A House for the Three Little Pigs

Inspired by *The Three Little Pigs,* by Paul Galdone

LET'S LOOK AT THE PROBLEM

Each of the three little pigs chooses a different building material—straw, sticks, and bricks—to make a house. When a wolf tries to blow down their houses, not all of them remain standing.

Why do you think the wolf was able to blow down the straw house and the stick house but not the brick house? How are materials such as straw and sticks different from bricks? What materials would you want to use to build a sturdy house?

COLLECTING AND TINKERING WITH MATERIALS

Building materials, such as LEGO bricks, blocks, small building planks, and magnetic tiles

Reusable resources, such as drinking straws, wooden skewers, craft sticks, toothpicks, unsharpened pencils, wood scraps, sticks, coffee stirrers, pine needles, and paper cups

Connectors, such as tape, binder clips, glue, clay, paper clips, and staples and staplers

Tools, such as scissors, measuring tapes, and rulers

Devices or processes to make wind, such as fans or waving magazines or newspapers

Items to represent the pigs, such as pig figurines or finger puppets

Writing and drawing tools, such as paper and markers, crayons, or pencils

Building a house for the three pigs allows children to test the strength, flexibility, and weight of various materials. Let them press, bend, break, and connect materials with tape or glue to find the strongest bonds. They can also experiment with how well materials withstand wind and weight. As they explore, ask questions like "Which materials are strongest?" and "How does wind or bending affect them?" This helps them understand how materials and connections impact the stability of their house, teaching them how to build a structure that resists the wolf's huffing and puffing.

STEM CONCEPTS

force / geometry / gravity / measurement / number concepts / properties of materials / scientific inquiry / simple machine mechanics / structural engineering

THE DESIGN CHALLENGE

Getting Started. Build a house that is big enough to fit three toy pigs inside.

More Challenging. Using straw-like, stick-like, and brick-like materials, build a strong house that won't fall down when the wind blows at different speeds. It should also prevent the wolf from getting in other ways.

WORKING ON THE DESIGN CHALLENGE

Think About It

Getting Started. Decide what kind of house you want to make. What materials will you use? What will you do to make it strong and stable? How will you make it big enough to fit the three little pigs? Draw your ideas.

More Challenging. How will you design your house so the wolf can't get in? How can you outsmart the wolf so he can't blow down your house or get in another way?

Build or Create It

Getting Started. Gather your materials to build a house. Make sure that it is strong and sturdy.

More Challenging. Make a house with a foundation that is sturdy enough to keep the wind from knocking it down. Consider how you will add a roof, windows, and doors while also making sure the wolf can't get in.

Try It

Getting Started. Does the house stand up on its own? Can the three pigs fit inside?

More Challenging. Does your house stand up if a fan is on low, medium, or high? Is there a door that opens and closes so the pigs can get in and out? Is there another way for the wolf to get inside your house?

Revise or Improve It

Getting Started. If your house doesn't stand up on its own, what can you change to make it better, stronger, or more stable? What material might you try next? If the three pigs won't fit inside your house, how will you make it bigger?

More Challenging. What can you change or add to your house so the pigs are safe and the wolf can't blow it down or get in another way?

Share It

Getting Started. Tell someone about your house and how you made it. Ask them if they have ideas about how to make it better.

More Challenging. Ask another person to test the strength of your house. Can they blow it down if they try? Work with this person to find ways to make your house stronger.

QUESTIONS AND COMMENTS

- What do you think will happen if _____?
- I wonder if your house will stay up when the wind blows on it. How can we find out?
- Does the size or shape of your house affect how sturdy it is? What else affects its sturdiness?
- What would you do differently if you built the house again?
- If you could choose different materials to build your house, what would they be? Why?

BACK TO THE PROBLEM IN THE BOOK

Consider the materials each of the three little pigs uses to build their houses. How does the house you built compare with their houses? What materials did you find worked best in the house you built? Do you think the three little pigs would want to or be able to make the house you built? Why or why not?

GOING DEEPER

- Encourage children to add a new material (such as wood blocks) and a new connector (such as duct tape) to the house they built. Ask them how these additions change their house and the features they can create.
- Invite children to brainstorm other ways to test the strength of the houses they built.
- Lead a walk in the neighborhood or a session of looking at photos of houses. Discuss with the children what shapes they see and have them try creating some of these shapes in their houses. Have them identify which shapes are the strongest and support the most weight.
- Children made drawings or plans before building their houses. With this in mind, facilitate a discussion with questions like “Does planning help improve the design?” and “Did you make any changes during the building process that were different from your plan? Why?”

OTHER BOOKS TO USE

The Three Little Javelinas / Susan Lowell, illustrated by Jim Harris
The Three Little Pigs: An Architectural Tale / Steven Guarnaccia
The True Story of the 3 Little Pigs! / Jon Scieszka, illustrated by Lane Smith