



Why Are There So Many Different Objects?

Information for students

- How many different objects do you think there are in your home? Why do you think there are so many different objects?
- One of the reasons that we have so many different objects is that each object has been designed to meet a specific need.
- In this activity, you will be analyzing an object that meets specific needs in your home. Then you will reflect on some of the environmental aspects of the object and on whether or not you really need this object.
- Choose an object in your home to analyze. The object must have at least three components and some of the components must move in relation to one another.
- Analyze the object by answering the questions in Appendix A.



Materials required

- A household object
- Appendix A
- Paper and writing materials

Information for parents

About the activity

Children should:

- apply their knowledge to analyze a household object and explain how it works
- reflect on the environmental aspects of this household object

Parents could:

- help their child choose an appropriate object to analyze
- discuss the questions with their child
- read the instructions to their child if necessary



Appendix A – Why do we have so many different objects?

Information for students

Choose a household object that has at least three components and that has some parts that move in relation to one another. Analyze the object by answering the questions below.

1. Why do we need this object?
 1. What is the overall function of the object?
 2. Do other objects exist that meet the same needs?
2. Make a list of the main components of your object. For each of the main components, answer the questions below.
 1. Describe the function of the component
 2. What material(s) do you think were used to make the component? (e.g. wood, plastic, ceramic, metal)
 3. Why do you think this material was chosen for this component? Refer to the properties of the material in your answer
 4. Could the component be made from a different material? Why or why not?
3. Identify two links on your object. For each link.
 1. Identify the characteristics of the link. (Direct or indirect? Partial or Complete? Removable or non-removable? Rigid or flexible?)
 2. Why was a link with these characteristics chosen?
4. Identify where guiding occurs on your object.
 1. Which component acts as the guide? Which component is being guided?
 2. What type of guiding is involved?
5. Now that you have taken a closer look at some of the components that make up your object, briefly describe in a few sentences how the object works. Where is a force applied to the object? How do the components move in relation to one another?
6. What is the impact of this object on the environment?

The production use and eventual disposal of the many different objects we use affect the environment.



A diagram of the life-cycle of a product is shown below¹.

Life-Cycle of a Product



Think about the environmental impact of each of the stages of the life-cycle of your object. Some questions you may want to consider include:

- Where do the raw materials for the components come from?
- Where is it made?
- How long does the object last?
- Can it be repaired?
- Does using the object have an impact on the environment?
- Can it be recycled?

Are there any changes that can be made to the object to reduce the impact of this object on the environment? Explain your answer.

1. People who are concerned about the environment believe that we should reduce the number of different things we buy and use.
 - Do you really **need** the object you analyzed?
 - Create a persuasive “elevator pitch”* for why or why not.

***An elevator pitch lasts no longer than a short *elevator* ride of 20 to 30 seconds**

¹ The National Institute of Standards and Technology (NIST), “Life-Cycle Thinking Product System” (2011)
https://commons.wikimedia.org/wiki/File:Life_Cycle_Thinking_Product_System.jpg