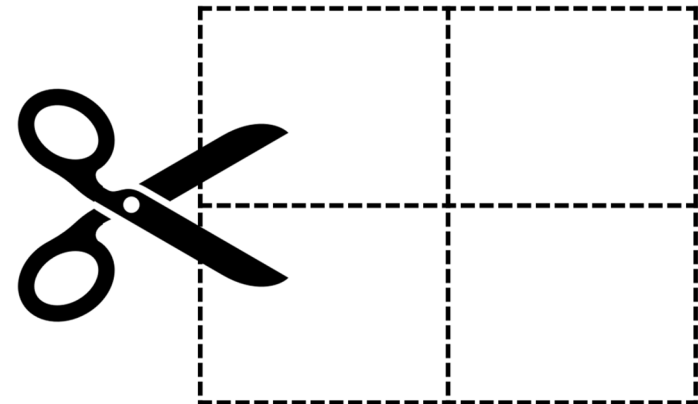


## ITTO Notecards

On the subsequent pages of this document, you will find the ITTOs for each of the 49 processes in the PMBOK® Guide. Feel free to print and cut these and use them as one of your exam study tools. However, remember that it is more important to “master” the ITTOs than to “memorize” them. Memorization would be nearly impossible! Mastery involves understanding the purpose of an ITTO and how it can support a given process. (For example, ask yourself, “*What is a business case (agreement), and why is it used to develop the project charter?*”)

Also, as a note, these notecards include the *basic view* of the ITTOs. For example, “agreements” include both the “business case” and “benefits management plan”, but only “agreements” are listed. If you want see both the *basic view* and the *detailed view*, refer to the **ITTO Spreadsheet** in our **Prep Pack**.



## Develop Project Charter

*Knowledge Area:* Integration

*Process Group:* Initiating

Authorizing the project and providing the PM with authority to use resources.

| Inputs   | Tools   | Outputs  |
|--|---|--|
| <ul style="list-style-type: none"><li>▪ Business Documents</li><li>▪ Agreements</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Gathering</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Assumption Log</li></ul> |

## Develop Project Mgmt. Plan

*Knowledge Area:* Integration

*Process Group:* Planning

Integrating subsidiary plans into a comprehensive project plan.

| Inputs  | Tools   | Outputs   |
|---|---|---|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Outputs from Other Processes</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Gathering</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Project Management Plan</li></ul> |

## Direct & Manage Project Work

*Knowledge Area:* Integration

*Process Group:* Executing

Performing project work as defined in the plan and implementing approved changes.

| Inputs  | Tools  | Outputs  |
|---|--|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Approved Change Requests</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Project Management Information System</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Deliverables</li><li>▪ Work Performance Data</li><li>▪ Issue Log</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li><li>▪ Organizational Process Assets Updates</li></ul> |

## Manage Project Knowledge

*Knowledge Area:* Integration

*Process Group:* Executing

Using and creating knowledge to support the project and the organization.

| Inputs  | Tools   | Outputs  |
|---|---|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Deliverables</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Knowledge Management</li><li>▪ Information Management</li><li>▪ Interpersonal &amp; Team Skills</li></ul> | <ul style="list-style-type: none"><li>▪ Lessons Learned Register</li><li>▪ Project Management Plan Updates</li><li>▪ Organizational Process Assets Updates</li></ul> |

## Monitor & Control Project Work

*Knowledge Area:* Integration  
*Process Group:* Monitor/Con.

Reviewing and reporting project progress against the objectives.

| Inputs   | Tools  | Outputs  |
|--|--|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Work Performance Information</li><li>▪ Agreements</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Analysis</li><li>▪ Decision Making</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Work Performance Reports</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Perform Int. Change Control

*Knowledge Area:* Integration  
*Process Group:* Monitor/Con.

Reviewing and approving change requests; communicating the decisions.

| Inputs  | Tools   | Outputs  |
|---|---|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Work Performance Reports</li><li>▪ Change Requests</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Change Control Tools</li><li>▪ Data Analysis</li><li>▪ Decision Making</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Approved Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Close Project or Phase

*Knowledge Area:* Integration  
*Process Group:* Closing

Formally completing the project or a phase of the project.

| Inputs  | Tools  | Outputs   |
|---|--|---|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Accepted Deliverables</li><li>▪ Business Documents</li><li>▪ Agreements</li><li>▪ Procurement Documentation</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Analysis</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Project Documents Updates</li><li>▪ Final Product, Service, or Result Transition</li><li>▪ Final Report</li><li>▪ Organizational Process Assets Updates</li></ul> |

## Plan Scope Management

*Knowledge Area:* Scope  
*Process Group:* Planning

Documenting how scope will be defined and controlled.

| Inputs   | Tools  | Outputs  |
|--|--|--|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Project Management Plan</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Analysis</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Scope Management Plan</li><li>▪ Requirements Management Plan</li></ul> |

## Collect Requirements

*Knowledge Area:* Scope  
*Process Group:* Planning

Documenting stakeholders needs.

| Inputs   | Tools   | Outputs   |
|--|---|---|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Business Documents</li><li>▪ Agreements</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Gathering</li><li>▪ Data Analysis</li><li>▪ Decision Making</li><li>▪ Data Representation</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Context Diagram</li><li>▪ Prototypes</li></ul> | <ul style="list-style-type: none"><li>▪ Requirements Documentation</li><li>▪ Requirements Traceability Matrix</li></ul> |

## Define Scope

*Knowledge Area:* Scope  
*Process Group:* Planning

Developing a detailed project and product description.

| Inputs   | Tools  | Outputs   |
|--|--|---|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Analysis</li><li>▪ Decision Making</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Product Analysis</li></ul> | <ul style="list-style-type: none"><li>▪ Project Scope Statement</li><li>▪ Project Documents Updates</li></ul> |

## Create WBS

*Knowledge Area:* Scope  
*Process Group:* Planning

Decomposing project work into smaller components.

| Inputs   | Tools   | Outputs  |
|--|---|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Decomposition</li></ul> | <ul style="list-style-type: none"><li>▪ Scope Baseline</li><li>▪ Project Documents Updates</li></ul> |

## Validate Scope

*Knowledge Area:* Scope  
*Process Group:* Monitor/Con.

Formalizing acceptance of completed deliverables.

| Inputs  | Tools  | Outputs  |
|---|--|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Verified Deliverables</li><li>▪ Work Performance Data</li></ul> | <ul style="list-style-type: none"><li>▪ Inspection</li><li>▪ Decision Making</li></ul> | <ul style="list-style-type: none"><li>▪ Accepted Deliverables</li><li>▪ Work Performance Information</li><li>▪ Change Requests</li><li>▪ Project Documents Updates</li></ul> |

## Control Scope

*Knowledge Area:* Scope  
*Process Group:* Monitor/Con.

Monitoring project scope and managing changes to the scope baseline.

| Inputs  | Tools   | Outputs  |
|---|---|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Work Performance Data</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Data Analysis</li></ul> | <ul style="list-style-type: none"><li>▪ Work Performance Information</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Plan Schedule Management

*Knowledge Area:* Schedule  
*Process Group:* Planning

Documenting how the schedule will be developed and controlled.

| Inputs   | Tools  | Outputs  |
|--|--|--|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Project Management Plan</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Analysis</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Schedule Management Plan</li></ul> |

## Define Activities

*Knowledge Area:* Schedule  
*Process Group:* Planning

Identifying the steps required to produce project deliverables.

| Inputs   | Tools  | Outputs  |
|--|--|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Decomposition</li><li>▪ Rolling Wave Planning</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Activity List</li><li>▪ Activity Attributes</li><li>▪ Milestone List</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li></ul> |

## Sequence Activities

*Knowledge Area:* Schedule  
*Process Group:* Planning

Identifying relationships (or order) of project activities.

| Inputs   | Tools   | Outputs   |
|--|---|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Precedence Diagramming Method</li><li>▪ Dependency Determination &amp; Integration</li><li>▪ Leads &amp; Lags</li><li>▪ Project Management Information System</li></ul> | <ul style="list-style-type: none"><li>▪ Project Schedule Network Diagrams</li><li>▪ Project Documents Updates</li></ul> |

## Estimate Activity Durations

*Knowledge Area:* Schedule

*Process Group:* Planning

Approximating the number of work periods needed to complete activities

| Inputs   | Tools   | Outputs   |
|--|---|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Analogous Estimating</li><li>▪ Parametric Estimating</li><li>▪ Three-Point Estimating</li><li>▪ Bottom-Up Estimating</li><li>▪ Data Analysis</li><li>▪ Decision Making</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Duration Estimates</li><li>▪ Basis of Estimates</li><li>▪ Project Documents Updates</li></ul> |

## Develop Schedule

*Knowledge Area:* Schedule

*Process Group:* Planning

Analyzing activities sequences and estimates to create the schedule.

| Inputs  | Tools   | Outputs  |
|---|---|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Agreements</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Schedule Network Analysis</li><li>▪ Critical Path Method</li><li>▪ Resource Optimization</li><li>▪ Data Analysis</li><li>▪ Leads &amp; Lags</li><li>▪ Schedule Compression</li><li>▪ Project Management Information System</li><li>▪ Agile Release Planning</li></ul> | <ul style="list-style-type: none"><li>▪ Schedule Baseline</li><li>▪ Project Schedule</li><li>▪ Schedule Data</li><li>▪ Project Calendars</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Control Schedule

*Knowledge Area:* Schedule

*Process Group:* Monitor/Con.

Monitoring progress of activities and managing changes to the schedule baseline.

| Inputs  | Tools  | Outputs   |
|---|--|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Work Performance Data</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Data Analysis</li><li>▪ Critical Path Method</li><li>▪ Project Management Information System</li><li>▪ Resource Optimization</li><li>▪ Leads &amp; Lags</li><li>▪ Schedule Compression</li></ul> | <ul style="list-style-type: none"><li>▪ Work Performance Information</li><li>▪ Schedule Forecasts</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Plan Cost Management

*Knowledge Area:* Cost

*Process Group:* Planning

Documenting how to estimate and control costs.

| Inputs   | Tools  | Outputs  |
|--|--|--|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Project Management Plan</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Analysis</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Cost Management Plan</li></ul> |

## Estimate Costs

*Knowledge Area:* Cost  
*Process Group:* Planning

Calculating the finances needed to complete project activities.

| Inputs   | Tools  | Outputs   |
|--|--|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Analogous Estimating</li><li>▪ Parametric Estimating</li><li>▪ Bottom-Up Estimating</li><li>▪ Three-Point Estimating</li><li>▪ Data Analysis</li><li>▪ Project Management Information System</li><li>▪ Decision Making</li></ul> | <ul style="list-style-type: none"><li>▪ Cost Estimates</li><li>▪ Basis of Estimates</li><li>▪ Project Documents Updates</li></ul> |

## Determine Budget

*Knowledge Area:* Cost  
*Process Group:* Planning

Summing the costs of individual activities to generate the cost baseline.

| Inputs   | Tools   | Outputs  |
|--|---|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Business Documents</li><li>▪ Agreements</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Cost Aggregation</li><li>▪ Data Analysis</li><li>▪ Historical Information Review</li><li>▪ Funding Limit Reconciliation</li><li>▪ Financing</li></ul> | <ul style="list-style-type: none"><li>▪ Cost Baseline</li><li>▪ Project Funding Requirements</li><li>▪ Project Documents Updates</li></ul> |

## Control Costs

*Knowledge Area:* Cost  
*Process Group:* Monitor/Con.

Monitoring project costs and managing changes to the cost baseline.

| Inputs   | Tools   | Outputs   |
|--|---|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Project Funding Requirements</li><li>▪ Work Performance Data</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Analysis</li><li>▪ To-Complete Performance Index</li><li>▪ Project Management Information System</li></ul> | <ul style="list-style-type: none"><li>▪ Work Performance Information</li><li>▪ Cost Forecasts</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Plan Quality Management

*Knowledge Area:* Quality  
*Process Group:* Planning

Identifying quality requirements and documenting how to comply with them.

| Inputs   | Tools  | Outputs   |
|--|--|---|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Gathering</li><li>▪ Data Analysis</li><li>▪ Decision Making</li><li>▪ Data Representation</li><li>▪ Test &amp; Inspection Planning</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Quality Management Plan</li><li>▪ Quality Metrics</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Manage Quality

*Knowledge Area:* Quality  
*Process Group:* Executing

Converting the quality management plan into actionable quality activities.

| Inputs  | Tools  | Outputs   |
|---|--|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Data Gathering</li><li>▪ Data Analysis</li><li>▪ Decision Making</li><li>▪ Data Representation</li><li>▪ Audits</li><li>▪ Design for X</li><li>▪ Problem Solving</li><li>▪ Quality Improvement Methods</li></ul> | <ul style="list-style-type: none"><li>▪ Quality Reports</li><li>▪ Test &amp; Evaluation Documents</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Control Quality

*Knowledge Area:* Quality  
*Process Group:* Monitor/Con.

Monitoring outcomes of quality activities to evaluate performance.

| Inputs   | Tools  | Outputs   |
|--|--|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Approved Change Requests</li><li>▪ Deliverables</li><li>▪ Work Performance Data</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Data Gathering</li><li>▪ Data Analysis</li><li>▪ Inspection</li><li>▪ Testing/Product Evaluations</li><li>▪ Data Representation</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Quality Control Measurements</li><li>▪ Verified Deliverables</li><li>▪ Work Performance Information</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Plan Resource Management

*Knowledge Area:* Resource  
*Process Group:* Planning

Documenting how to estimate, acquire, and manage required project resources.

| Inputs   | Tools  | Outputs   |
|--|--|---|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Representation</li><li>▪ Organizational Theory</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Resource Management Plan</li><li>▪ Team Charter</li><li>▪ Project Documents Updates</li></ul> |

## Estimate Activity Resources

*Knowledge Area:* Resource  
*Process Group:* Planning

Estimating the manpower, materials, and equipment needed to complete the project.

| Inputs   | Tools  | Outputs   |
|--|--|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Bottom-Up Estimating</li><li>▪ Analogous Estimating</li><li>▪ Parametric Estimating</li><li>▪ Data Analysis</li><li>▪ Project Management Information System</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Resource Requirements</li><li>▪ Basis of Estimates</li><li>▪ Resource Breakdown Structure</li><li>▪ Project Documents Updates</li></ul> |



## Acquire Resources

*Knowledge Area:* Resource  
*Process Group:* Executing

Obtaining the manpower, materials, and equipment needed to complete the project.

| Inputs   | Tools  | Outputs   |
|--|--|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Decision Making</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Pre-Assignment</li><li>▪ Virtual Teams</li></ul> | <ul style="list-style-type: none"><li>▪ Physical Resource Assignments</li><li>▪ Project Team Assignments</li><li>▪ Resource Calendars</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Doc. Updates</li><li>▪ Enterprise Environmental Factors Updates</li><li>▪ Organizational Process Assets Updates</li></ul> |

## Develop Team

*Knowledge Area:* Resource  
*Process Group:* Executing

Improving team skills and relations to enhance project performance.

| Inputs   | Tools   | Outputs   |
|--|---|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Colocation</li><li>▪ Virtual Teams</li><li>▪ Communication Technology</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Recognition &amp; Rewards</li><li>▪ Training</li><li>▪ Individual &amp; Team Assessments</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Team Performance Assessments</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li><li>▪ Enterprise Environmental Factors Updates</li><li>▪ Organizational Process Assets Updates</li></ul> |

## Manage Team

*Knowledge Area:* Resource  
*Process Group:* Executing

Tracking team member performance, providing feedback, and resolving issues.

| Inputs   | Tools   | Outputs  |
|--|---|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Work Performance Reports</li><li>▪ Team Performance Assessments</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Project Management Information System</li></ul> | <ul style="list-style-type: none"><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li><li>▪ Enterprise Environmental Factors Updates</li></ul> |

## Control Resources

*Knowledge Area:* Resource  
*Process Group:* Monitor/Con.

Monitoring planned versus actual resource usage.

| Inputs   | Tools   | Outputs  |
|--|---|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Work Performance Data</li><li>▪ Agreements</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Data Analysis</li><li>▪ Problem Solving</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Project Management Information System</li></ul> | <ul style="list-style-type: none"><li>▪ Work Performance Information</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Plan Communications Mgmt.

*Knowledge Area:* Comm.  
*Process Group:* Planning

Developing a plan for communications based on the needs of stakeholders.

| Inputs   | Tools   | Outputs  |
|--|---|--|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Communications Requirements Analysis</li><li>▪ Communication Technology</li><li>▪ Communication Models</li><li>▪ Communication Methods</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Data Representation</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Communications Management Plan</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Manage Communications

*Knowledge Area:* Comm.  
*Process Group:* Executing

Creating and distributing project information.

| Inputs  | Tools  | Outputs  |
|---|--|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Work Performance Reports</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Communication Technology</li><li>▪ Communication Methods</li><li>▪ Communication Skills</li><li>▪ Project Management Information System</li><li>▪ Project Reporting</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Project Communications</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li><li>▪ Organizational Process Assets Updates</li></ul> |

## Monitor Communications

*Knowledge Area:* Comm.  
*Process Group:* Monitor/Con.

Monitoring communications to ensure stakeholders needs are met.

| Inputs   | Tools  | Outputs  |
|--|--|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Work Performance Data</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Project Management Information System</li><li>▪ Data Representation</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Work Performance Information</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Plan Risk Management

*Knowledge Area:* Risk  
*Process Group:* Planning

Defining how to conduct risk management on the project.

| Inputs   | Tools  | Outputs  |
|--|--|--|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Analysis</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Risk Management Plan</li></ul> |

## Identify Risks

*Knowledge Area:* Risk  
*Process Group:* Planning

Detecting risks that may affect the project.

| Inputs  | Tools  | Outputs   |
|---|--|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Agreements</li><li>▪ Procurement Documentation</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Gathering</li><li>▪ Data Analysis</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Prompt Lists</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Risk Register</li><li>▪ Risk Report</li><li>▪ Project Documents Updates</li></ul> |

## Perform Qual. Risk Analysis

*Knowledge Area:* Risk  
*Process Group:* Planning

Prioritizing risks by evaluating their probability and impact.

| Inputs   | Tools   | Outputs   |
|--|---|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Gathering</li><li>▪ Data Analysis</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Risk Categorization</li><li>▪ Data Representation</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Project Documents Updates</li></ul> |

## Perform Quant. Risk Analysis

*Knowledge Area:* Risk  
*Process Group:* Planning

Numerically analyzing the effect of risks on project objectives.

| Inputs   | Tools   | Outputs   |
|--|---|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Gathering</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Representations of Uncertainty</li><li>▪ Data Analysis</li></ul> | <ul style="list-style-type: none"><li>▪ Project Documents Updates</li></ul> |

## Plan Risk Responses

*Knowledge Area:* Risk  
*Process Group:* Planning

Defining strategies and actions to address project risks.

| Inputs   | Tools   | Outputs   |
|--|---|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Gathering</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Strategies for Threats</li><li>▪ Strategies for Opportunities</li><li>▪ Contingent Response Strategies</li><li>▪ Strategies for Overall Project Risk</li><li>▪ Data Analysis</li><li>▪ Decision Making</li></ul> | <ul style="list-style-type: none"><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Implement Risk Responses

*Knowledge Area:* Risk  
*Process Group:* Executing

Implementing planned risk responses.

| Inputs  | Tools   | Outputs   |
|---|---|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Project Management Information System</li></ul> | <ul style="list-style-type: none"><li>▪ Change Requests</li><li>▪ Project Documents Updates</li></ul> |

## Monitor Risks

*Knowledge Area:* Risk  
*Process Group:* Monitor/Con.

Tracking risks; identifying and analyzing new ones.

| Inputs   | Tools   | Outputs  |
|--|---|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Work Performance Data</li><li>▪ Work Performance Reports</li></ul> | <ul style="list-style-type: none"><li>▪ Data Analysis</li><li>▪ Audits</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Work Performance Information</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li><li>▪ Organizational Process Assets Updates</li></ul> |

## Plan Procurement Management

*Knowledge Area:* Procurement  
*Process Group:* Planning

Documenting the procurement method and identifying potential sellers.

| Inputs  | Tools   | Outputs   |
|---|---|---|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Business Documents</li><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Gathering</li><li>▪ Data Analysis</li><li>▪ Source Selection Analysis</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Procurement Mgmt. Plan</li><li>▪ Procurement Strategy</li><li>▪ Bid Documents</li><li>▪ Procurement Statement of Work</li><li>▪ Source Selection Criteria</li><li>▪ Make-or-Buy Decisions</li><li>▪ Independent Cost Estimates</li><li>▪ Change Requests</li><li>▪ Project Doc. Updates</li><li>▪ Organizational Process Assets Updates</li></ul> |

## Conduct Procurements

*Knowledge Area:* Procurement  
*Process Group:* Executing

Collecting seller responses, choosing a seller, and awarding a contract.

| Inputs  | Tools  | Outputs   |
|---|--|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Procurement Documentation</li><li>▪ Seller Proposals</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Advertising</li><li>▪ Bidder Conferences</li><li>▪ Data Analysis</li><li>▪ Interpersonal &amp; Team Skills</li></ul> | <ul style="list-style-type: none"><li>▪ Selected Sellers</li><li>▪ Agreements</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li><li>▪ Organizational Process Assets Updates</li></ul> |

## Control Procurements

*Knowledge Area:* Procurement  
*Process Group:* Monitor/Con.

Managing procurement relationships and monitor contract performance.

| Inputs   | Tools   | Outputs  |
|--|---|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Agreements</li><li>▪ Procurement Documentation</li><li>▪ Approved Change Requests</li><li>▪ Work Performance Data</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Claims Administration</li><li>▪ Data Analysis</li><li>▪ Inspection</li><li>▪ Audits</li></ul> | <ul style="list-style-type: none"><li>▪ Closed Procurements</li><li>▪ Work Performance Information</li><li>▪ Procurement Documentation Updates</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li><li>▪ Organizational Process Assets Updates</li></ul> |

## Identify Stakeholders

*Knowledge Area:* Stakeholder  
*Process Group:* Initiating

Determining who will be affected by the project and noting their involvement/impact.

| Inputs   | Tools   | Outputs  |
|--|---|--|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Business Documents</li><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Agreements</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Gathering</li><li>▪ Data Analysis</li><li>▪ Data Representation</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Stakeholder Register</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

## Plan Stakeholder Engagement

*Knowledge Area:* Stakeholder  
*Process Group:* Planning

Developing strategies to appropriately engage stakeholders during the project.

| Inputs  | Tools   | Outputs   |
|---|---|---|
| <ul style="list-style-type: none"><li>▪ Project Charter</li><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Agreements</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Data Gathering</li><li>▪ Data Analysis</li><li>▪ Decision Making</li><li>▪ Data Representation</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Stakeholder Engagement Plan</li></ul> |

## Manage Stakeholder Engagement

*Knowledge Area:* Stakeholder  
*Process Group:* Executing

Communicating with stakeholders and addressing issues.

| Inputs   | Tools  | Outputs   |
|--|--|---|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Expert Judgment</li><li>▪ Communication Skills</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Ground Rules</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |

Monitor Stakeholder Engagement

Knowledge Area: Stakeholder

Process Group: Monitor/Con.

Monitoring and adjusting plans for engaging stakeholders.

| Inputs   | Tools   | Outputs  |
|--|---|--|
| <ul style="list-style-type: none"><li>▪ Project Management Plan</li><li>▪ Project Documents</li><li>▪ Work Performance Data</li><li>▪ Enterprise Environmental Factors</li><li>▪ Organizational Process Assets</li></ul> | <ul style="list-style-type: none"><li>▪ Data Analysis</li><li>▪ Decision Making</li><li>▪ Data Representation</li><li>▪ Communication Skills</li><li>▪ Interpersonal &amp; Team Skills</li><li>▪ Meetings</li></ul> | <ul style="list-style-type: none"><li>▪ Work Performance Information</li><li>▪ Change Requests</li><li>▪ Project Management Plan Updates</li><li>▪ Project Documents Updates</li></ul> |