Getting Started

Secure the Miter Box to a Table

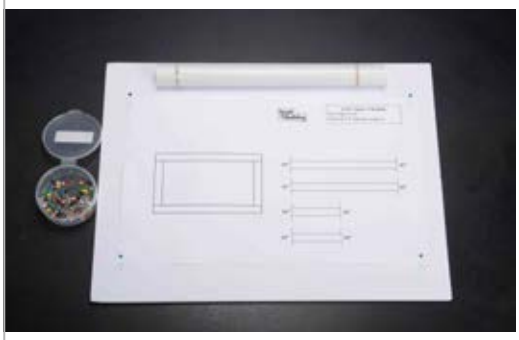
The table you select to mount the miter box should be approximately waist height for the student cutting.

Cutting is always done in a standing position.

Place the miter box at the edge of the table.

Use the 2-inch C clamps to secure the miter box to the edge of the table.

Place the 2-inch C clamps at each end of the miter box base. Tighten the clamps to prevent the miter box from moving on the table when cutting a wood strip.

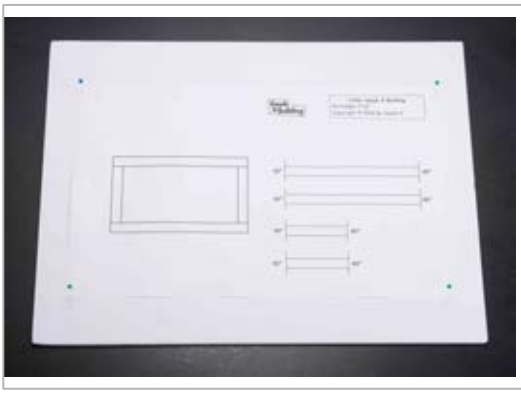


Prepare the Blueprint

Place the foam core board on the table.

Place the **desired** shape blueprint on the foam core board.

Note: Begin with rectangles and squares.



Cover the blueprint with wax paper to prevent the wood strips from sticking to the blueprint when it is time to glue.

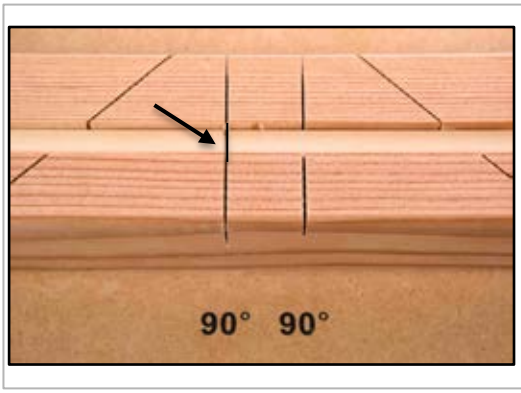
Pin the blueprint and the wax paper to the foam core board. Pins are placed at a 90-degree angle in the board.

Safety and Cutting Tips

Wood strips are measured directly on the project blueprint and then brought to the miter box to cut.

Always wear safety glasses when cutting at the miter box.

Wood strips are cut with the hobby saw at 90 or 45 degree angles **as indicated** on the project blueprint.



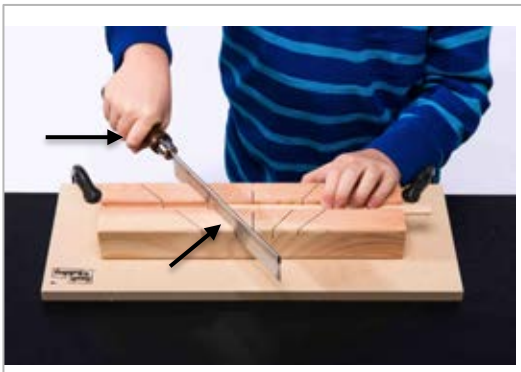
Place the measured wood strip in the miter box slot.

Align the measured pencil mark on the wood strip with the correct angle on the miter box as indicated on the project blueprint.

If placed correctly, the pencil mark will connect to form a straight line in the saw guide.

Fingers on your free hand will hold the wood strip in place in the miter box slot while you cut the strip with the saw. Keep fingers at a safe distance from the saw blade.

The saw blade should remain in the appropriate saw guide while cutting the wood strip on the measured line.



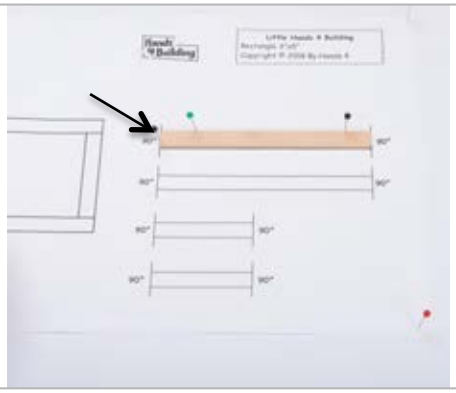
Grip the wood handle of the saw so it feels comfortable in your hand.

Hold the saw straight and even while cutting.

Cut lightly. Use even strokes on the push and pull.

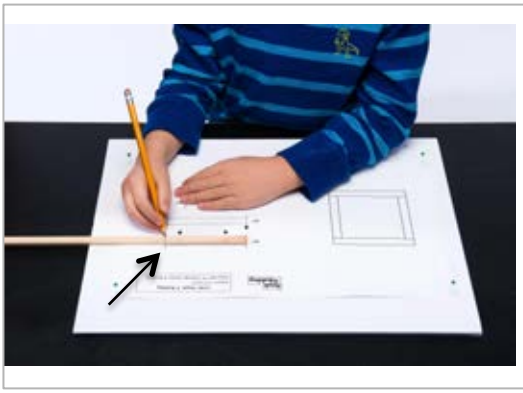
STOP sawing when the cut is complete.

Measure and Cut
Squares and Rectangles



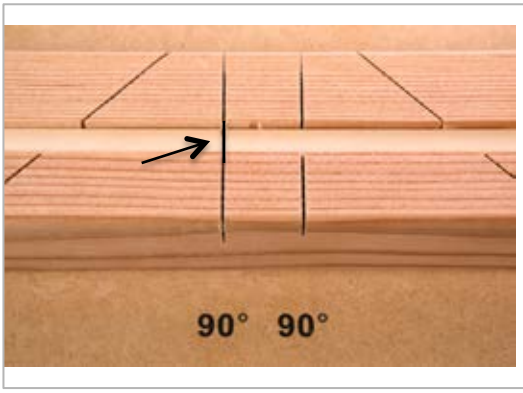
Align an 18 inch wood strip on the blueprint to measure the first piece of the shape. **Place 2-3 pins in the foam core board at the edge of the wood to secure the strip in place.**

The end point angle on the wood strip must accurately align to the end point angle on the blueprint as shown. **Note:** If necessary, use the miter box to cut off the **end tip** of the wood strip at a **90-degree angle.**



The length of the side is indicated by creating a pencil mark on the wood strip at a 90-degree angle.

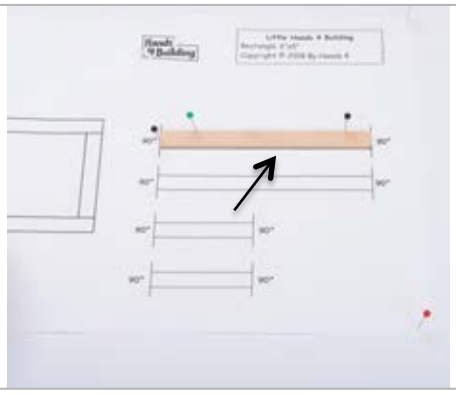
To simplify this step, instruct students to use their pencil to connect the extended line shown on the blueprint at the point of measurement. This step is similar to a “connect the dots” activity.



Place the measured wood strip in the miter box slot.

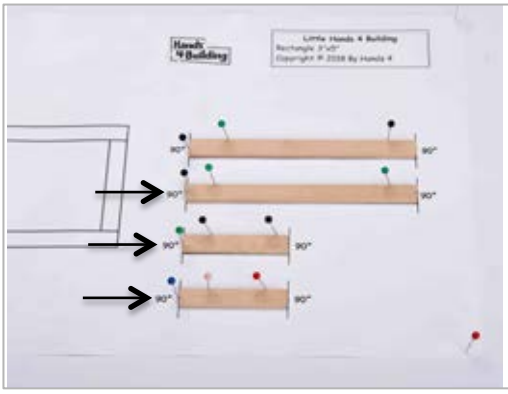
Align the measured pencil mark on the wood strip with either 90-degree angle saw guide on the miter box.

Cut the wood strip on the marked line.



Place the cut wood strip on the blueprint as shown.

Measure and Cut
Squares and Rectangles



Repeat the process to measure and cut the three remaining pieces for the rectangle or square.

Note: The end point angle on the wood strip must always align to the end point angle on the blueprint. If necessary, use the miter box to cut off the **end tip** of the wood strip at a **90-degree angle.** This is done before securing the wood strip with pins and marking the length of the piece.

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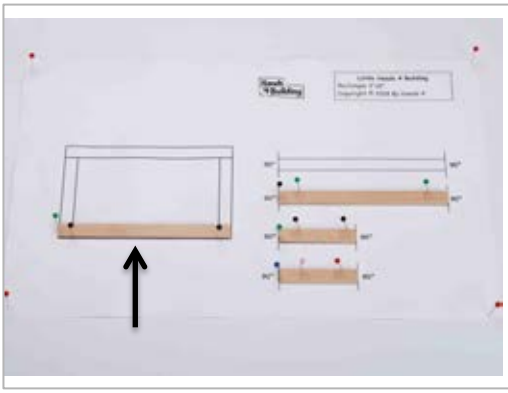
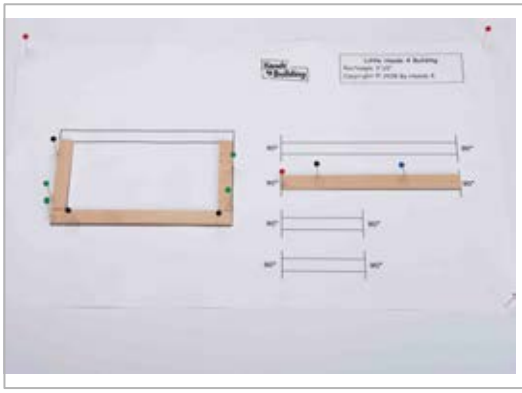


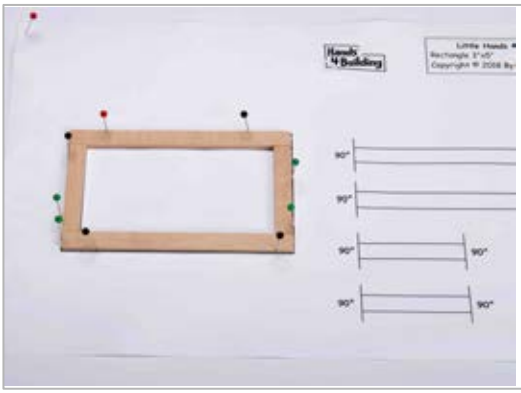
The four cut wood strips will now act as “puzzle pieces” to create a rectangle or square directly on the project blueprint.

After a wood strip is accurately placed on the rectangle or square, use two pins to secure the wood strip in place on the shape.



The angles on adjoining wood strips should create a tight seam.

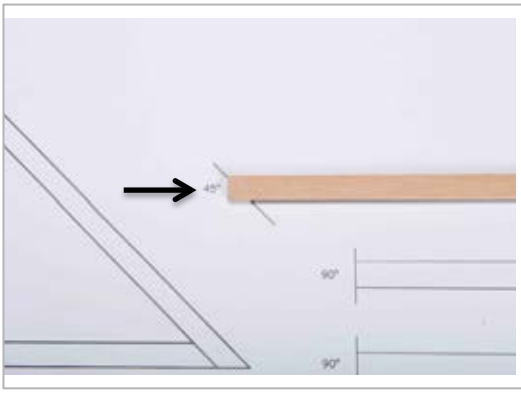
Sand paper is used to correct or smooth a cut.



Align and pin all four cut wood strips in place.

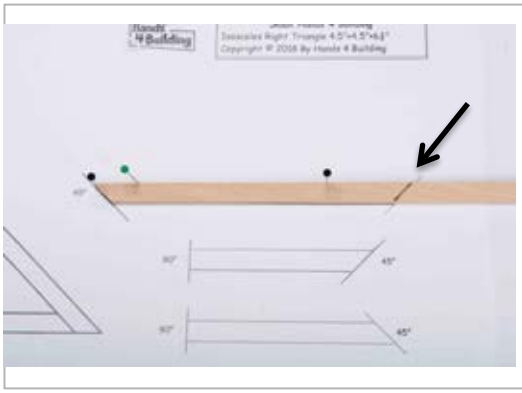
You are now ready to follow directions to glue the shape together at each joint.

Measure and Cut Isosceles Triangles



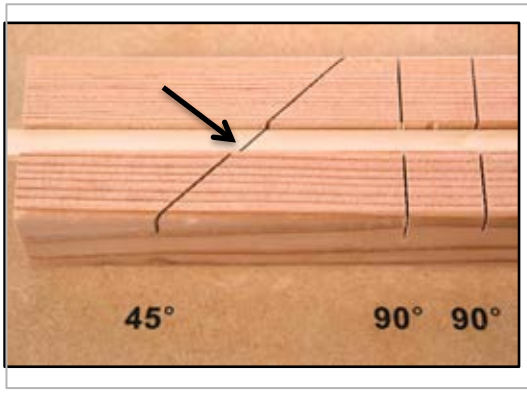
Use an 18 inch wood strip to measure and cut the **first** side of the isosceles triangle.

The angle at the end of the wood strip must align with the end point angle on the blueprint for the side you are measuring. Here it does **not.** Use the miter box to cut off the end tip of the wood strip at a **45-degree angle.**



Align the 45-degree angle on the wood strip with the 45-degree angle on the blueprint. **Place 2-3 pins in the foam core board at the edge of the wood to secure the strip.**

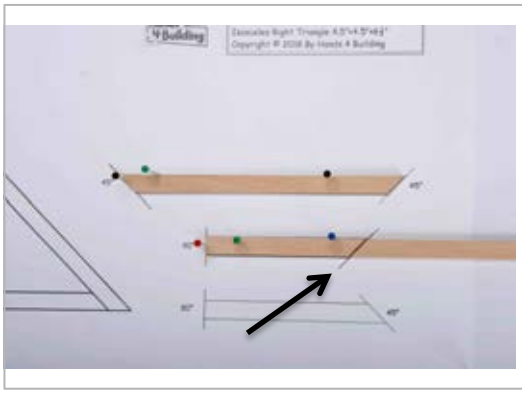
Indicate the length of the triangle side with a pencil mark on the wood strip at a 45-degree angle. This is done by connecting the extended line shown on the blueprint at the point of measurement.



Place the measured wood strip in the miter box slot.

Align the 45-degree angle pencil mark on the wood strip with the 45-degree angle saw guide on the **left** side of the miter box.

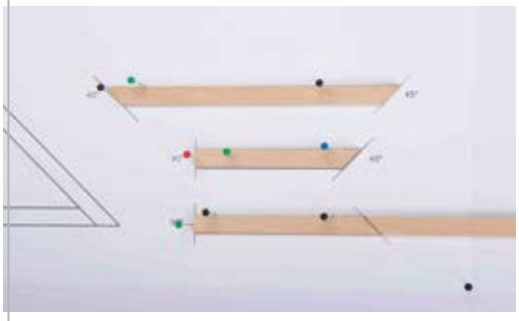
Cut the wood strip on the marked line. Return the cut wood strip to the blueprint.



To measure and cut the **next** side of the triangle, align the end of your wood strip with the 90-degree angle on the blueprint. **Note:** Use the miter box to cut off the end tip of the wood strip at a **90-degree angle.** Pin the strip in place.

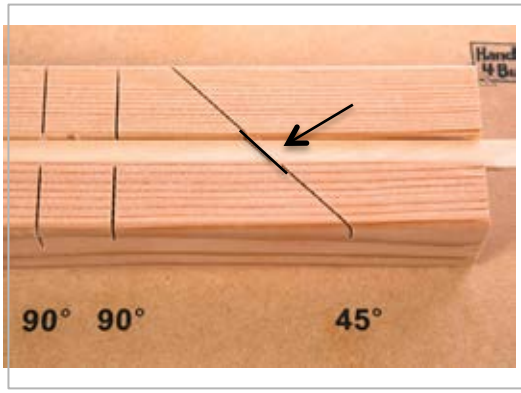
Indicate the length of the side by creating a pencil mark on the wood strip at a 45-degree angle. Cut the wood strip at a 45-degree angle on the **left** side of the miter box.

Measure and Cut Isosceles Triangles



Measure and cut the **third** side of the triangle. Align the end of your wood strip with the 90-degree angle on the blueprint. **Note:** If necessary, use the miter box to cut off the end tip of the wood strip at a **90-degree angle.** Pin the strip in place.

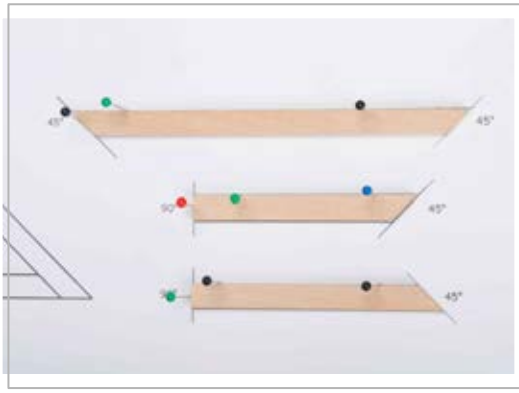
Mark the length of the side at a 45-degree angle. This step is simplified by connecting the extended line shown on the blueprint at the point of measurement.



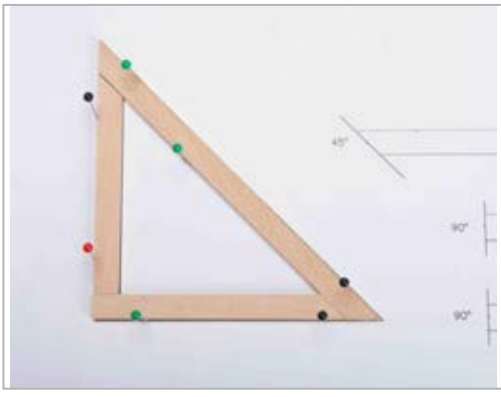
Align the 45- degree angle pencil mark on the wood strip with the 45-degree angle saw guide on the **right** side of the miter box.

Cut the wood strip on the marked line.

Place the wood strip on the blueprint. Pin in place.



The three cut wood strips will now act as “puzzle pieces” to create an isosceles triangle directly on the project blueprint.



Align all three sides of the triangle on the blueprint shape. Pin in place.

The angles on adjoining wood strips should create a tight seam. Sand paper is used to correct or smooth a cut.

You are now ready to follow directions to glue the triangle together at each joint.

Glue the Shape Joints

Note: The directions for gluing apply to ALL shapes.

Only use Elmer's Glue-All. Do NOT use Elmer's School Glue.

Partially fill the included plastic cup with glue. Always cover the plastic cup with the lid when not in use.

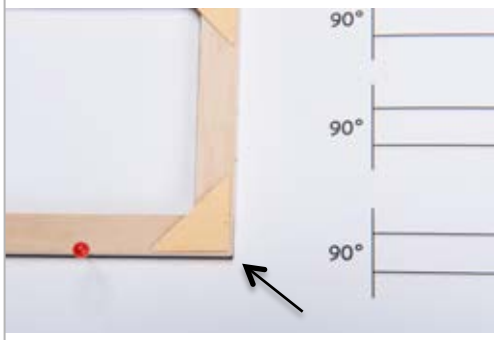
Use a wooden spatula for a glue applicator.

Cut ALL yellow triangles in half before you begin to glue.

Lift one wooden strip from the blueprint. Use a wooden spatula to apply glue to each end of the wood strip at the **inside joint.**

Using the pins as a guide, place the wood strip back on the blueprint.

Continue the process until all joints of the shape are glued.



Glue **one half** a yellow triangle at every joint for added reinforcement. Place the glue on one side of the yellow triangle. Align the triangle with the edge of the wood.

Use your finger to continually press down on each yellow triangle for the first 5 minutes of the drying process to prevent the corners of the triangle from curling.

Allow the shape to dry on the blueprint for 2 hours.

Remove the pins. Lift the wax paper and peel off the shape.

Save the blueprint and wax paper for another project.