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
- Pencil
- English ruler
- File folder
- Glue
- Masking tape
- Paper fastener or staple
- Lg. rubber band

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 ruler to draw your skimmer main body, air scoop, and two (2) fins onto the material that you will use to make your skimmer. Your instructor will demonstrate how to draw each part of the Skimmer on 2 separate class days.

2. Before cutting out your skimmer parts, check your Skimmer drawing you’re your instructors’ drawings on the back board of the classroom.

3. If you are having problems drawing the skimmer parts on the file folder, please attend the smaller group help sessions during class time at the back table. Don’t forget to bring your materials with you!

4. Once all parts have been drawn and checked by your instructor, carefully cut out your skimmer parts. Cut only on the solid lines. The dotted lines are where you will score and fold.
5. 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.

6. 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.

7. 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.

8. If unsure where to cut or glue your parts, please refer to the Skimmer models on the back table in the classroom.

9. After all glue has dried, throw your skimmer along the floor and see how smoothly it glides.

Conclusion

1. How did completing the skimmer using the measuring system you are less comfortable with help to improve your skills?

2. How far did your skimmer travel?

3. Explain why your skimmer was more or less successful than your classmates.
Skimmer Plans (All measurements in inches. Drawings are not to scale.)

Cut 3 in. slits

DOTTED LINES ARE SCORE / FOLD LINES

Assembled Orthographic Drawing of Skimmer

Assembled Isometric Drawing of Skimmer