

D.I.Y. SHED-ROOF NATIVE BEE HOUSE PLANS

University of Idaho
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Kootenai County
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Created by the Idaho Master Gardener Program, Kootenai County
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General Objectives: measuring, marking, empowerment using power tools, accurate cutting, speed square, table saw, CAD technology, predrilling (correct sizing to match predrilled holes) brad nailer (safety, pressure alignment) sequence of events. Common Core Standards on page 2.

INSTRUCTIONS

CUT LIST

Pre-cut the following lengths for each student (from a 1x8x72 pine or cedar board), describe shapes:

- (1) 24"
- ① 10.25"
- (1) 7.25"
- (1) 5.75"

TASK: MAKE SIDES

- >Student takes 24" board and marks the center
- >Student marks a 15d angle to divide the board into 2 side pieces
- >Student cuts board in half using Miter Saw, set at 15d angle SKILLS
- ② Measuring
- Marking
- >Miter Saw
- >Understanding how to cut accurately (ON MARK = cuts kerf in 1/2; BESIDE MARK = lose length on cut side)

TASK: RIP BACK

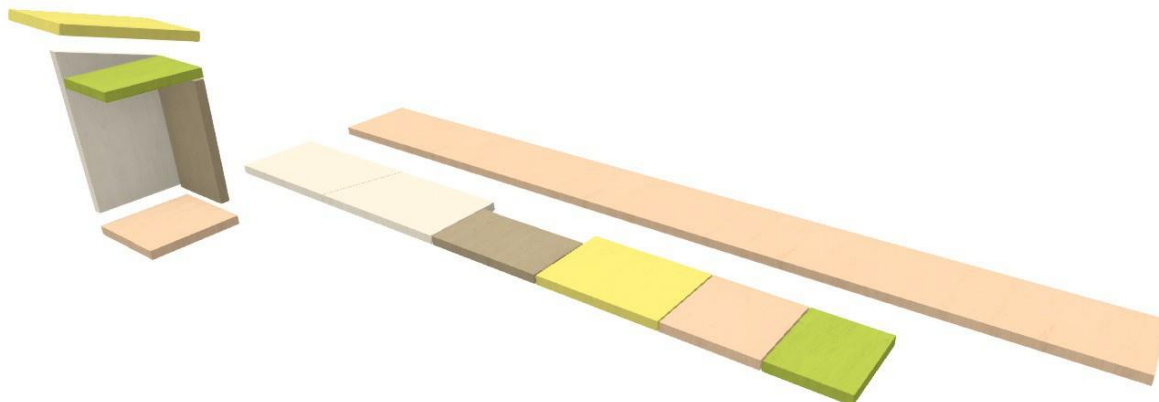
- >Student uses speed-square to mark back board 5.75" wide
- >Student uses Table Saw to rip board to length SKILLS
- ③ Marking with speed-square
- >Using Table Saw

TASK: EMBELLISHMENT

- >Student works with laser engravers to add decoration to pieces SKILLS
- ④ CAD/CAM EXPERIENCE

TASK: ASSEMBLY

- >Student uses Brad Nailer (or drill and screws) to affix sides onto bottom. The high front of each side piece should align with the front of the bottom board. Sides sit on top of Bottom
- >Student affixes back (between sides, on top of bottom)
- >Student affixes shelf (between sides, on top of back)
- ⑤ Student affixes roof (flush with back if it is to be wall mounted, back overhang if it is to be post mounted) SKILLS
- Ply Fitting Pieces
- >Pre-drilling to prevent checking, choosing drill bit size for screw size
- >Driving Screws (maintaining constant pressure to prevent stripping screw head)
- >Using Brad Nailer (safety, pressure, alignment)
- >Following a sequence of events



Common Core Content Standards achieved by this project

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Safety

Use appropriate tools strategically and safely when supervised
Operation and concepts

Technology

Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.

Math

Counting and Cardinality

Number and Operations – Fractions

Ratios and Proportional Relationships

Measurement and Data, length of objects as a whole number of length units by comparing pieces of cut wood

Geometry

Connect mathematics with the physical world

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

Describe and compare measurable attributes

Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts, and other attributes (vertices and corners of finished product, lining up correctly)

Understand place value.

Geometric measurement: Understand concepts of area and relate area to multiplication and to addition

Recognize area as an attribute of plane figures and understand concepts of area

measurement – depth of bee house, match to the “why” - Geometric measurement: Understand concepts of angle and measure angles

Solve real-world and mathematical problems involving area, surface area, and volume

Science

Organization for Matter and Energy Flow in Organisms: All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.

Natural Resources

Growth and Development of Organisms

Interdependent Relationships in Ecosystems

Computer Science

Data and analysis

Communication and collaboration

Critical thinking, problem solving, decision making