

Grades 6–8

Day 1 Let's Invent: Creating Your Own Invention Box

50~60 minutes (hands-on activity)

Activity Overview

We all run into challenges on a daily basis. In this activity, students will get a taste of what being an inventor means by setting up their own invention boxes and exploring some of the problems they encounter in everyday life. They will collect everyday materials such as cardboard and tape, and basic tools like scissors to create their own invention boxes. They will also think about problems they encounter in their everyday life (currently and/or previously) and create a list of five problems they want to design solutions for using common materials. Finally, students will learn about storytelling through comics and see some storytelling examples.

Activity Summary

Activity 1: Creating Your Invention Box (20 minutes)

1. Introductory presentation about invention, making an invention box, and ideation.
2. Set up an invention box by looking around the home and gathering useful materials (e.g., items in recycle bins, tape, etc.).

Activity 2: What are Your Invention Problems? (15 minutes)

3. Write down 5~10 problems that bother you. Select the top five that you want to solve.

Activity 3: Invention Storytelling through Comics (20 minutes)

4. A guide to visual communication—use comics to tell your invention stories.

Wrap-up (5 minutes)

5. Discuss the important features of invention projects.

Objectives

The students will:

- ✓ Learn what invention is and learn about invention processes
- ✓ Learn about setting up invention boxes and documenting invention processes using drawings and comics
- ✓ Accumulate invention problems that are of interest

Activity Guide

Materials, Resources, and Prep

- Printed worksheet
- Colored pencils or pens

Activity 1: Creating Your Invention Box (20 minutes)

- Watch the [introductory presentation](#) about invention, invention processes, and invention problems.
- When we talk about inventions and inventors, you probably will think about Edison and light bulbs. In fact, most inventions do not produce radical changes in society. They often are built upon previous inventions to make certain parts of life easier, safer, more comfortable, more engaging, and/or healthier.
- This week you have an opportunity to try inventing with materials that you can find from your home. The goal of the invention is to solve one of the problems that bothers or bothered you. Your first task, as an inventor, is to create an invention box: gather together everything that you think might be useful for your invention project. Remember, you will need not only materials like cardboard and tape, but also tools such as pencils or scissors. Now create your invention box.
- Not sure what should be included in your invention box? You can review the list of materials in the video you just saw.
- Did you look into the recycle bin in your home to find some recyclable materials? For example, heavy stock papers like cereal boxes or waffle boxes are good materials for the invention box. They are easy to cut, yet very sturdy. You can cut them easily using scissors.
- Make sure your invention box includes tools as well. Inventors need tools to invent!
- Wondering why you need to set up the invention box?
 - Inventors often use inexpensive, everyday materials to create **prototypes** of their inventions. That's because they don't want to waste expensive materials in the early stages of designing. That's also why their invention boxes include common materials.
 - Once you are further into invention, you probably will make mistakes and experience failure. Just remember this is common, and part of the invention process. You'll need lots of materials in your box in case failure or mistakes happen.

Activity 2: What are your invention problems? (15 minutes)

- Now sit back and think about what problems you want to solve. Have you had any problems that you hope to solve? Is there anything that you hope to improve to make it work better for you?
- Explore the following invention example:

John Buck started a company, Healthy Fingers LLC, that creates “germ-safe” inventions to help prevent the spread of germs and diseases in public places. His inventions include a hands-free door and a hands-free doorknob that can be controlled using a person’s wrist or arm. Read more about his inventions here: [Healthy Hands](#).

- Think about the following question (or discuss with your sibling or caring adult if possible):
 - What would the product do? What problems does this invention solve?
 - Who might benefit from this solution?
- Now think about the video you just saw. Do you still remember the examples of students’ invention problems? Think about these questions,
 - What problems do they want to solve?
 - Who will benefit from their inventions?
- Examine the sample invention problems. Think about and write down 5~10 problems that you see in everyday life on [the Identifying the Problem worksheet](#). Choose 5 problems that you really want to solve and write the problem statement in the same format as the examples.
- Remember that your invention projects should help PEOPLE, including yourself!

Activity 3: Invention Storytelling through Comics (20 minutes)

- In this activity, you will use the [“Seeing the future! A guide to visual communication”](#) worksheet to learn how to use drawings to communicate about your invention projects.
- Practice drawing using page 9 of the worksheet.
- Don’t like drawing? You can create digital stories about your invention project. We recommend you try [Scratch](#) for storytelling (examples of Scratch storytelling can be found [here](#)). [Google CSFirst website](#) includes great tutorials on creating storyboards and animations using Scratch.

Wrap-up (5 minutes)

- Now you’ve set up your invention box and learned about invention storytelling. Read through the 5 problems you want to work on. Choose one or two that you think you can finish using the materials and tools from your invention box.
What problems can be solved using the materials and tools from your invention box? Why?