

Activity 1.3.4 Measurement Lab Skimmer

Introduction

Throughout history many systems of measurement have been devised and then thrown out as more precise and more logical systems have come along. While most of the world has adopted the metric system, the United States still clings to the Standard system, also called the customary system. Which system are you more comfortable with? Why do you think that is true? In this measurement lab, you will have a chance to perfect your precision measuring skills in the system that you are less comfortable with. STEM professionals, such as scientists, technologists, mathematicians, and engineers, must be able to measure accurately. It is very important that you pay attention to the units that you are using.

Equipment

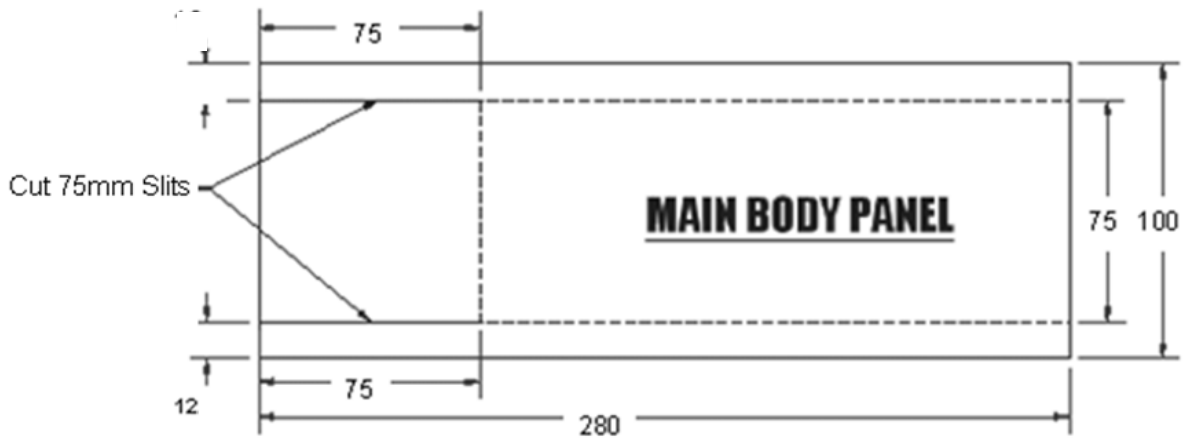
- PLTW Gateway notebook
- Pencil
- Metric or English ruler
- 60# Cardstock, Tagboard, file folder, or cereal box
- Glue
- Tape
- Paper fastener (optional)
- Lg. rubber band (optional)

Procedure

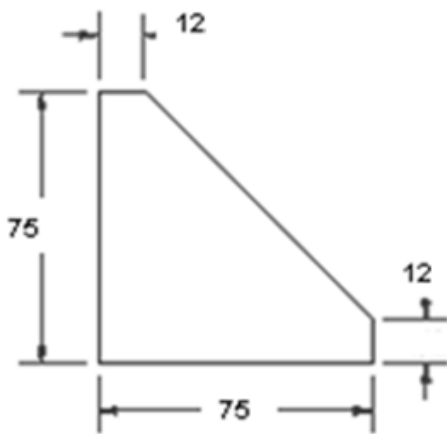
In this activity you will create a skimmer that will slide across the floor with ease if your measurements are accurate and your workmanship is exceptional.

1. Neatly and accurately use the plan sheet and measuring tool to draw your skimmer main body, air scoop, and two (2) fins onto the material that you will use to make your skimmer.
2. Carefully cut out your skimmer parts. Cut only on the solid lines. The dotted lines are where you will score and fold.
3. Use your ruler to draw the dotted lines on your cardboard air scoop and main body, and then fold on these lines to create a 90° angle.
4. Glue the fins to the ½ in. flap on the main body. Make sure that the angled edge faces the front of your skimmer. Glue or tape the main body back to the fins at an angle as shown in the orthographic drawing.
5. Glue the flaps of the air scoop to the inside edges of the main body with the narrow end flush with the front of the main body as shown in the orthographic drawing.

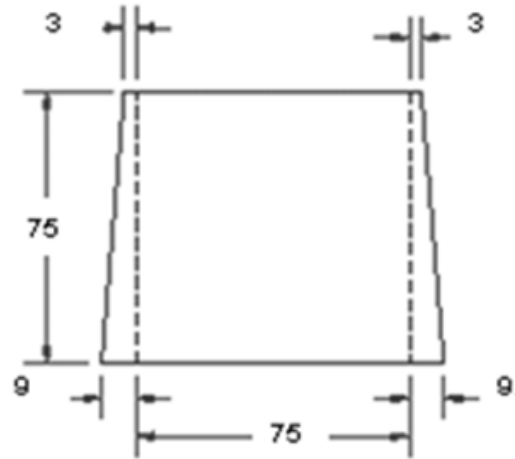
Metric Skimmer Plans (all measurements in millimeters)



DOTTED LINES ARE SCORE / FOLD LINES



FIN (2 required)

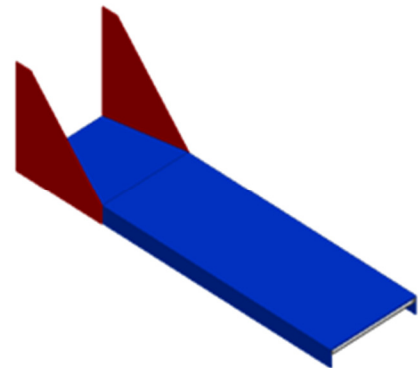


AIR SCOOP

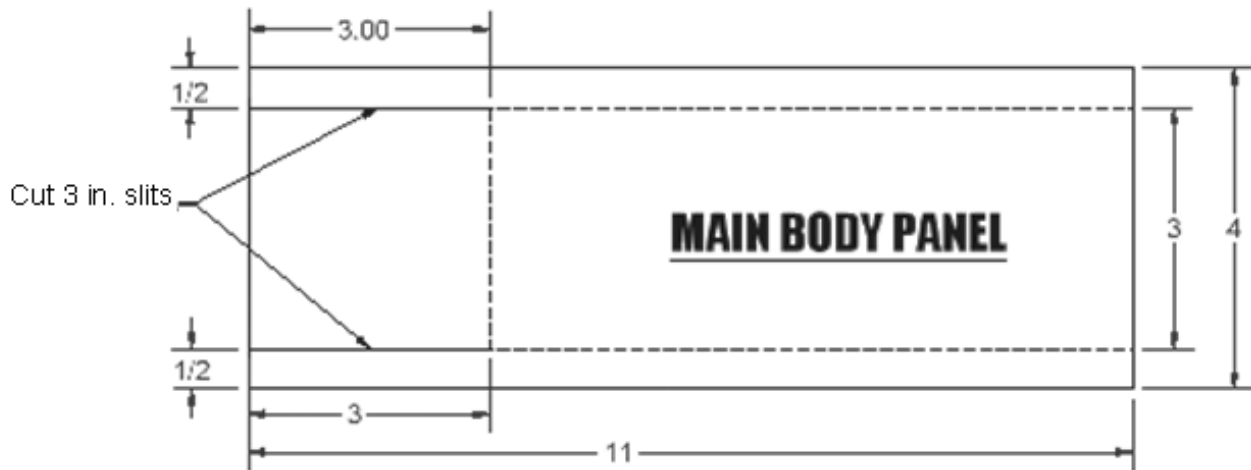
Assembled Orthographic Drawing of Skimmer



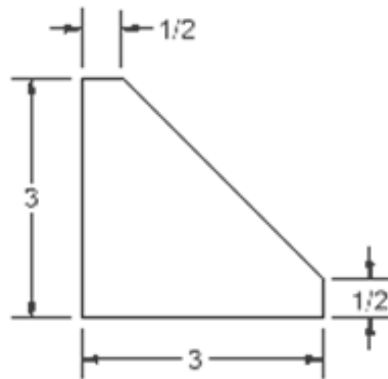
Assembled Isometric Drawing of Skimmer



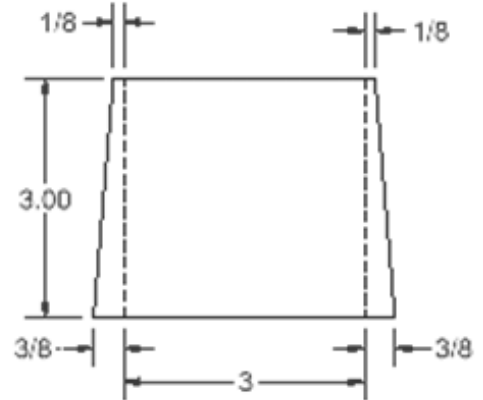
Skimmer Plans (all measurements in inches)



DOTTED LINES ARE SCORE / FOLD LINES

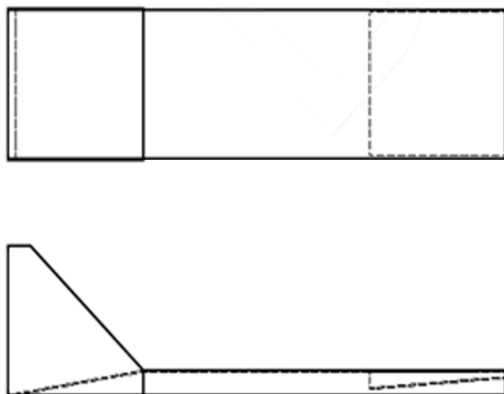


FIN (2 required)



AIR SCOOP

Assembled Orthographic Drawing of Skimmer



Assembled Isometric Drawing of Skimmer

