



## Swing!

This module is designed to help you explore how engineering and simple machines called levers affect your life each day.

1. Choose A or B or C and complete ALL the requirements.
  - A. Watch an episode or episodes (about one hour total) of a show about anything related to motion or machines. Then do the following:
    1. Make a list of at least two questions or ideas from what you watched.
    2. Discuss two of the questions or ideas with your counselor.

*Some examples include—but are not limited to—shows found on PBS ("NOVA"), Discovery Channel, Science Channel, National Geographic Channel, TED Talks (online videos), and the History Channel. You may choose to watch a live performance or movie at a planetarium or science museum instead of watching a media production. You may watch online productions with your counselor's approval and under your parent's supervision.*

- B. Read (about one hour total) about anything related to motion or machines. Then do the following:
  1. Make a list of at least two questions or ideas from what you read.
  2. Discuss two of the questions or ideas with your counselor.

*Books on many topics may be found at your local library. Examples of magazines include but are not limited to Odyssey, KIDS DISCOVER, National Geographic Kids, Highlights, and OWL or owlkids.com .*

- C. Do a combination of reading and watching (about one hour total) about anything related to motion or machines. Then do the following:
  1. Make a list of at least two questions or ideas from what you read and watched.
  2. Discuss two of the questions or ideas with your counselor.
2. Complete ONE adventure from the following list. (Choose one that you have not already earned.) Discuss with your counselor what kind of science, technology, engineering, or math was used in the adventure.

### Wolf Cub Scouts

Motor Away  
Paws of Skill

### Bear Cub Scouts

Baloo the Builder  
A Bear Goes Fishing

### Webelos Scouts

Adventures in Science  
Engineer  
Sportsman

3. Explore EACH of the following.
  - A. Levers
    1. Make a list or drawing of the three types of levers. (A lever is one kind of simple machine.)
    2. Show:
      1. How each lever works
      2. How the lever in your design will move something
      3. The class of each lever
      4. Why we use levers
  - B. On your own, design, including a drawing, sketch, or model, ONE of the following:
    1. A playground fixture that uses a lever
    2. A game or sport that uses a lever
    3. An invention that uses a lever

Be sure to show how the lever in your design will move something.
  - C. Discuss your findings with your counselor.

4. Do the following:
  1. Visit a place that uses levers, such as a playground, carpentry shop, construction site, restaurant kitchen, or any other location that uses levers.

A. Discuss with your counselor the equipment or tools that use levers in the place you visited.

*Visitations to places like carpentry shops, construction sites, restaurant kitchens, etc., will require advance planning by the counselor. The counselor should call ahead to make arrangements, and make plans to have appropriate supervision of all Scouts.*

*The site will very likely have rules and instructions that must be followed. The counselor should help ensure that all the participants are aware of and follow those rules. This may include safety procedures and other instructions.*

5. Discuss with your counselor how engineering and simple machines affect your everyday life.

### Check off List:

1 Choose one:  
\_\_A\_\_B\_\_C

Date  
Completed:

Counselor:

2 Adventure  
Completed:

Date  
Completed:

Counselor:

3 Do Each:  
\_\_a\_\_b\_\_c

Date  
Completed:

Counselor:

4 Visit a place  
I visited:

Discussion  
Date  
Completed:

Counselor:

5 Discussion.  
Date  
Completed:

Counselor: