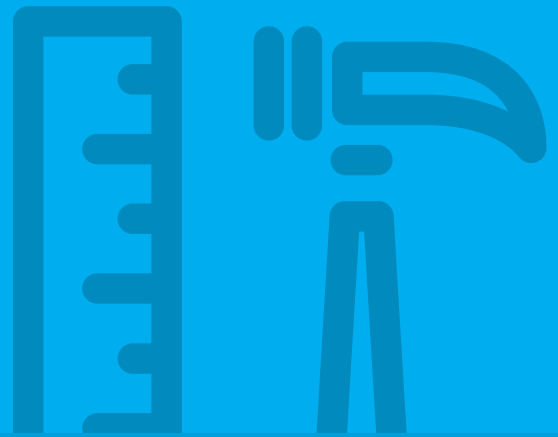




In this activity adolescents practice making a prototype: a model of a new invention or product that can help to solve a problem or take advantage of an opportunity.



## Activity Overview

### Purpose

Create prototypes for inventions.

### Objectives

Adolescents will be able to:

- ▶ Think creatively to build and make models.

### Competency domains

Critical thinking and decision making; Creativity and innovation.

### Works well for

Circles where adolescents can sit together, reach decisions collectively, and work on activities in small groups.

**Note:** This activity helps adolescents to create prototypes of products or inventions that they may try to build in real life. Prototyping can also be used as a method for stimulating creative ideas for other kinds of projects.

### Phase

Taking Action.

### Before

Adolescents should already be organized into teams that have agreed on a project idea to develop. The **Brainstorming solutions, possibilities and project ideas** activity gives adolescents a way to think of project ideas. See **Our challenges, Our solutions, Our environment, Forming problem and opportunity statements** for steps to take before and after this activity.

### After

Adolescents should have an opportunity to test their prototypes if they are intended for real-life solutions.

### Preparation

None needed.



# Prototyping

1

Ask adolescents to sit with their project teams. Each team should already have a project idea that they have developed together in an earlier session. Each member of the team should have paper or post-its, and a pencil, pen or marker.

2

## Explain:

Participants will work on a process called prototyping. Prototyping is a process designers use when they are making a new product. Prototypes are models of their ideas, which other people can test. They are usually incomplete models that don't include all of the details of their ideas, but they include enough that other people can use them and share their feedback. Designers often make several prototypes of a new product in the process of designing it, as they don't expect the first prototype to work perfectly!

3

## Facilitator says:

"There are different ways to make prototypes, and you are going to try a few of them today."

4

## Explain:

Write the following three titles on the marker board along with a brief explanation that you also give verbally:

### Arts and crafts models

Use the arts and craft materials, including materials you find locally, to build a model of your idea. It can be a full size model or a small model.

Remember:

- ▶ The model doesn't have to be perfect. It is like the first draft of something you write - you know that you will change it and improve it to make a better prototype.
- ▶ Sometimes you can't include all of the

details of your project ideas in your prototype. Think about creating a smaller version, or just the outside to show what it will look like.

- ▶ Be creative! Don't be afraid to have fun and try something even if you are not sure if it will work.

### Storyboard

A storyboard is a short comic or a series of pictures that shows how your idea would work. You can do this on a piece of paper with six boxes, or on six pieces of paper. The first pictures can show the problem or opportunity, and the next pictures can show how you will address it.

Remember:

- ▶ Use your storyboard to demonstrate your project idea and how people will interact with it. You can include things like how people feel and react to the project.
- ▶ You can include other ideas that would make your project work well in real life.
- ▶ Focus on a single user so that you can work out how someone would interact with/use the project idea, and include this in your storyboard drawing.

### Skit

Create a skit that shows the problem (or opportunity), and how people could use your project idea to solve or address it. Optional: If someone has a smart phone or another video recording device, create a short video of your skit.

5

Give the project teams time to create their prototypes.

6

After the allotted time, bring the circle together. Each team should present their prototypes, including arts and crafts models, storyboards and skits. (If technical resources are available they also can show their video skits).



## Share and Take Away

7

### ||| Facilitator says:

"First let's share some warm feedback about each other's prototypes. What were some of the great ideas you saw today? What was great about them?"

(Discuss: Creative and original ideas, practical ideas that could work easily with simple resources, ideas that could work but would require a lot of work and time).

8

### ||| Facilitator says:

"Now let's talk about your own prototypes. What did you learn about your project idea by working on these prototypes? Did you learn anything about whether your idea would work in real life? What would you need to do to make a final version that actually worked? What changes would you make in the next version?"

9

Agree to next steps. Depending on the circle's goals this could include:

- ▶ Choosing one project idea that the entire circle can prototype and design together in the next session.
- ▶ Planning another prototyping session for teams to continue developing their project ideas.



# Prototyping

## Do & Don't

- ✓ Encourage adolescents to have fun with the prototyping process, and to use their creativity.
- ✓ Help adolescents to keep their prototypes, along with any notes or plans they have made.
- ✗ Push adolescents to make perfect prototypes.
- ✗ Discourage or prevent adolescents from trying a project idea, even if you don't think it will work well (Instead, let them have fun and learn by trying).

## Adaptation

**Adapt for less time, or simplify:** This activity calls for adolescents to make three kinds of prototypes. It can be simplified by just focusing on one type. If adolescents do not have time to make prototypes and share them in the same session, divide this activity into two sessions.

## Environment

Indoor or outdoor space For arts and crafts model prototypes, a space that is protected from rain and excessive wind, with a clean, dry, covered floor.

## Supplies

- ▶ **For arts and crafts model prototypes:** Materials to make models - This could include new or discarded cardboard, markers or crayons, tape, glue, any discarded items that are clean and safe to use.
- ▶ **For storyboard prototypes:** Paper to draw drafts and a final version of the storyboard - This can be done on one large piece of chart paper with six boxes, or on six pieces of paper.

- ▶ **For skits:** Materials to make models and other props.
- ▶ **If resources are available for video:** Mobile phones, other video recording devices, and a computer or video screen with speakers so that adolescents can show their videos.

## Improvise

Use the prototyping process to explore project ideas that are not based on creating a product or invention. For example, if adolescents have an idea for how they can work together on a community action initiative, such as creating a community garden or organizing an intergenerational dialogue, they can use these three prototyping processes to come up with ideas.

The prototyping process can also be used to explore and develop ideas for creative arts projects. For example, adolescents could imagine inventions, future science fiction or fantasy communities, or characters with special qualities or powers - all of which solve problems that concern them or address opportunities that interest them. They can use the prototyping process to create drawings, paintings, collages, photo essays, stories, songs or dramas to elaborate and exhibit their ideas.

## Continue

This activity is intended as one step in a process. Adolescents think of a creative idea beforehand, and take time to explore and experiment with their concept afterward, working toward a final product or project. The prototyping process can be repeated several times until adolescents are satisfied with a final product or project, and can use their sessions as workshops to plan, develop and test those prototypes.