PM4youth

PM4Y™ CURRICULUM

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CURRICULUM OVERVIEW

WELCOME TO PM4Y

Welcome to PM4Y™ (Project Management for Youth), a unique learning experience designed to help students better manage projects. Projects are all around us, and the ability to successfully execute them is crucial to the twenty-first century career. Increasingly, employers will expect incoming job candidates to understand how to run projects from concept to completion—how to think critically, solve problems, and lead a team to deliver results. Projects are important at home, too. Buying a house, planning a trip, hosting a party—all of these are projects that require careful planning.

The goal of PM4Y™ is to teach students basic Project Management concepts and skills using a Project-Based Learning (PBL) approach. This means that students will have the opportunity to apply what they learn by managing a real-world project. As part of the PM4Y™ program, students will learn the same practices used by professional Project Managers around the globe. Students will learn how to initiate a project, build a schedule, manage risk, communicate project status, and much more on their road to project management proficiency.

The knowledge students will gain in this program will be invaluable in college planning and the achievement of their personal and career goals. Instructors will also be able to apply the project management techniques they are teaching to other classes and even to projects they are working on outside of the classroom.

MATERIALS NEEDED

For Each Student:
Index Card
Folder
Pen
Parent Info

Optional:
Snacks

For Each Team:
Materials Bag
4 Paper Plates
1 Two Liter Bottle
3 Sixteen Ounce Water Bottles
4 Plastic Cups
1 CD Jewel Case
4 Toilet Paper Cardboard Rolls
2 Paper Towel Cardboard Rolls
1 Roll Scotch Tape
4 Straws
2 Manila Folders
5 Hair Ties/Elastics
5 Paper Clips
1 Plastic Fork, Knife, and Spoon
5 Index Cards
1 Medium Binder Clip

LESSON 1
INTRO TO PROJECT MANAGEMENT

Lesson Objectives

- Get to know the instructor and other class participants
- Learn how projects differ from everyday work
- Experience the five process groups of Project Management

Skills Employed

- Teamwork
- Communication and Listening
- Project Planning
- Project Risk Management
- Project Time Management
- Working with Constraints

Curriculum

Icebreaker: "Two Truths and an Un-Truth"
Duration: 15-25 minutes
Have the students write two unique truths and one unique un-truth about themselves on the index card you provide. As time allows, have each student read their "two truths and an un-truth" to the group. Students will try to guess which of the three statements is the un-truth.

Activity: Tower Construction
Duration: 25-30 minutes
Divide the group into two or more teams. Each team should have between 4 and 6 participants. The objective of the project is to construct the tallest free-standing tower at the end of the session. The tower must be built using the floor as a foundation (no building on tabletops). In order to build the tower, each team can use ONLY the materials provided to them in the Materials bag (though they are not required to use all of them). They must also adhere to the following Order of Play:

Phase 1 (30 Seconds)
The team may empty the materials bag, but may not touch the materials.

Phase 2 (5 Minutes)
Everyone is allowed to talk, but no one may touch the materials. This is the phase in which the students should plan the rest of the project.

Phase 3 (5 Minutes)
Only one person may touch the materials (but cannot talk). The rest of the team may talk (but cannot touch the materials).

Phase 4 (5 Minutes)
Only one person may talk (but cannot touch the materials). The rest of the team may touch the materials (but cannot talk).

Phase 5 (5 Minutes)
Everyone may both talk and touch the materials.

TEACHING TIPS

When removing materials as a consequence for breaking the rules, start with smaller items like straws and then progress to larger items.

Resist the urge to help the teams beyond clarifying directions. Making mistakes is part of the learning process, and you'll address them as a team in the Debrief.

Taking pictures of PM4Y meetings can be fun for you and the kids, but make sure that you have signed media releases from all the participants and their parents.

LIFE IS A PROJECT

What is a project, and what makes a project different from other kinds of work? For one thing, a project is temporary. It has a defined beginning and end. A project also produces a unique result.

Writing a paper is an example of a project. The project begins when the instructor gives the assignment to the student, and ends when the student turns in the paper for a grade. The end result is the paper itself. It is unique because no other student will turn in the exact same paper.

Nearly all projects have important limits (or constraints) that must be followed for the project to be successful. For example, the instructor may require that the research paper must be turned in by a certain date (a time constraint). They might also stipulate that the paper can be no longer than five pages (a scope constraint). Finally, the instructor may limit the amount of research you can print or photocopy using school resources (a cost constraint).

The Tower Building Exercise, like all projects, had a defined beginning and an end. The goal of the project is to build the tallest tower, but only groups who obey the project constraints can win the game.

Debriefing the Tower Building exercise will give students a chance to think critically about the actions they took, and how they could have planned their project differently to yield greater results.

The following questions will assist the students in the debriefing process:

- Did your team plan a strategy for the exercise, or just dive in and start building?
- How did your team decide what to build?
- How close was your final project to your original plan? What (if anything) changed?
- Did your team decide in advance who would talk/touch in each round?
- What made you feel more frustrated…not being able to talk, or not being able to touch?
- Which was the most important round in the Order of Play?
- Did you consider any risks to building your tower? (e.g., building your tower under an A/C vent or in a high traffic area).

LESSONS LEARNED

After you've taught Lesson 1, record your "Lessons Learned" and content questions here so that future facilitators can learn from your experiences. Remember that you can always contact us with questions or requests for resources: PM4Y@arrowheadconsulting.com

LESSON 2 NOTES

The capstone of the PM4Y™ program is the Class Project. During Lesson 2, students will begin discussing the Class Project in more detail. They will also learn some basic project management concepts and principles to help them plan and execute their Class Project more effectively.

Lesson 2 contains a lot of material, but rest assured that all of the concepts covered in this lesson will be revisited frequently as you progress through the PM4Y™ curriculum. In the beginning, the most important concepts for students to understand are the five project phases (or process groups): Initiating, Planning, Executing, Monitoring/Controlling, and Closing. As you progress through the curriculum, help students think critically about which phase (or phases) apply to the tasks at hand. It may be a good idea to quiz students on one or two PM terms each lesson, either during "brain breaks" or at the beginning of class.

If you did not have time to debrief the Tower Exercise from Lesson 1, you may spend time doing so during Lesson 2, either at the beginning of class or throughout your discussion of the Class Project. Encourage the students to keep all handouts from this Lesson in their PM4Y folders, as these concepts will be referenced often throughout the rest of the program. It may be helpful to have the Project Sponsor or another key stakeholder present to help students understand more about the Class Project and any known parameters regarding scope, cost, and schedule.

MATERIALS NEEDED

Student Brings:
Folder
Pen

Classroom Supplies:
Whiteboard (or equivalent)
Markers (or equivalent)
Class Project details (if available)

You Bring:
Process Groups Handout
Knowledge Areas Handout
Triple Constraint Handout
Project Phases Cards
Crossword Puzzle
Wordsearch

Optional:
Snacks

LESSON 2
PROJECT MANAGEMENT FUNDAMENTALS

Lesson Objectives

- Introduce the Class Project
- Introduce Fundamental PM Concepts and Principles

Skills Employed

- Critical Thinking
- Listening
- Teamwork
- PM Terminology
- PM Introductory Concepts

Curriculum

Tower Debrief
Duration: 5 minutes
Discuss the Tower Activity with the group using the discussion questions provided in Lesson 1. Emphasize the relationship of the Tower Building Activity to the Five PM Process Groups:
Initiating-when the project objectives and "rules" were discussed
Planning-the first 5 minutes when they had to figure out how they were going to execute the project and assignment of resources
Executing-the next 5-10 minutes when they started using their plan
Monitoring/Controlling-throughout execution when they modified/ adjusted their plan
Closing-the debrief session when they discussed what went right and what could have been done better
Optionally, you may choose to debrief the Tower Activity at the end of Lesson 1, or throughout the PM discussion which follows as opposed to at the beginning of the lesson.

Introduce PM Terminology
Duration: 15 minutes
Give students a copy of the PM Terminology handouts (Five Processes, Nine Knowledge Groups, and Triple Constraint). Discuss each one, referencing how each concept relates to the Class Project.

Project Phases Cards and PM Crossword and Wordsearch Activities
Duration: 25 minutes
As a group, have students match a question card to the correct phase card with the Project Phase cards. Afterward, put students in teams of two or three and have students write a prize suggestion on the back of the Crossword/Wordsearch worksheet. Give the students until the end of class to complete the worksheet. The team with the most correct answers by the end of class wins. Collect the worksheets at the end of class and tally each team's correct answers before the beginning of the next Lesson. Award the winning team the prize of their choice.

TEACHING TIPS

You may find it helpful to have a student volunteer draw the Project Life cycle time line on a whiteboard as you discuss terms. Pictures are often worth the 1,000 words needed to describe a concept.

Relate the PM terms and concepts as much to the Class Project as possible, referencing the Tower Building Activity if needed to reinforce learning.

In future lessons, spend a few minutes before class time quizzing the students who show up early on PM terms. Reward students to reinforce knowledge (and early attendance)!

THE TRIPLE CONSTRAINT

The Triple Constraint is a central concept in Project Management. It refers to the natural tension that exists between project management priorities.

A Project Manager's goal is to deliver a quality project, which means we meet the customer's expectations on Scope, Cost, and Time.

The project sponsor determines which constraint is more important to project success based on an assessment of resources and project risks (uncertainties).

For this reason, it is helpful for a Project Manager to know at the outset which aspects of the Triple Constraint are most important to key stakeholders.

The three parts of the Triple Constraint are Budget, Scope, and Schedule. The interplay of the three constraints result in a project's overall quality.

For a project to be successful, the Project Manager must have direct control over at least one aspect of the Triple Constraint. For example, if stakeholders establish a firm "not-to-exceed" budget and insist that no change orders are to be made to the project scope, it is important for the PM to have flexibility over the schedule. Otherwise, quality is will suffer.

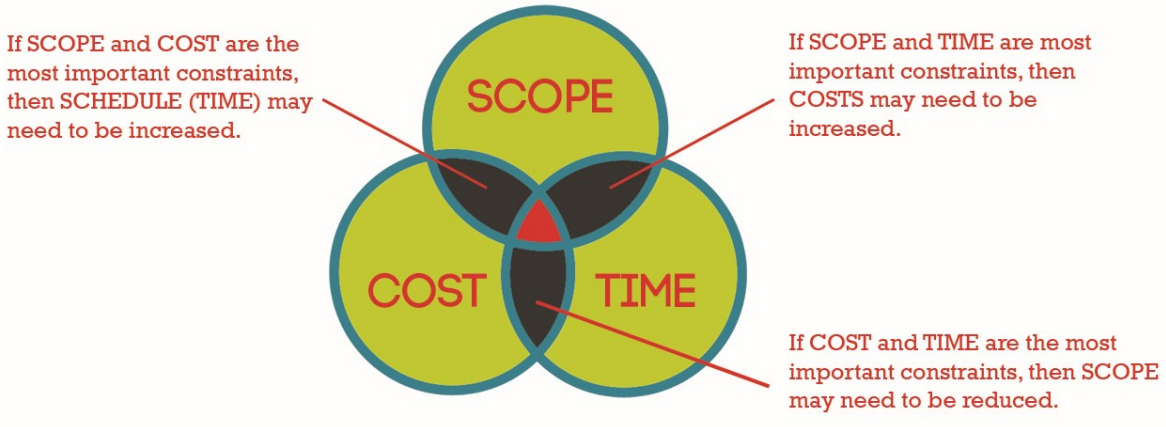
Our experience with most Class Projects has been that budget and schedule are typically the stakeholder priorities, leaving the PM4Y class control over scope. However, this is not the case at all schools so it is important to review the Triple Constraint with both the class participants and sponsor/ stakeholders prior to project planning.

When discussing the Triple Constraint with students, ask them to think about projects in their daily lives (such as submitting a final paper for a class, buying a car, going on vacation). In the examples they list, ask them to think critically about which aspects of the Triple Constraint were most important.

For example, have they ever tried to save up for an expensive item they wanted to buy? In that case, the scope is fixed: the project is to save $X to buy the item they want. The cost is also fixed (unless they are able to find the item on sale). What must be sacrificed in order to legally purchase the item? (Answer: Schedule. They must wait until they accumulate enough money to buy the item).

THE TRIPLE CONSTRAINT

Ideally, a project will meet all planned scope, cost, and schedule baselines (or goals.) Unfortunately, many projects face obstacles that put one or more of these constraints at risk. When this happens, it is important to know which one or two constraints are most important to the stakeholders. For a project to be successful, a Project Manager must have control over at least one part of the Triple Constraint.



LESSONS LEARNED

After you've taught Lesson 2, record your "Lessons Learned" and content questions here so that future facilitators can learn from your experiences. Remember that you can always contact us with questions or requests for resources: PM4Y@arrowheadconsulting.com

LESSON 3 NOTES

The objective in Lesson 3 is to understand the scope of a project and to complete the scope statement for the Class Project.

Whether you are taking a vacation or going to a party at someone's house, having the proper directions are integral in order to get where you want to go. There also could be several different ways to get to the final destination so it's important to review before just setting off on your journey so as to avoid traffic, construction, toll roads, etc.

The same can be said of projects, where a good set of instructions will help the project members be successful and allow them to arrive at the final destination together. Reviewing risks (construction) and costs (toll roads) as well as schedule (traffic) are all important factors to consider.

Reviewing lessons learned, survey results (if available) and feedback from the Sponsor concerning project constraints will assist students in clearly defining what will be included the Class Project. It is also important to identify any "out of scope" items that will not be a part of the project and include those in the scope statement.

Once the scope statement is complete, identify 2 students who will be responsible for presenting the results of the stakeholder survey as well as the project scope statement to the Project Sponsor for approval and sign-off.

MATERIALS NEEDED

Student Brings:
Folder
Pen

You Bring:
Previous lessons learned (if available)
Project Scope cartoon
Scope statement worksheet

Optional:
Snacks

LESSON 3
PROJECT CHARTER & SCOPE MANAGEMENT

Lesson Objectives
- Understand and describe a project charter
- Complete a scope statement

Skills Employed
- Critical Thinking
- Problem Solving
- Listening
- Communication
- Presenting/Presentation

Curriculum

Previous Lessons Learned
Duration: 5-10 minutes
Review previous projects' lessons learned documents and discuss feedback from former project team members and/or sponsors. If this is a first-time Class Project, encourage students to discuss their personal experience (good and bad) with similar types of projects.

The Importance of Instructions
Duration: 5-10 minutes
Instruct the students to "draw a tree swing." After a couple of minutes, ask the student "who drew the red tree swing with the cup holders" or something very specific that likely no one will have gotten close to drawing. Then ask different students to show their ideas and discuss the similarities and differences with the concepts. Use the Project Life Cycle cartoon to illustrate the importance of not only having complete instructions before beginning a project, but also having complete understanding of the objectives.

Project Scope Statement
Duration: 30 minutes
Provide any details regarding timing, location, budget or limitations already obtained from the Project Sponsor. Work with the students to create the project's Scope Statement which will identify the project's directions (i.e. objectives, requirements, acceptance criteria, boundaries, constraints, assumptions, milestones, cost estimates and approval guidelines).

TEACHING TIPS

If previous classes have conducted the same type of project, encourage current students to be creative and offer suggestions that would help their event exceed expectations from prior years.

Make sure to document any tasks that will be considered "out of scope" for the project team and verify who will be responsible for completing those tasks.

This is a good opportunity to assign a more reserved student to the task of presenting the project scope statement to the Project Sponsor. It is important to the success of the project that everyone participate.

THE SILENT ASSASSIN

Assumptions play a vital role in the initiation and planning of a project. Assumptions sometimes have to be made in the absence of fact. Project teams use assumptions to take the foundational idea for the project and begin to craft it into the project scope statement. Those same assumptions left unvalidated, however, have the potential to become risks which can threaten the success of the project.

LESSONS LEARNED

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