also help you with retrospectives and planning for future projects.

Step-by-step Instructions

Step 1: Access the template

To use the template for this course item, click the link below and select "Use Template."

Link to template: [Project plan](#).

Step 2: Add project details

There are four tabs at the bottom of the template: **Dashboard**, **Project Schedule**, **Budget**, and **Communication Plan**. First, go to the **Dashboard** tab. You'll use this tab to provide a brief overview of the project and link to key project documents.

In the topmost section of the **Dashboard**, fill in the following information as indicated in the template:

- Project name
- Project description
- Project owner (You can use your name, make up a name, or simply write "Project Manager.")
- Project status (mark the status as *Draft* for now)

Note: Leave the descriptions of the **Key Docs** blank for now. You will fill them in once you complete the rest of the document.

Step 3: Gather project documents

Next, gather your main project documents from the activities in this course:

- Gantt Chart
- Project Budget
- Communication Plan
- Statement of Work
- Risk Management Plan

Optional: Gather your finished documents from the following activities in the previous course, [Project Initiation: Starting a Successful Project](#):

- Project charter
- RACI charts

Step 4: Add the documents to their respective tabs

Copy your completed Gantt chart, budget, and communication plan to the following tabs of your project plan:

- The Gantt chart spreadsheet should become the **Project Schedule** tab.
- The budget spreadsheet should become the **Budget** tab.
- The communication plan spreadsheet should become the **Communication Plan** tab.

If you are using [Google Sheets](#), we recommend using the *Copy to > Existing spreadsheet* function:

1. Open both your project plan and your source sheet (the spreadsheet you want to copy—e.g., your Gantt chart).
2. Copy your project plan URL.
3. Go to your source sheet and find the tab at the bottom (e.g., for your Gantt chart, this is the tab labeled “Gantt chart”).
4. Click the down arrow on the tab and select *Copy to > Existing spreadsheet*.
5. Paste the project plan URL into the bottom of the box that appears.
6. Choose *Select* to copy the source sheet into your project plan.
7. The copied sheet will appear as a new tab at the bottom of your project plan. You can then delete the blank tab (“Project schedule,” “Budget,” or “Communication plan”) and rename the newly copied tab.

For **Microsoft Excel** or other **spreadsheet software**, you can drag a spreadsheet tab from one spreadsheet to another:

1. Arrange your spreadsheets so that both your project plan and your source spreadsheet (e.g., your Gantt chart) are side-by-side. (You may need to resize them first.)
2. Click the tab at the bottom of your source spreadsheet and drag it to the tab bar of your project plan.
3. The copied sheet will appear as a new tab at the bottom of your project plan. You can then delete the blank tab (Project schedule, Budget, or Communication plan) and rename the newly copied tab.

You can also [copy](#) all the cells of the source spreadsheet and then paste the content into the relevant tab in your project plan.

Step 5: Optional: Add hyperlinks to the Dashboard tab

Next, you can add hyperlinks to your project plan tabs and other documents to the **Key Docs** section of the **Dashboard** tab. Creating links to the main documents in your project plan lets your team access them quickly and easily.

Note: If your project documents are not in the cloud or online, you won't be able to link to them, and are not expected to do this step.

If you're using Google Drive, follow these steps to [hyperlink](#) your **Project Schedule**, **Budget**, and **Communication Plan** tabs to the **Dashboard**:

1. Under **Key Docs** in the **Dashboard** tab, select the cell with the name of the document you want to link (e.g. "Schedule").
2. Go to *Insert* and select *Link* (or select the *Insert link* icon from the toolbar).
3. Choose *Sheets in this spreadsheet* and select the name of the tab you want to hyperlink.
4. Select *Apply* to link the tab.

To add hyperlinks to your Statement of Work, risk management plan, project charter, and RACI charts:

1. Copy the URL for the document you want to link.
2. Select the cell that matches the document you want to link (e.g., "Project charter").
3. Select *Insert link* and paste the URL.
4. Select *Apply* to link the document.

If you want to create a shared folder so you can link to all your files, create a central folder on [Google Drive](#), or any other file sharing program (e.g., [Microsoft](#), [Dropbox](#) or [Mac](#)). Then, add the documents to the shared folder and generate a hyperlink to the **Key Docs** section of the **Dashboard**.

Step 6: Add descriptions

In the **Dashboard** tab, write a short description of each document under **Description**. (Do this even if you haven't created hyperlinks to your project documents. Your descriptions should be brief, but specific, so your stakeholders know exactly what each document contains.)

Note: Be sure to adjust the sharing settings for your project documents and folders. To learn how to change sharing settings in Google Drive, visit [this resource](#).

Step 7: Save your project plan

Save your completed project plan to your computer or Google Drive. You'll need it again in the next course, [Project Execution: Running the Project](#).

Completed Exemplar

To view the exemplar for this course item, click the link below and select “Use Template.”

Link to exemplar: [Project plan](#)

Assessment of Exemplar

Compare the exemplar to your completed project plan. Review your work using each of the criteria in the exemplar. What did you do well? Where can you improve? Use your answers to these questions to guide you as you continue to progress through the course.

Project details in the Dashboard tab: The Dashboard includes a project title, project description, project owner(s), and status. These details help you, your team, and your stakeholders keep track of the project. The **Key Docs** may optionally include hyperlinks to each project resource. Organizing documents in this way can make it easier to search for important information. It also helps your team keep track of project deadlines, tasks, and key project goals.

Document description: The Dashboard includes brief, but specific, descriptions of each document. These descriptions provide context and help team members navigate the project plan.

Document tabs: The project plan includes tabs for all the main project documents. These tabs give your team easy access to important project files.

(Optional) Shared folder: The Dashboard tab may link to a shareable folder that contains all the project documents. This folder acts as a central resource for your team and important stakeholders.

Accessibility: Team members and stakeholders can access linked documents as Viewers or Commenters.

Remember, your project plan is a living document. You will update it regularly through the course of a project. You will add more documents and tabs as needed. You will also review your project plan regularly to make sure it is well-structured and organized for your team.

Congratulations on completing your project plan. You’ve demonstrated critical project management skills by creating effective project documents and organizing them in a centralized plan. Your work in this course will help you demonstrate your new skills to potential employers.

5.3 Preparing For A Job Search

5.3.1 Documenting experience in a resume

Job searching, whether it’s your first time or your tenth, is a common but unique experience. Whether you’re looking for an entry-level position, considering a career switch, or re-entering the workforce after a hiatus, you need a **resume**. Your **resume will be a key**

document throughout your job search. It's how recruiters can get an initial sense of who you are as a potential employee and so it's really important to pay attention to the information on it.

Most resumes share many of the same core elements. These are your **contact information, previous work and educational experience, and skills**. Documenting your experience in a resume gives you the opportunity to stand out to a potential employer. Not only do you get to list your past and current experiences, but you get to highlight your accomplishments as well.

Let's break down the elements of a strong resume.

Most resumes start with **contact information**. At the top of your document, you'll include your name, email address, and other relevant contact information you would wish to include, like a phone number or address.

Many resumes also include a brief 1-3 sentence **summary** of your experience. This summary is referred to as an objective, or sometimes, as a profile summary. For example, an objective might sound something like, "A passionate and customer-center focused individual with three years of experience launching new products and managing processes." It's generally considered optional to add an objective or profile summary to your resume. Some recruiters like them while others don't think they're necessary. An objective or profile summary can be helpful however, if you're looking to change careers and want to highlight transferable experience to a recruiter.

Next step is the central element of most resumes, your **current and previous experience**, whether **work or education** related. When listing your work experience you'll include your current or previous employers and job titles, and for each job, you'll also include start and end dates and 2-3 bullet points explaining your job responsibilities and accomplishments. Your educational experience isn't just high school or college, they can include online degrees, certificates and other professional development you've completed.

Finally, you may choose to include **skills**, especially those that are relevant to the project management roles you're applying to. As we've discussed earlier, some core skills that project managers possess include: enabling decision-making, communicating, flexibility and strong organizational skills. I'd add that it also includes skills like: ability to manage tasks effectively, work well with others, follow through on tasks, and hold teammates accountable. It could also include industry knowledge, like experience with digital tools or work management software. You can highlight these skills and more on your resume, either listed out in a dedicated skills section or incorporated into your section on current and previous experience.

Another great skill that some people forget to add are **additional languages** spoken. If you have a high level of fluency in another language, it's definitely worth mentioning.

Another way to show our skills is to mention **hobbies** on your resume, like volunteer work or experience working in your community. Sometimes listing hobbies that speak to your interests and background can say a lot about you, and that can be helpful to a hiring manager. In addition to highlighting what you're passionate about, many hobbies also require skills that a project manager can use on the job. For instance, some hobbies I see on a

resume: coaching a youth sports team or teaching an art class, may tell me you're able to solve problems and connect with people. Things like that really stand out to me because they show that you're someone who has interests beyond their career. Including a broad variety of items on your resume can help show that you're excited about learning new things outside of work.

Personally, I think this makes for an incredibly interesting candidates, and these are the kinds of qualities we look for when hiring program managers at Google. We're always looking for people who can bring new perspectives and life experiences to our teams. Google's culture is diverse and inclusive, and we look for people who are open to learn new things and are great collaborators. This is especially true in project and program management.

We look for candidates who are open to trying new things because sometimes your first attempt at something may not go as planned and you'll need to try a different tactic. We look for people who can effectively collaborate with other teams outside their own project teams to help everyone reach their goals.

As you can see, a strong resume can really help you tell a powerful story about yourself. Providing a full picture of who you are, what your strengths are, and what you're passionate about.

Before I wrap up, it's important to note that a resume isn't the only way to document your abilities, you can also use online communities like LinkedIn as an additional tool to increase your opportunities. The same details on your resume should be stressed in your LinkedIn profile. Additionally, recruiters and hiring managers use LinkedIn to scout for talent, view a candidate's professional journey and gain insights to skills, networks, professional associates, things that may not have been included in the typical resume. A recent survey showed that 90 percent of recruiters use LinkedIn to search for qualified job applicants.

Once you document your experience, you can begin to search for and apply to jobs at companies. You want to get it right on paper before you have the next conversation. You'll have the opportunity to continue building this skill in the associated readings and activities. Take advantage of these resources and polish or create that new resume.

5.3.2 Tailoring a resume for project management

As you prepare for your job search, you will need to create or update your resume to reflect your experience in order to apply for project management roles. You have learned so much during this course, and it is important that your resume reflects that. An effective resume highlights your skills and experience and is tailored to the position you are applying for. Let's explore how to make your resume stand out by incorporating your new project management skills and your previous experience.

Tailor the content

- **Identify what is important to the potential employer.** What does the employer want to know about you? Make sure that you carefully read the job description and notice which skills are mentioned. You can also read several job descriptions for the same type of role to identify which skills and requirements show up frequently. For

instance, although specifics will vary by role and employer, many project management-related roles require the ability to effectively organize and coordinate across teams and projects, manage multiple tasks simultaneously, and communicate effectively. You should take note of these skills and be sure to highlight them using similar terms on your resume.

- **Create one master project management resume to edit and tailor to each job application.** You should make sure that the order of your skills and qualifications matches the job description. In doing this, you are making sure that the things that are most important to the employer are at the top.
- **Match the language used in the job description.** Some employers use automation software to filter resumes. If the job description uses keywords like *procurement* and *risk management*, make sure your resume uses those keywords, too.
- **Use project management terminology.** This will help the person reading your resume understand how your past experience is relevant to a project management position.
- **Decide what not to include on your resume.** You may have some skills that are important to you, but those same skills may confuse or distract the hiring managers reading your resume.
- **Highlight how your past experience and skills are relevant to project management.** If you have been working as a construction foreman but want to begin managing construction projects, your planning and staff management skills will be essential in your new role. Make sure to point out how those skills will be beneficial to the employer.

Choose an appropriate format

No matter what layout or template you choose for your resume, there are several things you should keep in mind

- The design of your resume should be simple and easy to understand for both human and artificial intelligence readers. You don't want your resume to be discarded before a real person has a chance to read it!
- Your resume should be easy to read and should convey all of the important information in short bullet points.
- Your resume should be one- to two-pages long and contain only the last ten to fifteen years of relevant experience. It is appropriate to use two columns on a one-page resume, but if your resume is two pages, be sure to use the entire width of the page.

Update the relevant sections

Once you have determined the appropriate format for your resume, you will need to update each of your resume's major sections, which include:

- Contact information
- Professional summary
- Core competencies
- Professional experience
- Education and certifications

Pro tip: Resumes should be written in the third person and should not contain personal pronouns.

Let's discuss how to incorporate your new skills into these sections of your resume.

Contact information

Your header should contain your contact information and should go at the top of your resume.

Your header should include the following information:

- Your name in a larger font than the rest of your resume
- The city and state you live in (you do not need to include your street address for privacy purposes)
- Your phone number and a link to your email address
- Link to your LinkedIn profile URL
- Links to any other personal websites or portfolios, if applicable to the role you are applying for

Your header should be relevant, simple, and easy to read. Here is an example of a resume header:



Professional summary

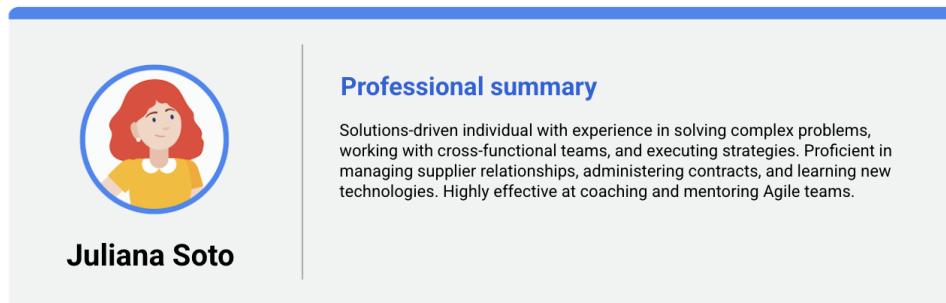
Below your header, include a professional summary.

- **Use your summary to set the tone.** Your summary should be one to three lines and should clearly state why you are the best candidate for the position. It should highlight the most important things you want the reader to know about you. If you are applying for a new role, you will want to update your industry specialty. You likely have experience that can be related to project management, and you will want to incorporate that relevant experience into your new professional summary. Make sure you tailor your description of yourself to the role you are applying for.
- **Merge the description of the role you are applying for with your past experience.** Here is an example:
- Project manager with two years of demonstrated success in a project scoping and planning. Skilled in cross-functional collaboration and project execution. Articulate communicator who thrives in a results-driven collaborative environment.

- **Use keywords from the job description to describe yourself.** If the job description states that the company is looking for a candidate with knowledge of both traditional and Agile approaches, you should add that to your resume—you have gained that knowledge with this certification.

Once you have your professional introduction, your next sentence should explain how your unique expertise will make you valuable to the employer.

Pro tip: Don't forget to use this section to highlight something that makes you stand out from other applicants. Use an accomplishment from a previous role to show the employer what you can offer them. Take a look at this example of a professional summary section:



A screenshot of a resume section titled "Professional summary". On the left, there is a circular profile picture of a woman with red hair and a yellow top. Below the picture is the name "Juliana Soto". To the right of the name is the title "Professional summary" in blue. Underneath the title is a paragraph of text describing Juliana's experience and skills.

Professional summary

Solutions-driven individual with experience in solving complex problems, working with cross-functional teams, and executing strategies. Proficient in managing supplier relationships, administering contracts, and learning new technologies. Highly effective at coaching and mentoring Agile teams.

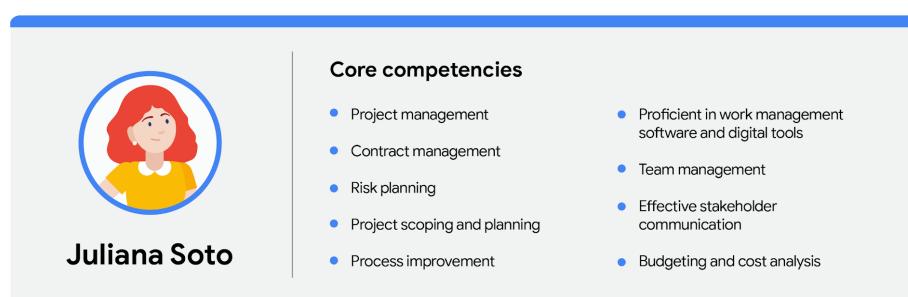
Solutions-driven individual with experience in solving complex problems, working with cross-functional teams, and executing strategies. Proficient in managing supplier relationships, administering contracts, and learning new technologies. Highly effective at coaching and mentoring Agile teams.

Now that you have your heading and professional summary updates, let's move on to the core competencies section of your resume.

Core competencies

Your core competencies should be a bulleted list of the most relevant skills applicable to the position you are applying for.

Pro tip: Scan the job description for core competencies you have gained during this certification, as well as your past experience, and use those skills as bullet points in this section. Make sure to keep this section relatively short, with four to eight bullets. Here is an example of a project management resume core competencies section:



A screenshot of a resume section titled "Core competencies". On the left, there is a circular profile picture of a woman with red hair and a yellow top. Below the picture is the name "Juliana Soto". To the right of the name is the title "Core competencies" in bold. Below the title is a bulleted list of ten skills, grouped into two columns.

Core competencies

- Project management
- Contract management
- Risk planning
- Project scoping and planning
- Process improvement
- Proficient in work management software and digital tools
- Team management
- Effective stakeholder communication
- Budgeting and cost analysis

Project management Contract management Risk planning Project scoping and planning
Process improvement

Now that you have highlighted who you are and what makes you the best candidate for the job, it is time to tell the story of what you have accomplished throughout your career in the professional experience section.

Professional experience

The professional experience section of your resume provides a summary of the roles and positions you have held in your career. List at least three positions in reverse chronological order and only include what is most relevant to the position you are applying for.

Your professional experience will not change much from previous resumes, because you can't change the past roles you have held. However, you can possibly rewrite some of your bullets to relate them to project management. For example, let's say you worked as a retail store general manager for the last five years and would like to transition to a project manager role at the corporate level. You might include bullets like the following examples:

- Managed five employee schedules and store budget of \$50,000
- Led a team of ten employees and received "Store of the Year" award
- Planned, procured, and reconciled inventory shipping and receiving

Make sure you are tying the industry lingo back to your previous experience to show the reader—usually a hiring manager—how your skills relate to project management. Use terms like *developed*, *tracked*, *managed*, and *monitored* to show the reader that your past experience translates to a project management role.

Pro tip: Make sure your resume conveys how your past accomplishments are valuable to the role you are applying for. Show the reader how you can make a difference in their organization. An easy way to remember this is through the P.A.R.I.S. framework:

- Problem that needed to be solved
- Action(s) I took
- Result of action(s)
- Impact on project (users, quality, etc.)
- Supporting evidence (awards, bonus, etc.)

Below is an example of a professional experience section from a project manager's resume:



Juliana Soto

Professional experience

Operations Manager, Auto-WNN Company, New York, NY
(December 2019 – Present)

Oversaw the end-to-end development of a training program to address attrition rates within the first two months. This resulted in 100 new employees onboarded with 95% satisfaction and a reduction in training time by 10% year-over-year

- Led task force of five people to create and test materials within 3 month period
- Managed annual operating budget of \$100,000 as well as \$50,000 vendor budget
- Implemented work management software to plan project and communicate daily tasks to 20+ employees

Teacher's Assistant, NY Locals, Greenpoint NY
(August 2017 – December 2019)

- Supervised 50 classes of 30 high school students
- Mentored students in groups and one-on-one on college prep and personal development
- Created weekly lesson plans, annual budget reports, and homework packets, which averaged a 98% completion rate

Education and certifications



Juliana Soto

Education and certifications

Google Project Manager Certificate, 2020
KC Community College, B.A. in History, Central, IL 2018

Now that the majority of your resume has been updated with your new skills and knowledge, it is time to update your Education and Certifications section. In this section of your resume, you should include any degrees beyond your high school diploma in reverse chronological order. For each degree, list the degree you earned, institution, location, and date of graduation. This section should also list any professional certifications or credentials you hold. It is here where you will list this new project management certification. Here is an example of an education and credentials section of a project management resume:

Google Project Manager Certificate, 2020 KC Community College, B.A. in History, Central, IL 2018

Your resume is now updated and ready to use for project management position applications! You have revised your professional summary, added newly-acquired core competencies, related past professional experience to project management, and added this certification to your resume.

Pro tip: It is always a good idea to have someone review your resume for any spelling or grammatical errors. Recruiters and hiring managers often toss resumes aside that contain typos. Once you are sure your resume is error-free, it is time to start your job search!

5.3.3 Activity: Get started on your project management resume

Activity Overview

In this activity, you will start writing a professional resume that will position you for future project management roles. Getting a job in project management begins with a solid resume that highlights your skills and accomplishments. When complete, you should have a 1-2 page resume you can use in your job search. As you move through the program and learn more about project management, be sure to update this resume to include your new skills and experiences.

Be sure to complete this activity before moving on. The next course item will provide you with a completed exemplar to compare to your own work. You will not be able to access the exemplar until you have completed this activity.

Step-By-Step Instructions

Step 1: Access the template

To use the template for this course item, click the link below and select “Use Template.”

Link to template: [Project Management Resume](#)

Step 2: Find a job description that interests you

For this activity, you will need to refer to the [Tailoring your resume for project management](#)

reading. Keep it open as you fill out the sections of your resume.

Before creating your resume, think about the kind of position you want. Project management skills are used in nearly every industry, so spend some time thinking about where you want to apply your skills.

Next, find a job description that interests you. Review it carefully and highlight some of the qualities the employer is searching for. For example, “detail-oriented,” “collaborative,” “strategic,” and “creative” are all qualities that could appear in job descriptions. Be sure to use some of these keywords in your resume so the company understands how you can meet their needs.

Review the **Tailor the content** section of the reading for more information on how to connect your experience to the job description.

Step 3: Create your project management resume

Now that you’re familiar with the job description, it’s time to start writing your resume. Refer to the reading for detailed instructions on how to fill out the following sections of the template:

- Contact information
- Professional summary

- Core competencies
- Professional experience
- Education and certifications

Step 4: Proofread and format your resume

Finally, proofread your resume for spelling and grammatical errors. You can adjust the template as needed, but make sure it's easy to read. Websites like resumeworded.com or enhancv.com can help you find a template style that works for you.

Completed Exemplar

To view the exemplar for this course item, click the link below and select "Use Template."

Link to exemplar: [Project Management Resume](#)

Assessment of Exemplar

Compare the exemplar to your completed resume. Review your work using each of the criteria in the exemplar. What did you do well? Where can you improve? Use your answers to these questions to guide you as you continue to progress through the course.

Let's review each of the resume elements:

Contact information: The resume includes your name, location, phone number, and links to your email address, professional social media account, and website (if you have one).

Professional summary: A short summary of one to three sentences that clearly states why you are the best candidate for the position. It should highlight the most important things you want the reader to know about you.

Core competencies: A bulleted list of the most relevant skills related to the position you're applying to. For example, Sophie helped run events at a bookstore and communicated that as "event planning and oversight."

Professional experience: A list of at least three of your past positions in reverse chronological order and descriptions of your responsibilities and accomplishments. They should be tailored to the job description and highlight concrete results using the P.A.R.I.S. framework. For example, Sophie coordinated events at the bookstore and wrote, "Coordinated weekly readings and other events, including author communication, marketing and social media, stock ordering, event setup and breakdown; events increased average revenue by ~27% on event days."

Education and certifications: Any degrees you hold and the Google Project Management Certificate.

Format and clarity: The formatting is clear and consistent and the resume is easy to read.

5.3.4 Activity: Create or update your professional social media profile

Activity Overview

In this activity, you will create or update a professional social media profile (LinkedIn) to prepare you for your job search. Prospective employers will check out your online presence, so your professional profile is as important as your resume. This profile should highlight the same project management experience and skills as your resume, with a few key differences. As you move through the program and learn more about project management, you should update this profile to include your new skills and experience.

Be sure to complete this activity before moving on. The next course item will provide you with a completed exemplar to compare to your own work. You will not be able to access the exemplar until you have completed this activity.

Step-By-Step Instructions

Part 1 - LinkedIn Essentials

Step 1: Create a LinkedIn account

If you don't already have one, sign up for a [LinkedIn account](#). Be sure to use an email address that's appropriate for professional communication.

Step 2: Upload a photo

Your photo can be a company headshot or a personal snapshot. Just make sure it's not too informal or inappropriate. This photo will be your introduction to recruiters, and you want to make a good impression. When taking or selecting a photo, aim for the following criteria:

- Your face should fill the frame and be well-lit.
- You should dress as you would for work.
- Your expression should be relaxed and approachable—in other words, someone recruiters want to get to know.

Step 3: Write your headline

Your headline is the most prominent part of your profile, aside from your name. You can use your current job title here, but many people get creative with their headlines. You can use it to highlight your skills or describe your professional passions. Explore the profiles of other project management professionals to find inspiration.

Step 4: Write your “About” summary

The “About” section is similar to the professional summary of a resume, but it differs in two important ways:

- It can be (slightly) more general. Instead of tailoring your profile to a single job, search multiple job descriptions for keywords and patterns to include. Recruiters from

many companies and industries will review your profile, so you don't want to limit yourself.

- It can expand on your skills or tell a story. Your "About" can be a little longer than your professional summary. Use it to highlight your passions and skills—don't be afraid to talk about yourself!

Step 5: Add your experience

Enter your work experience, including title, company, dates worked, and relevant accomplishments for each role. These should be similar to your resume bullets and use the P.A.R.I.S. framework (**problems** that needed to be solved, **actions** taken, **results** of those actions, the **impact** on the project, and any **supporting** evidence). As with the "About" section, you should adapt your bullets to accommodate multiple job descriptions.

Step 6: Enter your education

Include any degrees you hold, along with the institutions (your graduation date is optional). You can also add classes in relevant subjects and any capstone projects you completed. Listing activities or clubs you participated in can let recruiters know what's important to you.

Step 7: Add your skills

Don't forget to include any skills that highlight your strengths, talents, and proficiency in specific tools. These can be both technical and interpersonal skills.

Step 8: Add your credentials and certifications

Add any relevant credentials or certifications you may hold—including this one, which you can enter as "Google Project Management Certificate, expected [Month], [Year]." (**Note:** select a date format commonly used in your location.)

Part 2 - Optional Elements

Now that you've completed your basic profile, consider including these optional elements:

Step 1: Link to your portfolio

You may think portfolios are only for writers or designers, but project managers can also showcase their work through portfolios. A good portfolio outlines the projects you've managed, artifacts you've created (if they are not confidential), your approach to problem-solving, and the positive outcomes of your work. If you have a portfolio, consider linking to it here.

Step 2: Add your volunteer work

Don't underestimate the value of volunteer experience! It's often a great way to get experience and demonstrate your project management capabilities. List any relevant volunteering you may have done and explain how you used your project management skills for good.

Step 3: List your awards and honors

If you've received any professional awards or honors for your work, add them to your profile.

Step 4: Add your professional organization affiliations

Professional organizations can be great networking tools, so be sure to list your current affiliations.

Step 5: Add the languages you can speak and write

If you can speak or write more than one language, don't forget to include them. Language skills can be valuable to future employers.

Step 6: Ask for recommendations and testimonials

Ask colleagues to write testimonials that promote your skills, talents, and accomplishments. A personal recommendation can go a long way!

Step 7: Upload a background photo

In addition to your headshot, you also have the option to upload a background photo. A background photo is a great way to tell recruiters a bit more about yourself.

Step 8: Upload a video

If you're good with a camera, a short video introduction is another option to engage people who visit your profile.

Completed Exemplar

To view the exemplar for this course item, click the link below and select "Use Template."

Link to exemplar: [Professional profile](#)

Assessment of Exemplar

Compare the exemplar to your completed profile. Review your work using each of the criteria in the exemplar. What did you do well? Where can you improve? Use your answers to these questions to guide you as you continue to progress through the course. Let's review each of the profile elements:

Photo: Your profile photo should be professional, well-lit, and approachable.

Headline: Use your headline to highlight your skills or describe your professional passions. In our exemplar, Sophie uses, "Program Management Wizard." How creative you can get varies by industry, so be sure to do your research!

About/summary: Similar to a resume summary, this section should showcase your passions and skills. In our exemplar, Sophie writes, "I enjoy finding creative solutions" to highlight their out-of-the-box thinking.

Experience: A list of past positions, responsibilities, and accomplishments that tell recruiters what you can do. At the bookstore, Sophie “coordinated weekly readings and events, including author communication, marketing and social media, stock ordering, event setup and breakdown; events increased our visibility in the community, and increased store revenue 27% per event day.” Experiences like these often translate to project management, so don’t forget to include them.

Education: Any degrees you hold, including institutions and graduation dates, if you choose.

Skills: A list of skills that demonstrate your strengths, talents, and proficiency in specific tools. Sophie lists skills like innovation and problem-solving, along with WordPress and SQL.

Credentials and certifications: Remember to include your Google Project Management Certificate!

5.3.5 OKRs for personal and professional development

As you prepare for a new career in project management, it’s also a great time to set some personal OKRs (objectives and key results) to track your progress towards achieving your own personal goals.

OKR Review

OKR stands for objectives and key results. They combine a goal and a metric to determine a measurable outcome.

Objective	Key Results
Defines what needs to be achieved	The measurable outcomes that objectively define when the objective has been met
Describes a desired outcome	

Benefits of setting personal OKRs

Many of us set New Year’s resolutions each year, only to find that by February, we are not much closer to accomplishing those goals than we were on January 1st. Setting personal OKRs is a strategy that can help you define clear, measurable goals for yourself and create an action plan for achieving them. Just like with company- or project-level OKRs, setting personal OKRs can turn vague and ambiguous goals into quantifiable and measurable metrics. Whether it’s a personal fitness goal, a desire to spend more time with your family, or a goal to complete this certificate program, setting personal OKRs for these goals can make it easier to track their progress and determine when you’ve achieved them.

Write your own OKRs

Follow the steps outlined below to help you craft your own personal OKRs. You can use this [OKR template](#), or if you don't have a Google account, you can download the template directly from the attachment below.

Define your “why”

Before you start on your objectives—your “what”—consider your “why.” This is your mission. Why are you setting goals? For example, if you have a goal to complete this course, why is that important to you? Write that down and use it to inspire and focus your objectives.

Determine your “what”

Brainstorm possible objectives

Now that you have a clear sense of why these goals are important to you, you can start drafting your objectives. Think about the things you most want or need to accomplish in the next 30–90 days.

To help you generate a list of possible objectives, consider the following:

- What are the most important things I need to get done?
- What do I need to take action on?
- What do I need to start doing or changing?
- What do I want to improve or work on in my life or career?

Based on your responses to these questions, brainstorm a list of 3–5 possible objectives that relate to your mission.

Refine your objectives

Review your list of possible objectives and revise them to make sure they meet the following criteria:

- **Aspirational:** Is the objective inspiring and motivational? Does it ask you to challenge yourself and accomplish something you haven't before?
- **Aligned with organizational goals:** In this case, YOU are the organization, so your objectives should align with the mission you defined earlier. Does the objective help you in achieving your overall goals?
- **Action-oriented:** Does the objective indicate making a change or taking action?
- **Concrete:** Is the objective clearly stated? Would someone else understand what the objective is hoping to accomplish?
- **Significant:** Will achieving the objective make a significant impact toward your personal or professional development?

Mission: Be an ideal candidate for promotion or hire.

Objective: Deliver engaging presentations

Objective: Increase my work pace

Objective: Learn new skills and practices beyond the job description

Develop the “how”

Next, it’s time to add key results, which describe how you’ll achieve your objective. They also define what it means to successfully meet your objective.

Draft and refine your key results

Working with one objective at a time, brainstorm a list of 2–5 key results. To help you generate your list, consider the following:

- How would you define success for this objective?
- What metrics would prove that you’ve successfully achieved the objective?

Once you have a few key results, review and revise them so they meet the following criteria:

- **Results-oriented**—not a task: Do the key results state the overall outcome, rather than individual steps to get there?
- **Measurable and verifiable**: Do the key results include specific, objective metrics?
- **Specific and time-bound**: Have you clearly defined what needs to happen and by when?
- **Aggressive yet realistic**: Do the stated results stretch you but still account for potential challenges or unexpected events that could arise?

Key Results:

Attend a public speaking workshop by the end of the 1st quarter.

Watch at least one TEDTalk per week.

Deliver one presentation every two months and collect feedback.

Key Results:

Block out 90 minutes each day to work on top-priority tasks.

Delegate items to other team members to focus my time on higher priority tasks.

Take on one additional project this quarter while maintaining the same number of work hours.

Key Results:

Earn one more relevant additional certifications before the end of the 1st quarter.

Attend three networking events and schedule two coffee or lunch meetings per month with potential mentors.

Improve industry knowledge by attending 1 new workshop, conference, or presentation each month.

Creating OKRs can be an empowering way to take ownership of your goals and find meaning in your personal and professional life. Start by defining your mission, or the overall reason for creating goals and why they're important. Then determine your objectives, or what you want to achieve. Then, develop key results that will make it clear how and when you've made progress and achieved success.

For more on writing and refining your OKRs, check out these resources:

- [Using OKRs for Professional Development](#)
- [John Doerr's Ted Talk: Why the secret to success is setting the right goals](#)
- [OKRs and SMART goals: What's the difference?](#)

Weekly Challenge 5

1. As a project manager, you create a communication plan for a project. You need to identify potential barriers.

Which of the following questions should you ask to identify a potential barrier?

- Will daily check-ins be required?
- Are there any privacy or internet access issues?
- Will the stakeholders like the project team members?
- How was the project RACI chart created?

 **Correct**

2. How can you foster effective communication within your team? Select all that apply.

- Recognize and understand individual differences

 **Correct**

- Allow teammates to use any communication platform they prefer

 **This should not be selected**

Review [the reading on tips for effective communication](#).

- Obtain feedback and incorporate it going forward

 **Correct**

- Send identical message content to both teammates and stakeholders

3. What details does a communication plan include? Select all that apply.

- Who should communicate

 **Correct**

- How communications should sound

- When communication happens

 **Correct**

- What to communicate

 **Correct**

4. As a project manager, you decide to hold video conferences with your core project team and stakeholders as part of your communication plan. What additional details should the communication plan include? Select all that apply.

- Duration

- Key dates

 **Correct**

- Resource locations

 **Correct**

- Location

 **This should not be selected**

Review [the video on creating a basic communication plan](#).

5. What potential barriers should you consider when making a communication plan? Select all that apply.

- How competitors communicate
- Linguistic and cultural differences

 **Correct**

- Privacy or internet access issues

 **Correct**

- Time zone limitations

 **Correct**

6. An effective project management communication plan can help with which of the following processes? Select all that apply.

- Change management

 **Correct**

- Project continuity

 **Correct**

- Team selection

- Culture development

 **This should not be selected**

Review [the video on creating a basic communication plan](#).

7. Which of the following communication methods are most appropriate for core project team members? Select all that apply.

- Formal presentations to explain project deliverables
- Daily meetings to report on project progress

 **Correct**

- Department newsletters on current projects

- Quick virtual check-ins to answer questions

 **Correct**

8. Which of the following are best practices for concise emails? Select all that apply.

- Write in one long paragraph to save space
- Include as much detail about a situation as possible
- Lead with key points and action items

 **Correct**

- Add a note at the top that some details may not be relevant to certain recipients

 **Correct**

9. As a project manager, you work on a project that involves several teams, including testing, engineering, and program management. How can you ensure documentation is created and maintained effectively for each team?

- Ask the team members of the team to maintain the documentation
- Store the plans and reports for each team in one centralized location or folder
- Store the project plans and reports for all teams in one shared folder
- Use emails between the teams to keep track of the resources for the project

 **Correct**

10. A project manager creates a centralized planning document. They create an overview sheet with the project description and communication expectations. What is another piece of information they can include in the overview sheet?

- Goals for how many emails to send to stakeholders
- Instructions for how to use the spreadsheet
- Instructions for how to use the RACI chart
- Goals on how many daily check-ins for project

 **Correct**

Glossary - Terms and Definitions

B

Backward pass: Refers to starting with a final task or milestone and moving backwards through the schedule to determine the shortest path

Baseline: The dollar amount used to measure against to find out whether a project is on track or not and to measure the success of the project

Baseline a budget: The act of creating a fixed reference point of spending to measure and compare a project's progress against

Bottom-up approach: Thinking about all the parts of a project from the beginning to the end--including making a list of anything that comes with an associated cost--and adding all of it together

Budget: The estimated monetary resources needed to achieve the project's goals and objectives

Budget pre-allocation: A situation where a budget is set before the project begins

Budget risk: The possibility that the costs of a project will increase due to poor planning or expanding the project's scope

Buffer: Extra time added to the end of a task or project to account for unexpected slowdowns or delays in work progress

C

Capacity: The amount of work that the people or resources assigned to the project can reasonably complete in a set period of time

Capacity planning: Refers to the act of allocating people and resources to project tasks and determining whether the necessary resources required to complete the work on time have been acquired

CAPEX: Capital expenses; refers to expenses which businesses incur to create a benefit in the future

Cash flow: The inflow and outflow of cash on a project

Cause-and-effect diagram: A visual that shows the possible causes of an event or risk; also known as a fishbone diagram

Communication: The flow of information; includes everything that's shared, how it's shared, and with whom

Communication plan: A document that organizes the process, types, and expectations of communications for a project

Contingency budget: Money that is included to cover potentially unforeseen events that aren't accounted for in a cost estimate

Contingency reserves: Money added to the estimated project cost to manage identified risks

Cost of quality: Costs that are incurred to prevent issues with products, processes, or tasks

Cost performance index (CPI): The ratio of the percentage complete to the actual costs

Cost variance (CV): The difference between the amount of budget expected to be spent on versus what is actually spent for work completed at a point in time

Critical path: The list of project milestones that must be reached in order to meet the project goal on schedule, as well as the mandatory tasks that contribute to the completion of each milestone

D

Decision tree: A flowchart that helps visualize the wider impact of a decision on the rest of a project

Dependency: A relationship between two project tasks, where the start or completion of one depends on the start or completion of the other

Dependency graph: A visual representing the dependencies in the flow of work during a project

Direct costs: Costs that occur directly in a project

E

Earliest start date: In the critical path method, the earliest possible date on which a task (or the project itself) can begin

Earned value management (EVM): A technique where a project's performance or actuals for budget and schedule are regularly monitored against the planned budget and schedule

Effort estimation: A prediction of the amount and difficulty of active work required to complete a task

Empathy: A person's ability to relate to the thoughts and feelings of others

Ethical trap: An issue that may cause a person to make unethical choices

F

Finish-to-finish (FF): In this type of dependency relationship, the first task must be completed before the second task can be completed

Finish-to-start (FS): In this type of dependency relationship, the first task must be completed before the second task can start

Fishbone diagram: A visual that shows the possible causes of an event or risk; also known as a cause-and-effect diagram

Fixed contract: A contract that is paid for when certain milestones are reached

Fixed costs: Costs that won't change over the course of a project

Fixed start date: The date on which work on a task must start in order to achieve a goal

Float: The amount of time that can be waited to begin a task before it impacts the project schedule and threatens the project outcome

Forecast: A cost estimate or prediction over a period of time

Forward pass: Refers to starting at the beginning of a project task list and moving forward towards the end of the project

G

Gantt chart: A horizontal bar chart that visually maps out a project schedule and tasks, with clear breakdowns of who's responsible for the work and when those tasks are due

H

High-level risk: A risk that is serious and can affect the overall success of a project; requires direct communication with stakeholders to go over plans to mitigate and address

I

Impact: The damage a risk could cause, if it occurs; determined on a scale of high, medium, or low

Indirect costs: Costs that can't be linked directly to a project

Inherent risk: The measure of a risk, calculated by its probability and impact

Issue: A known and real problem that can affect the ability to complete a task

K

Kanban board: A visual tool used to manage tasks and workflows

Kickback: A corruption scheme where a certain percentage of an awarded contract is offered to an official who can ensure that their company wins the bid

Knowledge management: A way of ensuring that project data can be accessed in the future by others who need it for informing decisions or planning similar projects

L

Latest start date: In the critical path method, the latest possible date on which a task (or the project itself) can begin

Leverage experts: Refers to gathering experts' insights to do something more effectively

Low-level risk: A risk that may not greatly impact the project and may have a low probability of occurring, so a project manager may or may not communicate it to stakeholders

M

Management reserves: A percentage of the budget set aside for unknown risks

Medium-level risk: A risk that requires direct communication with stakeholders and should be treated as urgent, as it will most likely impact the project

Milestone: An important point within the project schedule that indicates progress and usually signifies the completion of a deliverable or phase of the project

N

Need-to-know basis: Telling someone facts they need to know at the time they need to know them, and nothing more

Network diagram: A visual that sequences project tasks in order of dependencies

Non-disclosure agreement (NDA): Document that keeps confidential information within the organization

O

Open-ended question: A question that cannot be answered with a yes or no

OPEX (operating expenses): Refers to expenses which are required for day-to-day tasks within the company

Optimism bias: When a person believes that they are unlikely to experience a negative event

P

Parallel tasks: Tasks that can happen at the same time as other tasks

Personally identifiable information (PII): Information that could be used on its own to directly identify, contact, or precisely locate an individual; includes email addresses, mailing addresses, phone numbers, precise locations, full names, and usernames

Planning fallacy: Describes people's tendency to underestimate the amount of time it will take to complete a task, as well as the costs and risks associated with that task

Planning phase: The second phase of the project life cycle; includes the schedule, the budget, and the risk management plan

Probability and impact matrix: A tool used to prioritize project risks

Probability: The likelihood that a risk will occur

Procurement: Obtaining all of the materials, services, and supplies required to complete the project

Project budget: The estimated monetary resources needed to achieve the project's goals and objectives

Project buffer: Extra time tacked onto the end of a project

Project kick-off meeting: The first meeting in which a project team comes together to ground everyone in a shared vision, gain a shared understanding of the project's goals and scope, and understand each person's individual roles within the team

Project management baseline (PMB): A clearly-defined fixed starting point for your project that includes the scope, budget, and schedule

Project plan: A document that records the scope, tasks, milestones, and overall activities of a project; generally contains these five basic elements: tasks, milestones, people, documentation, and time

Project task: An activity that needs to be accomplished within a set period of time

R

Reforecast: Creating a separate revised budget based on how a project is tracking

Request for proposal (RFP): Document that outlines the details of a project

Reserve analysis: A method to check for remaining project resources

Resource cost rate: The cost of a resource

Risk: A potential event which can occur and impact a project

Risk appetite: The willingness of an organization to accept the possible outcomes of a risk

Risk assessment: The stage of risk management where qualities of a risk are estimated or measured

Risk management: The process of identifying and evaluating potential risks and issues that could impact a project

Risk management plan: A living document that contains information regarding the identified risks, estimates of their probability and impact, and the mitigation plans for those risks

Risk register: A table or chart that contains a list of risks

Root cause: The initial cause of a situation that introduces a risk

S

Schedule: The project timeline, which includes the start date, the end date, and dates for events in between

Schedule performance index (SPI): The ratio of the percentage of work complete to the planned budget for the planned work

Schedule variance (SV): The difference between the amount of work expected to have been completed and the amount actually completed at a given point in time

Scope risk: The possibility that a project won't produce the results outlined in the project goals

Sequential tasks: Tasks that must be completed in a specific order

Single point of failure: A risk that has the potential to be catastrophic and halt work across a project

Slack: The amount of time that a task can be delayed past its earliest start date without delaying the project

Soft skills: Personal characteristics that help people work effectively with others

Sole-supplier sourcing: When a company restricts the bidding process to one supplier, preventing competition

Start-to-finish (SF): In this type of dependency relationship, the first task must begin before the second task can be completed

Start-to-start (SS): In this type of dependency relationship, the second task can't begin until the first task begins

Statement of work (SoW): A document that clearly lays out the products and services a vendor or contractor will provide for the organization

Subtasks: Smaller tasks that are required to complete a larger task

Subject matter expert (SME): A team member with a deep understanding of a particular job, process, department, function, technology, machine, material, or type of equipment

Summary task: A header at the top of a project plan that describes a collection of subtasks

T

Task buffer: Extra time tacked on to a specific task

Time and materials contract: Contract paid monthly based on the hours worked and other fees associated with the work, like travel and meals

Time estimation: A prediction of the total amount of time required to complete a task

Time risk: The possibility that project tasks will take longer than anticipated to complete

Time-phase a budget: The act of spreading budget items out over the duration of a

project

Total cost of ownership (TCO): The total cost of a project, from the initiation phase through completion

V

Vendors: Individuals or businesses who provide goods and services to the project

W

Work breakdown structure (WBS): A tool that sorts the milestones and tasks of a project in a hierarchy, in the order they need to be completed