

**Lesson Plan**  
**For *The Cube***

**Unit number and title: 1.0- Cube**

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**Short Description:** Students will Draw Project Plans for a **Cube** which will then be fabricated as a usable esthetically appealing covered box in the Woodshop.

**TEACHER: Teacher Prep/ Lesson Plan**

- **Lesson Objectives**

1. Students sketch and Draw Cubic Box dimensionally accurate to be built in Woods
2. Upon instructors description students can construct a mock up of the the cube using thick cardboard.
3. Students will be able upon completion of lab be able to determine the accurate dimensions for cube using different wood stock dimensions.
4. Box must have removable top and comply with cube parameters.
5. Students draw 4 views, Top, Front, Side and Oblique view of Cube.
6. Students will Construct in Woodshop a perfect Cube. All finished dimensions must be the same.

- **Statement of pre-requisite skills needed**

1. Students need to be able to read tape measure and ruler to 1/16 accuracy.
2. Students need to be able to add and subtract simple fractions.
3. Students will have had previous units on sketching and drawing of 4 views of objects.

- **Strategies and Design perimeters**

- Students will be given samples of different thicknesses of wood which can be used to construct a cube
- Bottom of cube must not be visible from the sides.
- **New Vocabulary:**
- Cube,
- Inside and outside dimensions.
- Scale drawings
- Materials used graph paper ruler pencils

**Math: EALR 1: The student understands and applies the concepts and procedures of mathematics.**

**COMPONENT 1.2: Understand and apply concepts and procedures from measurement.**

**1.2.1 Understand the relationship between change in one or two linear dimension(s) and corresponding change in perimeter, area, surface area, and volume. W**

**EXAMPLES**

- EX Determine and/or describe the impact of a change in two linear dimensions on perimeter, area, surface area, and/or volume.
- EX Describe how changes in one or more linear dimensions affect perimeter, area, and/or volume in real-world situations.
- EX Determine the change in one or more linear dimensions given a change in perimeter, area, surface area, and/or volume.

**COMPONENT 1.3: Understand and apply concepts and procedures from geometric sense.**

**1.3.1 Understand the properties of and the relationships among 1-dimensional, 2-dimensional, and 3-dimensional shapes and figures. W**

**EXAMPLES**

- EX Make and test conjectures about 2-dimensional and 3-dimensional shapes and their individual attributes and relationships using physical, symbolic, and technological models.
- EX Use the relationship between similar figures to determine the scale factor.
- EX Match or draw a 3-dimensional figure that could be formed by folding a given net.

**1.3.2 Use the properties of and relationships among 1-dimensional, 2-dimensional, and 3-dimensional shapes and figures including prisms, cylinders, cones, and pyramids. W**

**EXAMPLES**

- EX Match or draw 3-dimensional objects from different views using the same properties and relationships.
- EX Sort, classify, and label prisms, cylinders, cones, and pyramids.

**Reading:**

**Component 1.2 Use vocabulary (word meaning) strategies to comprehend text.**

**1.2.2 Apply strategies to comprehend words and ideas.**

- Use word origins to determine the meaning of unknown words.
- Use vocabulary strategies to understand new words and concepts in informational/expository text and literary/narrative text.
- Use graphic features to clarify and extend meaning.

**Writing: Component 3.3: Knows and applies writing conventions appropriate for the grade level. W**

**3.3.1 Uses legible handwriting.**

- Produces readable printing or cursive handwriting (e.g., size, spacing, formation, uppercase and lowercase).

**1. Set-up information (Remind students to follow these basic rules.)**

- Students are to draw all plans neatly with accurate line connections. Keep erasers to a minimum. All fractional dimensions need to be 100% accurate.
- All drawing will be done to scale
- **Teacher Assessment of student learning (scoring guide, rubric)**
  - Student's drawings are to scale 1 to 1
  - All lines are clearly drawn and dimensions are labeled
  - All overall dimensions add up to equal numbers to comply with cubic requirements.
  - Top of Box has system to secure it in place while upright.
- **Summary of learning**
- Students learn to visualize object, sketch and draw object, eventually build object, finish ( sand, stain, clear coat ) esthetically and take object as potential gift.
- **Optional activities**
  - Students can line the box with cloth material
- **Career Applications**
  - Opportunities in Cabinetry, Furniture making, and General Carpentry

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