

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

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

# Wheels & Levers

## How Can Ideas be Shared and Designs be Compared to Build the Best Moving Device Possible?

### Design Process

#### 1. Define the Problem



This is the easy part! You have to decide exactly what the problem is. You might ask yourself, what is the device you are building supposed to do? What is its purpose?

#### 2. Research and Brainstorm







After you have decided what the problem is, you need to research solutions. You might look in books, ask an expert, or use the Internet to find ideas. This is where having a partner or a group working on the device is an advantage. You can all get together and **brainstorm** (share and discuss ideas as a group).

#### 3. Compare and Decide



You may have suggested a lot of ideas in step 2, but you cannot build them all! Now is the time to compare ideas and choose the best. If you have a team, you can have a discussion about which idea is the best. Start by eliminating the worst ideas. If you are left with more than one good idea, try to combine the best parts into a single design.

<p><b>4. Share the Work</b></p> 	<p>Now that you have decided on a design, get to work and start building. If you have a team, divide the work. How you divide the work depends on the device you are building. For example, if you are designing a self-powered car, one person might build the wheel and axles, another person might build the energy source and steering, and another person might build the braking system.</p>
<p><b>5. Build and Test</b></p> 	<p>Time to do the building! If you have a team, find all the parts and pieces and put them together. Test your device to see if it works.</p>
<p><b>6. Refine and Re-test</b></p> 	<p>If necessary, go back to the drawing board! If your tests from step 5 showed problems, then make changes to the design and rebuild the device with the new ideas. Test your device again. If problems occur, repeat the re-design and testing until you and your team, if you are working with others get it right.</p>
<p><b>7. Presentation</b></p> 	<p>Finally, success! When you have a device you are happy with, you need to record carefully how it works, and explain it clearly to others so they can understand how it works.</p>