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Clearfield Area High School

Lesson Plan

Program: Construction Technology

Unit: Roofing

Lesson Title: Shingle application

Terminal Objective: Upon completion of the this lesson, the students should be able to:

1. Identify and use new terms associated in the lesson. 1.1.11 G&F
2. Calculate the amount of material required to finish the project by using the necessary formulas. 2.5.11A
3. Measure the project in order to check the calculated amounts. 2.3.11A
4. Read the instructions in order to complete the given project. 1.1.11G
5. Verbally explain the processes needed to complete the given task. 1.6.11D&E
6. Listen to verbal instruction or tips about how to complete the given project. 1.6.11A
7. Do necessary research in order to select the appropriate materials needed for the job. 1.2.11B
8. Prepare a specific list of materials needed to complete the project or task. 1.4.11B
9. Successfully complete the given task.

Enabling Objectives: The students should be able to complete the given task by using:

1. Knowledge attained through lectures, demonstrations and research.
2. The appropriate tools and materials.
3. Communication skills and teamwork.

Introduction: (Time 15-20 minutes)

This lesson is designed to educate the students about the application of shingles to roofing system.

The introduction will explore some of the different systems through brainstorming. The students will be required to verbally identify as many deterrent types of materials used as possible. (This list will probably include metal, fiberglass, asphalt, and wood act.)

After the brainstorming session, the instructor will lead a discussion about the ideas set forth in the previous brainstorming activity.

Body/ Main Content: 60 min

- I. Read a copy of the instructions found on the package.
 - a. Identify new terms
- II. Explain the calculation processes involved in ordering of purchasing material.
 - a. How many bundles per square?
 - b. How many sq feet in a square?
- III. Identify products that should be present before starting.
 - a. Drip edge
 - b. Storm shield
 - c. Roofing felt 15 or 30 lb.
- IV. Laying the row of starters.
 - a. Where to nails

- b. How many nails
- V. Cutting the rake to stagger the seams.
 - a. Use of a framing square and a utility knife.
 - b. How much to cut off for each row
 - c. Using the excess material to end the row.

- VI. Application of the shingles.
 - a. How many nails to use.
 - b. Alternative application processes.
 - c. Air mailers vs. Hammer and nails

Summary: 5-10 minutes

I. Review

- a. How many sq feet are in a square of shingles? 100
- b. How many bundles are in a square? 3-4 depending on the manufacturer.
- c. How much is removed from the starter? None
- d. How is the starter laid? Upside down
- e. How many nails per shingle? 3-4 above the tabs
- f. How much is removed from each row in order to create a rake? 6 inches
- g. When is felt, drip edge and storm shield applied? Prior to the shingles.