



THE CELL PHONE DISSECTION EXPERIMENT

SUBJECT AREAS: science, technology

KEY CONCEPTS: resource management, waste management and minimization, environmental stewardship

GRADES: 3-5

MATERIALS: printouts of cell phone experiment (below), scissors, pencils, glue, bristol board

OVERVIEW

This hands-on activity shows kids how technologies such as mobile phones are composed of different components that can be recycled into new and environmentally friendly objects.

PROCEDURE

Step 1: Hold a discussion about what cell phones are made of.

ASK THE CLASS: What do you think cell phones are made of?

ANSWER: Metals (copper, gold, silver, palladium, tin and zinc), plastics and rechargeable batteries.

ASK THE CLASS: What happens when we throw out cell phones?

ANSWER: If they aren't recycled responsibly, cell phones end up in landfills, where perfectly useful materials go to waste. Cell phones also contain toxic substances that can harm the environment.

Explain how almost all of the materials used to make a cell phone can be recovered to make brand-new products. Help students understand the importance of recycling e-waste in particular, including how it helps protect our environment by minimizing the need to mine and process new materials, which in turn saves natural resources and reduces air and water pollution.

Step 2: Distribute a printout of the cell phone and its recyclable components (next page) and a pair of scissors to each student. Instruct the class to cut out the three components that can be recycled (indicated by short lines) and the cell phone itself.

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Step 3: For each of the three components, discuss the material it contains (described below), and how that material can be repurposed.

COMPONENT: camera

MATERIAL: copper, a metal highly conductive of electricity

NEW ITEM: copper piping in our homes, jewelry

COMPONENT: screen

MATERIAL: polyvinyl alcohol (PVA), a component that coats the glass surface of LCD panels

NEW ITEM: medicine such as pills to help our bodies regenerate damaged tissue

COMPONENT: keyboard

MATERIAL: plastics

NEW ITEMS: outdoor furniture, licence plate frames, fuel

Step 4: For each material (copper, PVA, plastics), ask the students to draw one of the new items it will become, inside the space of the respective cell phone component. For example, in the keyboard cutout, they will need to choose a piece of outdoor furniture, a licence plate or a gasoline container.

TIP: Draw pictures of the newly created items on the chalkboard to assist the students.

Step 5: Instruct the students to reassemble the cell phone pieces inside the cell phone cutout and glue the reassembled cell phone onto a fresh piece of paper or bristol board. The reassembled cell phone is a strong reminder to students that electronic objects are made of valuable materials, which can be reused if recycled responsibly.

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