

Lee A. Tolbert
Community Academy



**Project Management
Curriculum Unit**
(Grades 7 – 8)

Theme: *“Building project managers for the future.”*

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Overview

This curriculum unit is designed for 7 and 8th grade Project Management class at Lee A. Tolbert Community Academy (LATCA). The unit will cover the (9) Project Management Knowledge Areas and the (5) processes over a nine-week grading period. The class meets once a week and each lesson plan is designed to cover one week of the unit content. Students will learn basic Project Management concepts based on Expeditionary Learning Schools (ELS) where students apply the knowledge learned through real world projects. The students in this course will develop project plans to implement a School Supply store at LATCA.

Rationale

LATCA is an ELS funded by the Gates Foundation. The approach combines rigorous academic content and real world projects referenced as learning expeditions, with active teaching and community service. The ELS design focuses on teaching in an engaging way. Faculty members receive intensive professional development in curriculum, teaching practices, and building a strong school culture. Expeditionary Learning is now being implemented in over 140 urban, rural, and suburban schools.

The information provided in this unit is essential to secondary students for preparation of their future personal lives, high school, college activities and career goals. In 2010, it is estimated that over 75 million baby boomers will have reached the retirement age. The labor force predicts a labor shortage in many businesses and corporations. Students who are taught the skills of project management at an early age will be prepared and equipped with the knowledge required to meet those demands in the workplace.

This curriculum unit was selected because it will fulfill several key fundamental areas and provides the information needed to organize and structure work in a way that things are scheduled and completed accordingly. As students move into high school, colleges, or into the workforce, these skills will prove to be efficient assets to their development and growth. This unit was designed to specifically cover the fundamentals of Project Management and to introduce students to the concepts and potential opportunities in the profession. Students will learn the fundamental processes of effective Project Management and become familiar with the knowledge areas and basic principles as practice by the Guide to the Project Management Body of Knowledge (PMBOK® Guide).

Central Questions

The central questions to be answered through the facilitation of this unit are:

1. What is Project Management?
2. How are projects planned and executed?
3. Why is Project Management an important skill to acquire?

Learning Outcomes

Students will learn how projects are initiated from the onset in addition to learning how to plan a project in detail. Students will develop a project scope statement and schedule of activities for a school project. This knowledge will assist student in making good decisions when establishing credit and provide the content needed to protect their credit rating and manage their debt to keep excellent credit.

Students will be taught to monitor and control their project activities through development of a project status report and learn communications skills by giving a verbal report to the class. The skills acquired in this course will be viable for use in many areas of the students' lives and will give them adequate experience to begin to build a profile for long-term goals of becoming a project manager.

Finally, students will present their project plans to the class and build public speaking and presentation skills. Each student in the group will present a part of the team's project to the remaining students in the class. Students will submit their plans to the school principal for implementation of the School Supply Store.

Real world projects will be discussed throughout the unit lesson for the students to reflect and build the skills being taught. There are a variety of lesson activities both in class and assigned homework to influence their learning and performance. Each lesson plan includes weekly homework assignments that will be evaluated to determine the growth and comprehension level of the students. A final unit assessment will cover material from all lessons to evaluate the students' performance.

Course Format

Students will be divided into three teams with four students each. Each group will create a project plan based on the charter their group is assigned, to present to the class weeks seven and eight. The class structure will be formatted with 20 minutes of presentation of the course materials, 10 minutes of class discussion and 20 minutes of class activities and teamwork to create the aspect of the project plan that was introduced in the class lecture. For example, week one group work will be to create a preliminary scope statement. Any work not completed during the group time will be homework. Each student will be responsible for turning in his or her own aspect of the project plan weekly to be graded.

The instructor role will be that of project sponsor. This role is responsible for providing guidance on project procedures, planning, monitoring, and conflict resolution. As teachers, the sponsor will be available to assist the students with problems or issues with their project development and planning. Students will be assessed through homework assignments, a comprehensive quiz and their final project presentation.

Unit Objectives

By the end of this unit, students will be able to:

Lesson 1: Introduction to Project Management

1. Describe the elements of a project.
2. Recite the nine knowledge areas in project management
3. Evaluate the relationship of the five process groups.
4. Describe a project charter and its importance.

Lesson 2: Scope and Communications

1. Describe the importance of Scope Management.
2. Develop a Project Scope Statement based on project charter – will include description, objectives, deliverables, and assumptions.
3. Identify appropriate communication method.
4. Develop written/verbal communication management plan.

Lesson 3: Time and Human Resources

1. Describe project milestones, phases, activity, and task.
2. Define and develop a simple Work Breakdown Structure.
3. To define roles and responsibilities of project manager, sponsor, stakeholder, team members.
4. To define and create a Responsibility Assignment Matrix (RAM).

Lesson 4: Cost and Procurement

1. Describe why cost is important to project management.
2. Describe the processes of Cost Management.
3. Define Procurement and how it relates to project management.
4. Describe the types of contracts.

Lesson 5: Quality and Risk

1. Evaluate the basic concepts quality and risks in project management.
2. Identify risk factors that might impact projects.
3. Analyze the quality of work in a project.

Lesson 6: Status Reports and Review

1. Describe the importance of status reporting in project communications.
2. Develop a status report.

Lesson Plans

Project Management (Grade 7-8)

Lesson 1: Introduction to Project Management

Lesson Objectives

By the end of this lesson, students will:

1. Describe the elements of a project.
2. Recite the nine knowledge areas in project management
3. Evaluate the relationship of the five process groups.
4. Describe a project charter and its importance.

Materials Needed

Overhead Projector, White Paper, Markers or blackboard with chalk

Handouts: Nine Knowledge Areas and Five Process Groups, Project Charter for the class project/presentations, Preliminary Scope Statement forms.

Procedures

Lesson Introduction

Central Theory Question: How do you think the Sprint Center was built?

The teacher will begin the class by asking students to volunteer what their definitions are of a project and write key words or phrases the students volunteer on the blackboard/overhead. The teacher will discuss the background of the Sprint Center downtown and demonstrate how it relates to project management. The teacher will then ask the students about a school project such as a science or social studies project and describe how project management can be used to facilitate a small and simple project. This is an introduction to the rest of the course material- dividing a project into phases, the nine knowledge areas of a project and the five process groups. The class topics will be supported with handouts describing the knowledge areas and process groups.

The teacher will handout the project charter describing their projects. This will be reviewed by the class and the teacher will place the students in groups of 4 by having them pick a project from the hat! The final project will be explained to the students through discussion and questions.

Instruction Strategies/Learning Activities

Lesson Objectives – Review the lesson objectives with the students to ensure understanding.

Primary Documents – Give the students the project charter handout and the Preliminary Scope Statement handout

Group Activity – Groups of 4 students will be identified. Students will review the project charter and identify the project’s objectives, requirements, acceptance criteria, boundaries, constraints, assumptions, milestones, cost estimate and approval requirements on the Preliminary Scope

Statement handout. This will be a teacher led activity, where the teacher will explain each element and ask the students to identify those elements within the charter.

Interactive Class Instruction – Discuss the following:

- Project objectives
- Project requirements.
- Acceptance criteria.
- Project boundaries- what won't be done
- Constraints and assumptions
- Milestones
- High level cost estimate
- Approval requirements

Assessment – Homework (50 Points)

Each student will complete the preliminary scope statement started in class.

Lesson Plans

Project Management (Grade 7-8)

Lesson 2: Scope and Communication

Lesson Objectives

By the end of this lesson, students will be able to:

1. Describe the importance of Scope Management.
2. Develop a Project Scope Statement based on project charter – will include description, objectives, deliverables, and assumptions.
3. Identify appropriate communication method.
4. Develop written/verbal communication management plan.
 - Lecture on the purpose of defining a clear scope statement which includes the components description, objectives, deliverables and assumptions.
 - Lecture on Communication Management identifying the 4 processes.
 - Distribute the template for the Project Scope Statement and Communication Management Worksheet.
 - Interaction group discussions on project description, objectives, deliverables and assumptions as it relates to the project charter assigned.
 - Interaction group discussion on Communication Management as it relates to the project charter assigned.

Materials Needed

Overhead projector, 'dry erase' markers, eraser, slides or blackboard with chalk, PMBOK

Handouts from previous class: Preliminary Scope Statement

Handouts: Terminology for Project Scope Statement and Communication Management, Project Scope Example, Project Scope Statement Worksheet, Communication Management Worksheet

Procedures

Lesson Introduction

Class will begin with Q & A from homework, collection of homework from previous class and a review of the course syllabus. Allow 5 approximately minutes or less. Handouts will be given for this week's session.

The teacher will begin class by asking students to define scope. The teacher will read the PMBOK definition and write it on the overhead/blackboard. The teacher will then proceed to explain why it is important to define a clear, precise scope statement. This will include going over the components that make up the scope statement which are description, objectives, deliverables and assumptions. The teacher will go over the example in the handout.

The teacher will ask students why they think communication is important to a project. The teacher will read the PMBOK definition of Communication Planning and write it on the

overhead/blackboard. The teacher will explain Communication Management Process is the creation, gathering, sharing, storage, and retrieval of project information. The communication management planning provides important links between people and information. Project managers can spend 90% of their time communicating with the project team, stakeholders, customers, and sponsors. Everyone involved in the project should understand how to communicate affectively on the project. Teacher will go over the 4 components of the Communication Management Process (communication planning, information distribution, performance reporting, manage stakeholders). Teacher will explain the various communication methods and give examples of verbal/written styles.

Finally, the teacher will hand out the Project Scope Statement and Communication Management worksheets. Students will get in their respective groups for in class activities. The deliverables from this class will be to create a Project Scope Statement and Communication Matrix based on the project charter assigned.

Instruction Strategies/Learning Activities (Allow 20 minutes)

Lesson Objectives – Review the lesson objectives with the students to ensure understanding.

Primary Documents – Give the students the Project Scope Statement and Communication Matrix worksheets.

Group Activity – Students will get in their groups of 4. Student’s will review the project charter/ preliminary Scope Statement forms and fill in the Project Scope Statement and Communication Management worksheets. Teacher will walk around to each group to ensure they are on the right track and to answer any questions.

Closure

Clarify homework assignment. (Allow 5 minutes)

Assessment – Homework (100 Points)

Project Scope Statement - 50 points possible – 10 points each for project information, description, objectives, deliverables and assumptions.

Communication Matrix – 50 points possible – communication management plan

Assignment will be due next class.

Lesson Plans

Project Management (Grade 7-8)

Lesson 3: Time and Human Resources

Lesson Objectives

By the end of this lesson, students will be able to:

1. Describe project milestones, phases, activity, and task.
2. Define and develop a simple Work Breakdown Structure.
3. To define roles and responsibilities of project manager, sponsor, stakeholder, team members.
4. To define and create a Responsibility Assignment Matrix (RAM).
 - Lecture on the parts of the Work Breakdown Structure (includes phases, activities and tasks) and definition of a milestone.
 - Lecture on roles and responsibilities of project participants, how to create a RAM and how to create an OBS.
 - Distribute the templates for the WBS, RAM, and OBS.
 - Interaction group discussions on project phase, activity, and task as it relates to the project charter assigned.
 - Interaction group discussion on the roles and responsibilities of project manager, sponsor, stakeholder and team members as it relates to the project charter assigned.

Materials Needed

Overhead projector, 'dry erase' markers, eraser, slides or blackboard with chalk, PMBOK Handouts from previous class: Project Scope Statement and Communication Management Worksheet

Handouts: Terminology of the Communication Process, Communication Methods, Human Resource Management Processes, WBS, RAM and OBS examples, WBS, RAM and OBS worksheets.

Procedures

Lesson Introduction

Class will begin with Q & A from homework, collection of homework from previous class and a review of the course syllabus. Allow 5 approximately minutes or less. Handouts will be given for this week's session.

The teacher will begin class by asking students to define time management. The teacher will read the PMBOK definition and write it on the overhead/blackboard. The teacher will then proceed to define a Work Breakdown Structure and explain the 3 major components (phases, activities, tasks). The teacher will go over the example in the handout. Next, the teacher will define milestones, its purpose in time management and refer to example in handout.

The teacher will ask students for the meaning of human resource management. The teacher will read the PMBOK definition and write it on the overhead/blackboard. The teacher will then proceed to explain why it is important to know the roles and responsibilities of each key player on the project team (project manager, sponsor, stakeholder, team member). The teacher will explain the purpose for and how to create a RAM. The teacher will go over the example in the handout. Next, the teacher will explain the OBS and how to develop one. The teacher will go over the example in the handout.

Finally, the teacher will hand out the WBS, RAM and OBS worksheets. Students will get in their respective groups for in class activities. The deliverables from this class will be to create a WBS, RAM and OBS based on the project charter assigned.

Instruction Strategies/Learning Activities

Lesson Objectives – Review the lesson objectives with the students to ensure understanding.

Primary Documents – Give the students the WBS, RAM and OBS worksheets.

Group Activity – Students will get in their groups of 4. Student's will review the project charter/ preliminary Scope Statement forms and fill in the WBS, RAM and OBS worksheets. Teacher will walk around to each group to ensure they are on the right track and to answer any questions.

Closure

Clarify homework assignment.

Assessment (50 Points)

Work Breakdown Structure

Responsibility Assignment Matrix (RAM)

Lesson Plans

Project Management (Grade 7-8)

Lesson 4: Cost and Procurement

Lesson Objectives

By the end of this lesson, students will be able to:

1. Describe why cost is important to project management.
2. Describe the processes of Cost Management.
3. Define Procurement and how it relates to project management.
4. Describe the types of contracts.

Materials Needed

Overhead projector, 'dry erase' markers, eraser, slides or blackboard with chalk

Handouts: Cost Management Processes, Procurement Management Processes, and Cost Procurement Worksheet

Procedures

Lesson Introduction

The teacher will begin the class by asking students to volunteer their definition of costs and write key words or phrases the students volunteer on the blackboard/overhead. The teacher will then read the PMBOK definition and write down the key points (Cost: The monetary value or price of a project activity required to perform and complete the activity.)

The teacher will then distribute the handouts and bring up large projects such as building the Sprint center downtown and ask the class what costs were involved in the project. This is an introduction to the rest of the lesson material-dividing cost and procurement into processes. The cost processes are Cost Estimating, Cost Budgeting and Cost Control. The procurement processes are Plan Purchases and Acquisitions, Plan Contracting, Request Seller Responses, Select Sellers, Contract Administration, and Contract Closure.

Finally, the teacher will allow 20 minutes of group time to develop cost and procurement plans based on the project plan.

Instruction Strategies/Learning Activities

Lesson Objectives – Review the lesson objectives with the students to ensure understanding.

Primary Documents- Give the students all handouts: Cost Management Processes, Procurement Management Processes, and Cost Procurement Worksheet

Whole Class Instruction – Discuss the handouts and the inputs they have from their project plan that they can use to develop the cost and procurement plans.

Group Activity –Groups of 4 students will be identified. Students will review the project plan and identify the project's cost plan based on resources and materials. Then a procurement plan will be started to acquire the resources and materials.

Whole Class Instruction – Discuss the following: Ask each group to present their findings and explain why this person was selected.

Closure

Clarify homework assignment. Complete the cost and procurement worksheet with materials needed for the store.

Assessment – Homework (25 Points)

Each student will complete the cost and procurement worksheet started in class.

Modifications

There are no modifications at this time.

Lesson Plans

Project Management (Grade 7-8)

Lesson 5: Quality and Risk

Lesson Objectives

By the end of this lesson, students will be able to:

1. Evaluate the basic concepts quality and risks in project management.
2. Identify risk factors that might impact projects.
3. Analyze the quality of work in a project.

Materials Needed

Overhead projector, 'dry erase' markers, eraser, slides or blackboard with chalk, PMBOK Handouts from previous class: Project Scope Statement and Communication Management Worksheet

Handouts: Quality Fundamentals, Risk Assessment Worksheet, Risk Processes

Procedures

Lesson Introduction

The teacher will begin the class by asking students to volunteer what their definitions are of a quality and risk and write key words or phrases the students volunteer on the blackboard/overhead. The teacher will then read the PMBOK definition and write down the key points (Risk: Uncertain event or condition, positive or negative impact. Quality: Satisfies the need).

The teacher will then distribute the handouts and then bring up large projects such as building the Sprint center downtown and ask the class what risks and quality needs were involved in the project. This is an introduction to the rest of the lesson material- dividing quality and risk into steps. The quality steps are planning, assurance and control. The risk steps are: risk management planning, risk identification, qualitative risk analysis, quantitative risk analysis, risk response planning, risk monitoring and control.

Finally, the teacher will allow 20 minutes of group time to develop the quality and risk plan based on information from the project charter.

Instruction Strategies/Learning Activities

Lesson Objectives – Review the lesson objectives with the students to ensure understanding.

Primary Documents – Give the Students all handouts: Quality Fundamentals, Risk Assessment Worksheet, and Risk Processes

Group Activity – Groups of 4 students will be identified. Students will review the project charter and identify the project's quality and risk plans. This will be a teacher led activity, where the

teacher will explain each element and ask the students to identify those elements within the charter.

Interactive Class Instruction – Discuss the following:

- Quality planning
- Quality assurance
- Quality control
- Risk management planning
- Risk identification
- Qualitative risk analysis
- Quantitative risk analysis
- Risk response planning
- Risk monitoring and control.

Closure

Clarify homework assignment. (Allow 5 minutes)

Assessment – Homework (50 Points)

Each student will complete the preliminary quality and risk plan started in class.

Lesson Plans

Project Management (Grade 7-8)

Lesson 6: Status Report and Review

Lesson Objectives

By the end of this lesson, students will be able to:

1. Describe the importance of status reporting in project communications.
2. Develop a status report.

Materials Needed

Overhead projector, 'dry erase' markers, eraser, slides or blackboard with chalk, PMBOK

Handouts from previous class: Procurement and Cost Worksheets???

Handouts: Terminology for sections of Status Report, Status Report worksheet.

Procedures

Lesson Introduction

Class will begin with Q & A from homework, collection of homework from previous class and a review of the course syllabus. Allow 5 approximately minutes or less. Handouts will be given for this week's session.

The teacher will begin class by asking students to explain the purpose of status reporting.

The teacher will read the PMBOK definition and write it on the overhead/blackboard. The teacher will explain the sections of the status report (project summary, accomplishments, items waiting for response or action, action planned items and red flags). The teacher will go over the example in the handout.

The teacher will review for quiz. The teacher will 'hint' at what to know for quiz. Students should have all information needed to prepare for quiz in the handouts from previous classes.

Finally, the teacher will hand out the Status Report worksheet. Students will get in their respective groups for in class activities. The deliverables from this class will be to write and verbally give a status report on the project charter assigned.

Instruction Strategies/Learning Activities

Lesson Objectives – Review the lesson objectives with the students to ensure understanding.

Primary Documents – Status Report worksheet.

Students will get in their groups of 4. Students will review all previous work produced from assigned project charter to date. Students will fill out status report worksheet in preparation to give it at the end of class. Teacher will walk around to each group to ensure they are on the right track and to answer any questions.

Closure

Reminder of quiz in week seven. (Allow 5 minutes)

Assessment – Homework (50 Points)

Students will prepare a written status report give a verbal presentation of the report in class.

Unit Culminating Activity

Project: School Supply Store

Each team will be assigned a project charter with objectives and requirements to complete the project plans for their project. The purpose of a Project Charter is to provide an understanding of the project and the reason it is being done and to establish the project scope and authority. Students will be chartered to complete the planning for one of three departments in the school supply store based on the following project objectives:

- To develop the project plans required for the School Uniform Store for the LATCA school by the end of this quarter.
- To develop the project plans required for the School Supply Store for the LATCA school by the end of this quarter.
- To develop the project plans required for the Logo Store for the LATCA school by the end of this quarter.

RUBIC

- A** Student work is very thorough. The key ideas are developed and appropriate sources have been researched and all aspects of the assignment have been fully addressed.
- B** Student work is thorough. The key ideas are developed and the sources used are mostly complete. All aspects of the assignment have been fully addressed.
- C** Student work is somewhat thorough. The key ideas are somewhat developed and sources are used. Many of the aspects of the assignment have been adequately addressed.
- D** Student work is not very thorough. The ideas are sketchy in places, and the sources and justification are lacking. The assignment has been incompletely addressed.
- F** Student work is sketchy and incomplete. Little or no effort has been applied to the assignment.

Unit Evaluation – Summative Assessment

Project Management

Multiple Choice (5 points each)

1. Which below provides the best definition of a project?
 - a) Projects have a definite beginning and end
 - b) Projects create a finished product
 - c) Every project is unique
 - d) All of the above
2. Which of the following are Project Management processes?
 - a) Planning and develop processes
 - b) Analyzing and evaluate processes
 - c) Planning and Executing processes
 - d) None of the above
3. Your project _____ statement tells you what must be done, how it must be done and what objectives or specifications must be met.
 - a) assumption
 - b) resource
 - c) scope
 - d) constraint
4. Meetings and conversations are an example of which communication method?
 - a) Formal written
 - b) Formal verbal
 - c) Informal written
 - d) Informal verbal
5. Something you think that is real or true in your project but are not sure of is called an _____.
 - a) Assumption
 - b) Resource
 - c) Scope
 - d) Constraint
6. If you guess how much time or money you need it is called an _____.
 - a) Estimate
 - b) Duration
 - c) Level of effort
 - d) Process
7. Which of the following is not a part of the Work Breakdown Structure (WBS)?
 - a) Activity
 - b) Time

- c) Tasks
 - d) Steps
8. What is the purpose of the Responsibility Assignment Matrix (RAM)?
- a) To assign roles and responsibilities for specific activities
 - b) To assign roles for someone to act out in a project
 - c) To assign responsibilities for the project manager
 - d) None of the above
9. A project schedule is the _____ of when things will happen in a project.
- a) Specification
 - b) Order
 - c) Group
 - d) Activity
10. Sometimes things don't go right in a project so you have to plan for project _____.
- a) Risk
 - b) Quality
 - c) Specification
 - d) Step

Matching (1 Point each)

Process Group	Definition
a. Initiating	b. Development of the scope statement, deliverables, assumptions for the project.
b. Planning	c. Progressive work on the tasks in the project schedule
c. Executing	e. Wrapping up to make sure everything is done in the project
d. Monitoring and Controlling	a. Development of an idea and creating a charter to get the project done.
e. Closing	d. Making sure everything in the project happens as it is scheduled with quality and within cost.

Fill in the blank for each of the (9) knowledge area definitions (5 points each).

Communication	Human Resources	Integration
Procurement	Quality	Risk
Scope	Time	Cost

1. **Integration** puts all of the other areas to work together throughout the project.
2. **Scope** tells you what is included in your project and tells how you should control and to manage it.

3. **Time** keeps track of how the tasks in your project are scheduled and when they should be completed.
4. **Cost** keeps track of how much you spend on your project in order to keep your budget on schedule.
5. **Quality** is done to make sure what your project does is done right the first time.
6. **Human Resource** tells you who is working on the project and what are their responsibilities.
7. **Communication** is the way you keep people informed about the project through written or verbal reports.
8. **Risks** are things that can go wrong in a project and tells you what to do if those things happen.
9. **Procurement** is how to plan for the list of things you might have to buy from a vendor or store for the project.

Bonus (10 points):

Why is defining the scope of the project important?