

Elaborate: Can You Use Your Procedure to Identify the Plastics?

Your Mission: Use your teacher approved procedure to identify the unknown plastics.

The materials used are the same ones used in *Sinkers and Floaters*. Data from the experiment should be recorded in the data table in your logbook. When the experiment is complete, clean your laboratory area and then answer the *Data Analysis* questions listed below. Be sure to use your data in your answers. Record your answers in your logbook. Question One will be scored by the rubric given on the attached student sheet.

Purpose: To identify the unknown plastics.

Materials: 1 small piece of each of your unknown containers from Activity #2. In order to distinguish the plastic pieces, you need to cut each piece into a specific shape. Make a key in your logbook giving the original lettering of that plastic to the shape cut. For example: Plastic A is a rectangle; B, a square; C, a triangle; D, a rectangle with a notch; E, a square with a notch, etc. Record the shapes and plastic letter in the data table. **NOTE:** It is recommended that pellets be used as a reference or guide as you analyze the container pieces.

3 - 8 oz clear cups
60 mL 70% isopropyl alcohol
60 mL concentrated calcium chloride solution
60 mL distilled water
1 pipet, plastic spoon or eye dropper
scissors
goggles
3 craft sticks
12 pellets – 2 of each kind

Procedure: Follow the teacher approved procedure in your logbook.

Data Analysis: Can you use the data gathered in your investigation to answer the following questions?

1. Were the containers as easy to identify as the resins using the flow chart? Explain. (This question will be evaluated according to the Data Analysis rubric.)
2. Which kinds of plastics are now easy for you to identify by just using your senses?
3. Go back to the data table for “Can You Classify Plastic Containers? (Activity #2) and find how many of those containers were placed in a group with others of the same code. Fill in the chart below:

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Activity Two	Activity Two	This Activity	This Activity
Group	Letters of Containers	List recycle code from testing for each letter listed in the column on the left	How many matches did you find under the recycle code column?
<i>Example: Group 4</i>	<i>B, G, E</i>	<i>HDPE, LDPE, HDPE</i>	<i>2/3</i>

4. Explain the numbers you got for the last column in this table. How can you account for the high or low fractions?

Rubric: Analyzing Data

Score	Criteria
X	Student had no opportunity to respond.
0	Student has some data but it is illogical and contains errors.
1	Student identifies some data and explains what he/she thinks it means. However, the data is incomplete and contains errors.
2	Student explains what some data means and uses the data to support his/her conclusions.
3	Student data is complete and accurate. He/She uses data to support a logical conclusion.
4	Student completes Level Three and goes beyond such as: <ul style="list-style-type: none">• connects ideas with previous science concepts• provides suggestions for other relevant investigation• makes charts or diagrams to illustrate data analysis.