

Build a Better Roof

Can you build a roof to protect someone from the rain?
Learners will use simple materials from around your home to construct the roof. Then, test it out with a “rain storm”!

Recommended Age: 6+ years old

Time needed: 15+ minutes

What You Need

- A plastic bin or tupperware (approximately the size of a tissue box-- or larger)
- Watering can or spray bottle, and water
- Construction paper
- Pencil
- Scissors
- Materials for building (use whatever you have, here are some recommendations):
 - Tape
 - Paper plates
 - Tissue paper
 - Construction paper
 - Straws, dowels, popsicle sticks, and/or coffee stirrers
 - Coffee filters
 - Waxed paper



What You Do

- The plastic container is the base of a house. However, the house does not have a roof! There is a rainstorm coming. You will need to build a roof that can protect a person from the rain!
- Cut a few “people” out of construction paper. Cut them to a size to fit in the plastic container. Give them names.
- Put one paper person in the plastic container. Save the rest for further tests.
- Take a look at your materials for building the roof. Explore the materials and test them out. What materials will water roll off of? What materials does the water sink into?



- Remember, your “job” is to make a roof that will go over the plastic container and keep the paper person dry.
- When you are ready to test a design, either bring your house outside, or do this part over the sink or a bathtub. Lightly pour water on the roof for 10 seconds. Check the person inside-- did they get wet?
- Keep trying new designs and testing them out.

Tips for Adults

- When we do this at the Museum, the person inside gets wet the first few times-- and that’s okay! The fun part of this activity is testing designs and making new ones. That’s why you created multiple paper people as back-ups for when the first few inevitably get wet. These will come in handy!
- If your child needs more challenges to go along with this activity:
 - Challenge them to build something that will withstand a longer rainstorm.
 - Introduce a new material into the challenge-- like tin foil or cardboard. Or, remove some materials.
 - Change the plastic container your child is working with. Give them something smaller or larger. Does this make the challenge more difficult? Or easier?



Learning and Skills Connection

- **Persisting:** Focusing, sticking to it, repeating, learning from mistakes
- **Thinking creatively and imaginatively:** Envisioning possibilities, solutions, and forms of expression; having hunches; thinking outside the box; problem finding and solving
- **Envisioning:** Picturing in the mind's eye, imagining, spatial thinking, applying abstract thinking

Doing STEAM with Kids

STEAM stands for Science, Technology, Engineering, Art, and Math. There are lots of ways you can explore these letters, apart or together. Ask your child to make predictions, describe what they see, and to imagine possibilities and solutions. Don’t worry so much about the “right” answer. Developing curiosity, and problem-solving skills are important first steps to doing STEAM!

