



Activity Sheet	<h1>Simple Machines</h1>
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**Investigations for simple machines**

**Task:**

Perform an in-depth qualitative study on a simple machine. The study involves five stages of development including investigation of the model machine, as well as further research and application to a real life machine.

**1. Engage**

- Engage with the simple machines provided at the workstations.
- Choose a simple machine that you found particularly interesting for further investigation. A good machine to investigate is one that:
  - i. Raises some questions that you would like to find out more about.

Questions

- ii. Allows you to try some of your own ideas to see what happens.

**2. Explore:**

- Explore the object to find out what parts of the operation of the device you can control.
- Make a list in a table.
- Record what happens in a suitable data table.

What I changed	What happened

**3. Explain:**

- Read the Simple Machine activity card to find out what's going on.
- Discuss the ideas with your group.
- Now try to explain what happened when you made the changes to the machine. Use another column in your table:

What changed	What happened	Why?

- **Focus questions:**

- i. Can you explain all of the observations in your table?
- ii. What observations are not explained?
- iii. What questions do you still need to find out more about?

Questions

- **Research:**

- i. Try to find answers to your questions. Use resources such as texts and internet.
- ii. Can you perform further tests with the existing or another object and resources to help determine answers to your questions? Try this now and record any data.

#### 4. Elaborate (some suggestions)

- i. Find some real life devices that use the simple machine that you are studying.
- ii. Construct a report or presentation on your simple machine that includes:
  - How to operate it.
  - How it works
  - How it is useful
  - Examples of real life machines
- iii. Construct an alternative model of your device that will allow you to

conduct further investigations of how it operates.

- iv. Collect all the class simple machine projects to create an interactive display for a *Science Fair*.

#### 5. Evaluate

- i. Share your findings and explanations with your peers in the form of a report and welcome feedback.
- ii. Review your explanations in the light of feedback received.
- iii. Reflect on your learning about your chosen simple machine

#### Resources

- i. Simple Machines kit
- ii. Tools and Machines kit
- iii. Science Toys kit
- iv. Roadshow Science objects:
  - a. Gears
  - b. Gears making work easy
  - c. Chain Syphon

