

TIC

Teachers In Construction

Building and Construction

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Philosophy: All students can learn in a supportive and challenging environment where dreams become careers.

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Table of Contents

	<u>Page</u>
Curriculum Overview	3
Summary Chart	4
Section One (Personal Development)	5-7
Section Two (Career Development)	8-10
Section Three (Technological Development)	11-13
Transfer Activity (Building a Dream House)	14
Appendix	

Building and Construction Curriculum Overview

Summary

This module is a cross-curriculum unit of career orientation and development, personal development, and use of technology as a learning tool, integrated with the basic learning skills. Construction or Building Trades is the art or business of constructing, raising, and establishing buildings. Construction or Building Trades is a particular means of livelihood, usually manual or mechanical, which a person learns and engages in building using personal, career, and technological skills.

Big Picture

Teachers work with construction specialists for educational support to enhance further awareness of needed applied real-life competencies. They work together to transfer and associate basic academic skills learned in the classroom to those needed or used on the job.

Preparation for the Unit

1. A variety of appropriate assessment techniques, including both performance-based and criterion-based data are used in the various areas of learning to diagnose basic competencies and technological skills of the student.
2. Integrate the module within the regular curriculum lessons.
3. Motivate the students to actively participate and produce quality work.
4. Implement multi-media delivery of lessons.
5. Provide a timeline.
6. Develop a bill of materials.
7. Insure quality control.
8. Focus on active learning.
9. Conduct final inspection.
10. Inform parents of goals and objectives of the module.
11. Multi-media services are available to support learning.
12. Provide ample quality and variety of materials or supplies for instruction.

Overview

On the following page is a module overview with a brief summary of each Authentic Learning Task (ALT) in this module. This table provides an overview of the tasks in the module sections and shows how the activities in the different teaching areas relate to each other.

Building and Construction Curriculum Unit Summary

Personal Development	Career Development	Technological Development
ALT 1-Look at Me Students will become aware of strengths and weaknesses.	ALT 1- Safety in the Workplace Students identify hazards of power equipment	ALT 1- Research Activity Students research availability of jobs.
ALT 2- Planning Ahead Students sequence life experiences to create a resume.	ALT 2- Guest Speaker Students observe a guest speaker from the business world.	ALT 2- Tool Recognition Identifying tools used for a job.
ALT 3 – Clustering Use of graphic organizers.	ALT 3- Field Trip Students take a trip to an employer.	ALT 3- PowerPoint Presentation Students create a PowerPoint presentation showing a previous completed work.

Transfer Activity I

The students will design their very own dream house using the personal, career, and technological skills learned in this unit.

Transfer Activity II

The students will design and use graphic organizers to choose a career. The student will analyze and complete a self-assessment, investigate career options. Students then tentatively match their skills, abilities, and educational options to a specific career.

Section One: Personal Development

ALT One: Look at Me

Summary

The student will evaluate their different strengths and weaknesses. Taking a “Look at Me” gives students the opportunity to reflect on a person’s qualities and accomplishments.

Competencies

Communication skills (oral and written), organizational skills, and observation skills

TIME

Approximately one class meeting.

Materials

“Look at Me” worksheet

Instructions

1. The students will write down activities that are easy and difficult for them to accomplish.
2. The students look at what they have accomplished and project into the future what they would like to learn.

Evaluation

The teacher will use observation to make sure that that the students are completing the activity.

Closure

Students will evaluate their weaknesses and strengths.

Section One: Personal Development

ALT Two: Planning Ahead

Summary

The student will learn to plan ahead. They will recognize and increase their likelihood of success while having time for revisions and improvement.

Competencies

Organizational Skills, study skills, basic writing skills, sequencing skills, application skills

Time

Approximately two class meetings.

Materials

Copy of building plan form, procedures & directions for given project.

Instructions

1. The teacher will assign given class project.
2. The teacher will explain procedure for project.
3. The teacher will model examples.
4. The teacher will provide students with building plan forms.
5. Students write what they need to complete the project.

Evaluation

The teacher will use observation as an informal assessment tool.

Closure

Students evaluate and then plan after completing the project and revise their predictions.

Section One: Personal Development

ALT Three: Clustering

Summary

The student will use a graphic organizer to formulate several solutions to an identified problem.

Competencies

A sense of interdependence and social skills that help students share leadership, communicate effectively, build trust, and manage conflict.

TIME

Approximately two class meetings.

Materials

Graphic organizers, overhead and transparency, a given problem

Instructions

1. Distribute individual copies of graphic organizers on the overhead for group practice.
2. Teacher will provide modeling and discussion.
3. Choose a common activity and model each step.
4. Brainstorm ideas and write them on the organizer.
5. Help students analyze their responses.
6. Student independent practice.

Evaluation

The teacher will use observation as an informal assessment tool, evaluating students connecting ideas and information.

Section Two: Career Development

ALT One: Safety in the Workplace

Summary

The student will formulate basic good proactive and reactive safety habits they may face in the workplace.

Competencies

1. Students will enter workplace with safety awareness.
2. Students will have a safety checklist before starting any job.

Time

Approximately two class meetings.

Materials

Tools and construction materials

Instructions

1. The teacher will explain the correct use of a tool for a give job.
2. The teacher will orally and visually train the use on how to properly use a given tool.
3. The students will check and maintain equipment regularly so that injuries can be avoided.
4. The student will insure that while machines are being used proper protective equipment will be used.

Evaluation

The teacher will visually supervise and check off students that have demonstrated the correct safety procedures for the given piece of equipment or job.

Closure

At the end of the nine weeks the students will meet individually with the teacher for evaluation or review.

Section Two: Career Development

ALT Two: Speaker-Listening Activity

Summary

The student will be asked to attend a presentation by an invited personnel manager to speak about construction job availabilities, future job responsibilities, job applications, and the interview process.

Competencies

Preparation to work, listen, learn, communicate, developed oral and written communication skills, and complete job applications

Time

Approximately one class meeting.

Materials

List of personal directors of local businesses, application forms, and resumes of students

Instructions

1. Student will listen to instruction of speaker.
2. The student will actively participate in a “question and answer” session led by the speaker.
3. Students will read and complete the components of an employment application.
4. Students will examine, read, and discuss their own personal resume.

Evaluation

The teacher will evaluate student feedback pertaining to presentation and evaluation, correspondence with speaker, and quality of completed application.

Closure

The resume and group discussion will be the closure activity.

Section Two: Career Development

ALT Three: Field Trip

Summary

The students will participate in periodic scheduled field trips to obtain career information and planning. The student will acquire the knowledge and skills necessary to obtain and maintain employment.

Competencies

Organizational skills, listening skills, communication skills being observant, demonstrating adequate, acceptable, age appropriate behavior

Time

Approximately one class meeting.

Materials

Transportation, list of area construction businesses to visit, student trip permission forms

Instructions

1. The students will develop an awareness of visitation site and its expectations.
2. The students will listen and read agenda for the trip.
3. The students will prepare possible questions to ask at the site.
4. The students will write a summary of observations made during the field trip.

Evaluation

The teacher will evaluate written and oral report of the field trip given by students.

Closure

Assign follow-up reports and correspondence. Group discussions of observations made at individual sites.

Section Three: Technological Development

ALT One: Research Activity

Summary

The student will use the Internet to research and present to the class information about a chosen career.

Competencies

Organizational Skills, basic writing skills, sequencing skills, application skills, computer skills

Time

Approximately two weeks of class meetings.

Materials

Computers with Internet

Instructions

1. Students choose a career that they are interested in pursuing.
2. Students use the Internet to find out a job description, availabilities, education or training needed, personal characteristics, job locations, opportunities for advancement, salary estimates, and future outlook.
3. Students take this research and create either a written or electronic portfolio.

Evaluation

The teacher will evaluate the student on the how in-depth the students answer the student answers questions in the portfolio presentation.

Closure

Students evaluate the effectiveness of each other's presentations in a constructive manner.

Section Three: Technological Development

ALT Two: Planning Ahead

Summary

The students will be able to identify commonly used tools in construction and manufacturing.

Competencies

Approaches practical problems by choosing appropriate tools for a given task.

Time

One hour for five days

Materials

Tool Identification Sheet

Instructions

1. The teacher through visualization will identify each of the tools.
2. The teacher will explain the proper use and storage of each tool.
3. The teacher will advise safety procedures and OSHA regulations.
4. The students will provide verbal feedback and be afforded the opportunity to ask questions.

Evaluation

The teacher will give the students a three-part test, which will consist of matching a tool and its proper use.

Closure

The teacher will redistribute student evaluations to students and will the most commonly missed tools (top 25%).

Section Three: Technological Development

ALT Two: PowerPoint Presentation

Summary

The students will create a PowerPoint presentation showing how to complete a given construction related task learned in class.

Competencies

Organizational Skills, Communication Skills, and PowerPoint Skills

Time

Approximately two weeks of class meetings.

Materials

Building Materials (wood, nails, screws), Tools, computer with PowerPoint

Instructions

1. Teacher chooses or allows students to choose a project learned in class.
2. Students complete projects and take digital pictures at different points during the project.
3. Teacher demonstrates to students how use PowerPoint.
4. Students are given an opportunity to practice working on PowerPoint by being asked to create three slides of their choice.
5. Students are then given time to create their more extensive PowerPoint project.
6. Students orally present their PowerPoint presentation to the class.

Evaluation

The teacher will create a rubric and grade students on the content of the final project itself, the PowerPoint project, and the presentation of the PowerPoint project.

Closure

Students in the audience write down constructive positives and negatives that they saw in their fellow students presentations.

Transfer Activity: Building a Dream House

Summary

The students will create a model of their dream house using the personal, career, and technological skills learned in this unit.

Competencies

Organizational skills, communication skills, PowerPoint skills, measurement skills

Time

Approximately a week of class meetings.

Materials

Building Materials (wood, nails, screws), Tools, computer with PowerPoint

Instructions

1. The students will use the Internet to research various models of houses to get general ideas.
2. The students will work together in groups to discuss and choose specific jobs in building their model homes.
3. The students will use specific tools to measure, cut, and put together.
4. The students will create an expense summary of how much the model cost to build compared to what the real cost of the home would be.

Evaluation

The teacher will create a rubric and grade students on the content of the final project itself, and the effort put forth in its completion.

Closure

Students will share the positives and negatives of their house informally with the class.

Resources

1. Business Behavior
By Allen R. Russon, 3rd edition
2. Career Choices and Education
By Linda O'Brien
Wood burn Press Copyright 2001
3. Graphic Organizers
Creative Teaching Press
4. ISUS Handbook
ISUS Chartered Public High School
5. Problem of the Week A Fresh Approach to Problem Solving
By Linda Griffin and Glenda Moss
6. Vocational Education Course of Study
Dayton Public Schools