

Building Our Designs

Overview Build your final product: a diagram and prototype of your solution to help the salamanders access the pond. You will also make a plan for the informational sign that will be installed next to the path.

Materials (per group of students)

Real-world Material <i>These are the materials Woodside School would actually use to build your path design.</i>	Material For the Prototype <i>These are the materials you will use in your prototype to represent the real-world materials the school should use.</i>
Planks of wood	Craft sticks
Concrete	Construction paper or cardboard
Gravel	Pebbles
Mulch	Mulch
Natural materials found near the path	Small sticks, leaves, grass, moss
	*You may also use glue and/or tape for your prototype.

Objectives

In this activity, you will . . .

- create a diagram and prototype of your solution to help the salamanders reach the pond.
- create an informational sign to help inform the community about the importance of your solution.
- record problems you face while building your prototype.

Procedure

Follow these steps to complete the activity:

1. With your group, review your sketches and decide on one design to fully develop.
2. Next you will create a blueprint of your solution. This drawing will be more involved than the original sketch. Give as many details as you can so that someone reading it could create the solution on their own. It's ok to come back to this and make edits as you work on your prototype.
3. Gather the materials you have identified in your design sketches. You may need to make adjustments to these materials as you are building. Keep track of what you actually use!
4. Begin building your prototype.
Note: As you build, you may run into problems or challenges. Keep going! Solve one problem at a time using your group's creativity to come up with solutions. Engineers use notebooks and documentation to troubleshoot when things go wrong and look for places they can make improvements. PROCESS matters just as much as PRODUCT.
5. The last requirement from Woodside School is a sign to be displayed with the path. With your group, decide what information you would like to include. Keep in mind who your audience is – the Woodside School community. You want everyone to understand the importance of your solution. They may even be inspired to become STEM solution seekers themselves!

Analysis and Conclusions

Reflect on the following questions:

1. How does your solution meet the needs of people and salamanders?

2. How do you know your design is successful?

3. What could you have done differently during the design process?

4Cs Skills

Color in the number of stars to show how well you demonstrated each skill.

- **Critical Thinking:** I use information I learned about salamanders to design a way to help them get to the pond.



- **Collaboration:** I explain how I think and talk about how the whole team works together.



- **Communication:** I show my ideas using drawings, sketches, and other visuals.

