

Properties of Plastics

Summary

Students will test the different kinds of plastic to determine the physical and chemical properties of each and predict what each might be used for. They will identify the number of an "unknown" plastic.

Time Frame

1 class periods of 70 minutes each

Group Size

Pairs

Materials

- numbered plastic (students can bring from home)
- paper clip
- acetone (fingernail polish remover will work),
- denatured alcohol
- hot water
- 250 mL beaker
- tweezer
- plastic vials
- goggles
- salt
- 3 clear glass or plastic vials or small beakers per group
- [Reading selection](#)
(attached)
- [Student worksheet](#)
(attached)

Background for Teachers

An inquiry approach could be substituted to allow students to develop their own tests. Students should not have the denatured alcohol near an open flame. Hot water should be handled with care.

Instructional Procedures

Day 1

Ask students what a computer case would be made of if there were no plastics. The first "Apple" computer had a wooden apple crate as the outside casing. They may come up with answers but no other substance has the properties of plastic that make it so flexible, strong and lightweight. Handout the student sheet and read the introduction with students. If you are going to ask them to bring in plastics, give that assignment now. You might collect some of the higher number plastics yourself because it is less likely that students will find these at home. Do not test plastic #7, it contains BPA, now thought to be hazardous under some circumstances. Cut into narrow strips the plastics that you have and place in containers labeled with the plastics' number. Assemble other materials. Pick one plastic to be the "unknown".

Day 2

Read the lab procedures with students and describe the location of materials. Collect any plastics the student have brought in and cut pieces to use if needed. All students time to work on the lab.

As students finish, hand out "Know Your Plastic Recycling Number?" reading. Have students complete their data tables with this information.

Assessment Plan

Scoring Guide

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1. student brings in plastic (if assigned).....	4
2. student follows all lab procedures.....	4
3. analysis questions and conclusion thoughtfully responded to.....	4

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)