

## Assignment I

When Ben Franklin needed something that was not invented yet, he simply made it himself. For example, when he couldn't reach the books on the top shelf of his library, he designed and made an arm extender. He named this invention the long arm.

First, Ben thought about the problem. Then he sketched his design, identifying the materials he would need to build his invention. Ben believed that, "Necessity is the mother of invention." \*

Look around you. Is there something that you could really use to make your life easier or safer? With the students in your group, identify some of these needs. List these needs on your invention proposal sheet. Brainstorm ideas for solutions. When you have made a decision about an invention, sketch a draft at the bottom of the proposal sheet. Ben carefully labeled his drawings, and you will need to label your drawing too. List the materials you will use and write a clear description of how your invention works.

Transfer this information to a poster to share with the class.

### **Internet Connection: What is a patent?**

Inventors patent their inventions so that others will not copy their ideas and profit from them. Ben Franklin chose not to patent his inventions, even though the Pennsylvania Assembly offered him a patent on one of his inventions, the Franklin stove. You can learn more about patents and inventions by going to the U.S. Patent Office website - <http://www.uspto.gov/go/kids>. Click on *Imagination Machine* and then on *Hatch an Idea*. This task will help you to "hatch" an invention idea for this project.

\*Ben's sayings are quite famous. Did he write this one? What do you think this saying means?

## Background Dossier One

### Ben Franklin, Inventor

Here are some of Mr. Franklin's inventions:

- One of the first electric batteries using alternating layers of lead and glass
- Experimented with the electrostatic machine which was an early version of an electric generator
- Odometer to measure approximate mileage (this was attached to the axle of a wagon wheel)
- Attached a fan to a rocking chair and a butter churner to another
- First school chair with an attached desk for an arm
- Bifocals so he could see near and far without two pairs of glasses
- Mechanical extending long arm for reaching books on top shelves (the Long Arm)
- Library chair with fold down steps for climbing
- Swim fins for the hands to move more quickly through the water—He invented these when he was just 11 years old!
- Franklin Stove- which made the fireplace more efficient
- Lightning rod
- Four-sided music stand, so that four musicians could play at once
- Glass armonica
- 4 paned whale oil street lamps
- Hatches on roofs to allow access during a building fire



Franklin could have become rich from his inventions, but he did not. The state assembly of Pennsylvania offered him a patent for the Franklin Stove, but he refused it. He wanted his inventions to be used and to benefit everyone. Why do you think he felt this way?

## Our Invention Proposal

Names of group members \_\_\_\_\_

**Brainstorm:** List your ideas/needs below.

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Your assignment is to create an invention to solve one of the problems you have identified. Which one will you work on?

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Make a rough sketch of your invention below. Label your drawing.

On the back of this sheet, describe how your invention will work.