

SKILLS MENU

- Defining the Issue
- Researching
- Identifying Alternatives
- Analyzing the Issue
- Defending a Decision
- Communicating
- Evaluating



Figure 1 A compact fluorescent light bulb (CFL)

LINKING TO LITERACY

Organize Your Thinking

As you read, make a t-chart to show the benefits (column 1) and costs (column 2) of using CFLs. When you have completed your chart, reflect on what the chart shows. You can use this information to conduct your cost-benefit analysis.

Using Compact Fluorescent Light Bulbs

Pure substances and mixtures affect the world around you. Using pure substances and mixtures involves both benefits and costs. A benefit is a good or positive result. A cost is a bad or negative result. Some pure substances are harmful to the environment or to human health. Some mixtures contain pure substances that could pollute the air, soil, or water. Often, a mixture or a product containing a mixture has both benefits and costs associated with it. For example, compact fluorescent light bulbs (CFLs) use much less energy than incandescent bulbs (Figure 1). However, CFLs contain a mixture of gases that includes mercury—a toxic pure substance that can pollute the environment when the bulb is thrown away (Figure 2). Are the benefits of using CFLs worth the costs?



Figure 2 Heavy metals, such as mercury, can pollute both land and water.

The Issue

The town council of a small Ontario town is having a meeting to discuss whether to promote the use of energy-saving CFLs, and how to handle the disposal of CFLs. You are a concerned resident in the town. You and a small group of townspeople have been asked by the town council to research these issues. Your group has been asked to summarize your research and present it to the town council at their next meeting. You are also expected to recommend a position on each issue.

To prepare for the meeting, you will research the benefits and costs of using CFLs in place of incandescent light bulbs. You should also research the disposal options for CFLs.