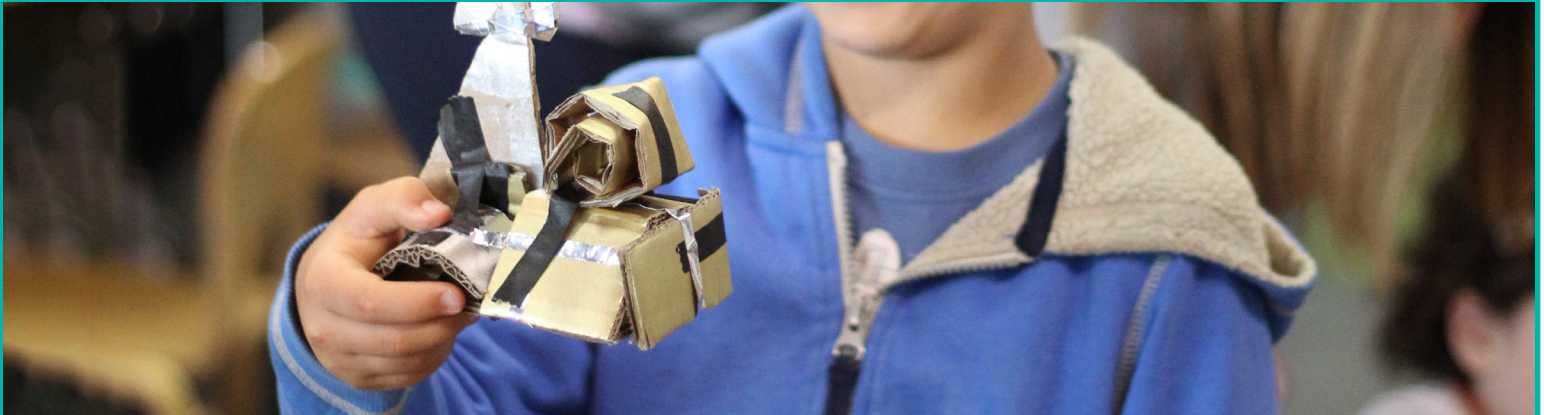


# WE CAN FIX IT!

Invent something to help you solve a problem you have



## POSSIBLE BUILDING MATERIALS

- Recycled paper products
- Clean recycled containers
- String/Yarn
- Elastic bands
- Crayons/Markers to decorate (optional)
- Clips

## TOOLS

- Scissors
- Tape/Glue
- Stapler

## SET UP THE PROBLEM

1. Sometimes we have objects that are not working in the right way for us. For example, maybe you have a bin for special toys that does not protect them the way you want? And, sometimes we have ideas for new things that we think would help our lives (e.g., like a new way to organize art supplies).
2. Let's brainstorm things you use in your life (at home or school) and how you might be able to improve them.
3. Choose one item from your brainstorm and make a revised version of that object!

## ENGINEERING BACKGROUND

*Product development engineers* create and revise products so that they meet the goals of people who want to use them.

## LEARNING GOAL

*Metacognition* is our ability to control and reflect on our thoughts. As children are thinking about what they want their invention to be, they will need to think about and decide the problem they want to solve (e.g., maybe they are trying to build something to hold toys or maybe they want to be able to reach something hard to get). They will then need to reflect on what they know about the problem, plan their strategy for design and building, and reflect on what they have invented.

## ✔ TIPS FOR ADULTS

**Before building:** Brainstorm with children about what they want to fix (or invent). For younger children, you may want to limit the scope by focusing on a specific activity, room in the house, or area of the classroom. Ask questions like "What is a problem that you want to solve? Is there something you do that is hard that you want to make easier? Do you have something that needs special storage? Can you think of something to build that would make playing or your chores more fun?"

Then ask them to think through the "problem" they are trying to solve and how they want the invention to improve their life "What can you build to make that easier? How will it work?"

Once they have built their invention, ask them to reflect on it's usefulness "How will you use your invention? Does the invention work as you planned? Will it solve the problem you meant it to solve?"



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