

Name: \_\_\_\_\_

# Wheels & Levers

Date: \_\_\_\_\_

## What Advantages Do You Get From Using a Lever?



Discover: Identifying and Building Levers

### Question

How can I build the lever I need to complete a task?

### Resources

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- *Lever Identification Chart*
- digital camera
- optional - toy construction kit, such as K'nex (or similar type of kit)
- simple household construction materials: pencils, tape, rulers, construction paper, paper fasteners, scissors

**Safety Warning:** If you use scissors to build your lever, be careful not to cut yourself. **Never** hold the pointy end of scissors toward yourself.

### Instructions

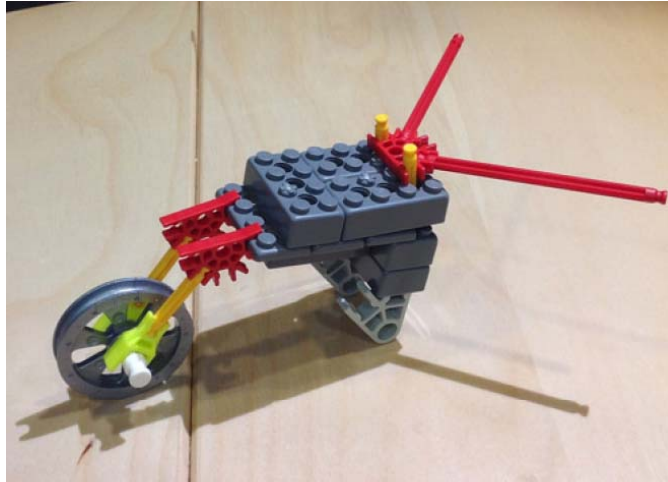
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You have learned that there are three classes of levers, that levers can be simple or complex, and that levers can be used to produce force advantage or speed advantage. Now, it's your turn to build some levers!

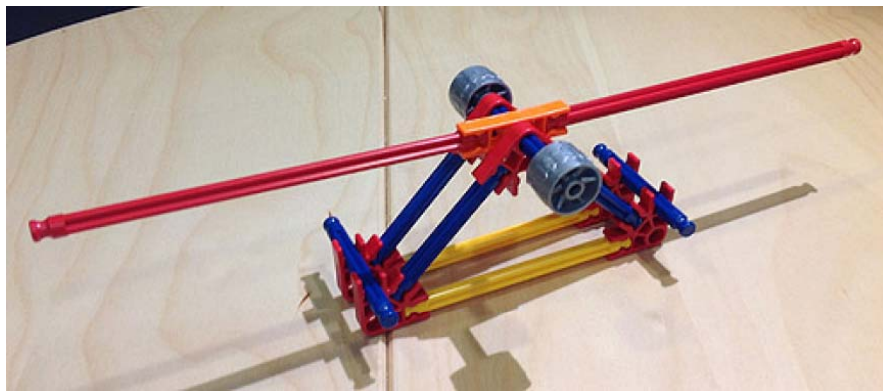
Use a building kit or simple household materials to build various levers. Try building one of each of the following:

- Class 1 lever (fulcrum in the middle) - example: teeter-totter
- Class 2 lever (load in the middle) - example: wheelbarrow
- Class 3 lever (effort force in the middle) - example: hammer
- Complex lever (has two lever arms) - example: scissors

Remember that every lever has a fulcrum. That is a good place to start. For example, if you were to build a model of a wheelbarrow (class 2 simple lever, force advantage), it might look like this:



If you were to build a teeter-totter (class 1 simple lever, no advantage), it might look something like this:



If you were to build a model of scissors (class 1 complex lever, force advantage), it might look something like this:



Use a digital camera to take pictures of the levers you have built, and share them in a post on our discussion board. In your post, but careful to explain the following:

- how each lever works
- what parts are the load, fulcrum, and effort force for each lever
- whether they are simple or complex levers
- whether they produce a speed advantage, a force advantage, or no advantage



## Skill Builder

How to build with K'nex.

If you need to use this Skill Builder, access it from the online course.