

Capstone Student Guide

40567A  
Microsoft Excel associate 2019

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# Capstone overview

## Description

In this Capstone project, you will apply what you’ve learned in this course to a problem or opportunity that is meaningful to you. After you have selected a problem or opportunity, you will decide what part of the solution you can achieve by using Microsoft Excel. Be sure to review the Capstone Rubric to make sure your project incorporates the required items.

In the Capstone project, you will:

* Apply Excel to help solve a personally significant problem or respond to an opportunity.
* Analyze the need.
* Plan and create an Excel workbook or workbooks to satisfy an important need. Your project can:
  + Solve a small piece of a large real-world problem.
  + Provide an alternative solution to a problem.
  + Create another version of an already existing solution.
  + Take advantage of an opportunity to start something new or improve lives.
* Your project should be able to incorporate both the required elements and the choice elements listed in the Capstone Rubric.
* Be creative.
* Have opportunities to work with others.
* Assess and reflect on your work by using the Capstone Rubric.
* If possible, share with an authentic audience.

In the Capstone project, you will not:

* Follow step-by-step directions for completing the project.
* Be told how to solve the problem you select.
* Be told how you should display your project or how you should use Excel.

## Capstone outline

|  |  |  |
| --- | --- | --- |
| Lesson | Activity | Objectives |
| 1 | * Analyze a problem or opportunity * Select a project * Create work plans | * Select and decompose a personally significant problem or opportunity. * Decide how using Excel can help. * Create a timeline to accomplish the project. |
| 2 | * Work on the project * Record progress | * Follow your plans to complete your project. * Note: Your teacher might plan additional workdays for these activities. |
| 3 | * Complete the project * Share the results * Assess and reflect | * Make any last-minute changes or additions. * Share your work with others. * Assess your work with a rubric. * Reflect on your learning. |

Table 1: Capstone activities and objectives by lesson

# Lesson 1: Selecting a problem and making plans

## Warm-up

Think about what you learned throughout this course that will help with tasks and challenges in your life. Share your experience with a partner and be prepared to share with the class.

What do you think is a serious problem in our school or community? How do you think we could help solve some part of the problem by using Excel? Or, is there an opportunity to provide something new that’s useful or fun in our school or community? Share your thoughts with an elbow partner. Be prepared to share with the class.

## Activities

### Select a problem

Tools are designed to solve problems. And just like the tools in a toolbox that are useful for building, or kitchen appliances that are useful for preparing food, electronic tools are most valuable when they are solving problems for which they are best suited. In this Capstone project, you will apply the tools in Excel to solve a problem. You can build on an opportunity that is important to you or choose from the list that you created during the warm-up session.

1. Describe the problem or opportunity that is important to you.

Select here to enter text.

1. Is this problem or opportunity made up of many smaller challenges? List smaller challenges that are a part of this bigger problem. The process of breaking a large problem into smaller problems is called “decomposition.”

Select here to enter text.

1. Is there an authentic audience that you could consult with for ideas on how to solve the problem? Is it possible that you could create something that this audience could use?

Select here to enter text.

1. What could you create with Excel to help solve one of these smaller problems?

Select here to enter text.

1. If you are having trouble selecting a problem to solve or an opportunity to work on, review the following list of project ideas.

#### Excel ideas

* Prepare a budget for a special event, party, or trip with friends or family.
* Fundraise for a charity. Include items to auction or sell, cookies to bake, or offers for services.
* Host a garage sale to raise cash for something special like a mobile phone, vacation, or music festival. Include how much you need to raise, list items to sell, and set prices.
* Create a sport fantasy league or create a log of favorite sports statistics.
* Create a workbook for keeping track of a trivia, board game and online game scores. Include individual/team names, and points tracking that include calculations, conditional formatting, sorting and filtering of values.
* Design a sports tournament plan: start with 16 teams, then eight, four and two. Include dates, interesting formatting, and print on one sheet.
* Start a savings plan for college or some other expenditure like a car.
* Plan to redecorate a room, house, or classroom. Include room measurements; paint quantities; flooring, carpet, and curtain measurements.
* Record calorie intake or calories burned over a specific time period. For example, determine the optimal number of daily calories.
* Generate weather data predictions for several states using historic data.
* Estimate costs to feed and care for animals in a local shelter.
* Compare the cost of owning a vehicle versus using public transportation or traveling by bicycle. Include the costs of insurance, gas, and maintenance.
* Estimate the costs to own or rent a house.
* Create a family budget that includes weekly expenditures versus income.
* Convert a document from another class into an Excel workbook that includes calculations.
* Using Excel, write a guide describing six of the most valuable Excel tools for students to use in school.
* Make comparisons of the cost of living in other countries/regions versus average salaries in those countries/regions. Requires research.

Alternative Munson’s Pickles and Preserves Farm project ideas:

* Calculate the costs to implement new technologies at the farm (computers, point of sales systems, 3D printers, Internet of Things devices, drones, irrigation system, solar or wind energy, and tractor equipment).
* Calculate the costs to run the farm market, restaurant, community programs, events, and summer camp.
* Analyze energy production versus consumption at the farm.
* Analyze crop harvest versus yield.
* Analyze store merchandise and produce sold versus items that are in stock.

### Create a plan

1. Open the Capstone\_rubric.docx in the Learning Activity Resources, Capstone project folder. Read the criteria for required features and the optional features. Be sure you understand what to include in your project and what is optional. The documents or other artifacts you create must adhere to the rubric criteria in a meaningful way that contributes to more clearly communicating ideas or solving the problem you selected.
2. Describe the documents or other artifacts you plan to create.

Select here to enter text.

1. Complete the following Capstone plan, individually or with a partner if working as a team. Begin working on the project if time permits.

## Capstone plan

### Problem selected:

### Proposed solution:

### Names of problem solvers:

|  |  |  |  |
| --- | --- | --- | --- |
| Lesson | Tasks to complete | Person responsible | Completed (Y/N) |
| 1 | Select here to enter text. | Select here to enter text. | Select here to enter text. |
| 2  (Add more rows for additional workdays, as needed) | Select here to enter text. | Select here to enter text. | Select here to enter text. |
| 3 | Select here to enter text. | Select here to enter text. | Select here to enter text. |

Table 2: Capstone plan

## Wrap-up

Review and assess your Capstone plan. If you have started to work on the project, you can indicate the status in the plan. Remember to reflect on this question while planning: What do you think will be the most challenging part of your project? Share your answer with the class in the class discussion.

# Lesson 2: Working on your project

## Warm-up

1. Review the Capstone plan.
2. Did you experience any problems during the previous lesson that haven’t been resolved? Do you foresee any problems with the tasks you plan to complete today?

## Activities

### Project development

Based on the Capstone plan, work on your project tasks. Reserve enough time at the end of the class session to track your progress.

If you have questions or are facing problems while completing your tasks, use the following problem-solving strategies before asking your teacher for help:

* Use the Help options on the ribbon in Excel.
* Review the related content in your Student Guide.
* Ask your team members or other class members for help.

## Wrap-up

1. In your Capstone plan, indicate the tasks that you completed and review the tasks you need to work on during the next class session.
2. Think about the following questions:
3. What challenges did you encounter today?
4. What resource did you use to address the challenge?
5. Share your answers with a partner. Did you encounter similar challenges as your partner? What did you learn from each other?

# Lesson 3: Sharing and reflecting

## Warm-up

1. Review the Capstone plan and ensure that all tasks are complete.
2. Review the rubric to be sure you have included all the necessary elements in your project.
3. Make any last-minute changes or additions to your project and finalize it.

## Activities

### Sharing

Follow the teacher’s directions for sharing your project with others.

## Wrap-up

### Project assessment and reflection

1. Assess your project by using the Capstone Rubric.
2. Reflect on your work and what you learned in this project by answering the questions at the end of the rubric.

## Glossary

|  |  |
| --- | --- |
| Decomposition | The process of breaking a large or complex problem into smaller, easier sub-problems. |
| Authentic audience | Individuals or organizations in the community beyond the classroom that would be interested in or could use the results of your project. For example, the local humane society might be interested in your solution to the problem of abandoned pets and want to use posters you create. |

Table 3: Glossary terms and definitions