

Teacher Notes on *Evaluate*: How Can You Identify the Kind of Plastic in Your Groups' Containers from Activity Two?

Teacher Background and Directions: This activity has two parts. In part one, students will use prior knowledge to design a procedure identifying the samples of the unknown containers in terms of their plastic recycling codes. Students will write a procedure and design a data collection table in their science logbook. Students should utilize the flow chart used in the previous activity to design their procedure. There is a NOTE to the students to use pellets as a reference or guide as they analyze the plastic container pieces. A list of materials will be supplied for them on the student sheet. The teacher must approve the procedure before it is implemented. The procedure will be assessed. Students should know this and be provided with the assessment criteria before they begin to write. Assessment criteria are provided on the rubric.

Rubric: Designing a Procedure

Score	Criteria
X	Student had no opportunity to respond.
0	The student response is missing information or is inaccurate.
1	The student attempts to design a procedure. However, this procedure is incomplete and shows an incomplete understanding of the problem.
2	The student designs a procedure to identify the unknown plastics. This procedure shows some understanding of the problem but some steps are missing.
3	The student uses words and/or diagrams to describe a procedure that is complete, shows understanding of the problem and is reproducible by another person.
4	The student accomplishes Level Three and goes beyond in some measurable way: • indicates limitations of the samples • includes relevant information • describes variables and controls

**Evaluate: How Can You Identify the Kind of Plastic
in Your Groups' Containers from Activity Two?**

Your Mission: Use the knowledge and lab skills gained from your experimentation in Activity #3, *Floaters and Sinkers*, to design a procedure which will identify the plastics examined in Activity #2, *Can You Identify Plastic Containers?*. You will use your skills of observation, laboratory testing, and reasoning to classify plastic containers according to their correct plastic recycling codes.

Purpose: To design a procedure for identifying 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. (Some craft stores sell specialty paper punches that make hearts, flowers, etc. shapes. These could be used if available.) 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

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 plastic pellets – 2 of each kind

NOTE: It is possible to use pellets as a reference or guide as you analyze the container pieces.

Procedure:

1. Write your procedure in your science logbook.
2. Include a data table in your logbook.
3. Have your procedure and data table approved by your teacher.

Teacher Approval Signature _____

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