



THE COMPUTER DISSECTION EXPERIMENT

SUBJECT AREAS: science, technology

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

GRADES: 3-5

MATERIALS: printouts of computer dissection experiment (below), scissors, pencils, glue, bristol board

OVERVIEW

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

PROCEDURE

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

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

ANSWER: Metals (to name but a few, aluminum, gold, copper, platinum, silver and zinc), plastics and glass.

ASK THE CLASS: What happens when we throw out computers?

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

Explain how some of the materials that go into a computer 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 computer (next page) and a pair of scissors to each student. Instruct the class to cut out the various components that can be broken down for their materials, indicated by the broken lines this includes the processor and fan (inside the tower) and the monitor, keyboard, power cord and mouse.

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

COMPONENT: processor (the computer's brain)

MATERIAL: gold

NEW ITEM: Vancouver 2010 Olympic gold medals (each contained 1.5% gold recycled from e-waste!)

COMPONENT: fan (which cools the electronics)

MATERIAL: aluminum

NEW ITEM: car (aluminum is reused to build the engine block)

COMPONENTS: power cord, keyboard, monitor case

MATERIAL: plastics

NEW ITEMS: outdoor furniture, licence plate frames, fuel

Step 4: For each material (gold, aluminum, plastics), ask the students to draw one of the new items it will become, inside the space of the respective computer component. For the tower, students will need to fit in both an Olympic medal and a car.

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

Step 5: Instruct the students to reassemble the computer and glue it onto a fresh piece of paper or bristol board. The reassembled computer 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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