

Box It!

LET'S LOOK AT THE PROBLEM

Each time someone asks the bunny what he is doing with his box and why, he says, "It's not a box!" Everyone thinks the box is just a box, but the bunny imagines it to be a racecar, a mountain, a building on fire, a robot, a pirate ship, a hot air balloon, a steamboat, or a rocket ship.

Have you ever used a box to make something? If you were the bunny, what would you make with just one box?

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MATERIALS

- Reusable resources such as boxes of different sizes and shapes, cardboard, paper plates and cups, and bottle caps
- Connectors such as glue, brads, wire, tape, cardboard rivets, reusable zip ties, and a low-temperature glue gun
- Tools such as scissors, child-safe cardboard cutters, wooden skewers, and pliers
- Items for decorating such as yarn, string, fabric, felt, drinking straws, pom-poms, feathers, googly eyes, stickers, glitter, craft foam, beads, and tissue and construction paper
- Paper and markers, crayons, or pencils

Safety note: Adult assistance needed in cutting cardboard

TINKER WITH THE MATERIALS

Explore the boxes. How can you combine them or decorate them? How can you use other materials with the boxes?

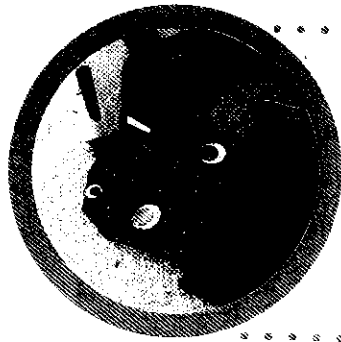
Tinker and create with different types of cardboard. Which types are easiest to bend, fold, poke holes in, or cut?

With an adult's help, explore tools and materials for making with cardboard. Try child-safe cardboard cutters, scissors, cardboard rivets, and different types of tape.

STEM CONCEPTS

balance / geometry / design engineering / gravity / motion / physical properties of objects / scientific inquiry / simple machines / spatial relationships

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THE DESIGN CHALLENGE

Making Use cardboard boxes to create something new.

Engineering Use the boxes to create a game that allows players to score points. (See “Other Resources,” on the next page.)

WORKING ON THE DESIGN CHALLENGE

- **Think about it.** What will you make with the cardboard boxes? Is it something the bunny made or something completely different? How will you create it? What materials do you need? Draw or sketch your ideas.

Engineering. Think about the games you like to play. How do they work? How can you use the boxes and other objects to make a new kind of game? How will players score points? How will points be recorded?

- **Build or create it.** Gather your materials and make your box creation. Decorate it if you like.

Engineering. Create your game using the materials. Include ways for the player to score points.

- **Try it.** Use your not-a-box.

Engineering. Test your game by playing it with a friend.

- **Revise or make it better.** Does your creation do what you want it to do? If it doesn't, how can you change it?

Engineering. What works with your game, and what doesn't? What do you want to change?

- **Share.** Ask someone to guess what you created with your boxes. Invite them to play with you using your creation. Write or dictate a short story about what you made.

Engineering. Invite someone else to join you in playing your game. Show them how it works. Ask them if they have ideas about how to make it better. If other friends have made games from boxes, set up an arcade and invite others to play.

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QUESTIONS AND COMMENTS

I wonder what you could make with this cardboard box.

I wonder what would happen if _____.

How will you play with this?

What if you wanted your game or your creation to _____? How would you do that?

How will you make your game strong enough that it won't break when people try to play it?

BACK TO THE PROBLEM IN THE BOOK

How does the bunny use his imagination? How did you use yours? What are some other ways the bunny could use a single box?

GOING DEEPER

- What could you make by using only boxes that are shaped like cylinders? Try out your ideas.
- Build something that will cover a five-by-six-foot area.
- Research how to make cardboard linkages or cardboard automata to add motion to your creation (described on page 16 of this book).
- How could you use batteries and bulbs to light up your creation?
- Visit a place (library, makerspace) that has a cardboard laser cutter and watch it in action. How does it work?
- Take apart a small box until it is flat. Use it as a template (pattern) to create a new box from construction paper or cardstock.

OTHER RESOURCES

For inspiration on making games with cardboard, visit www.cainesarcade.com.

OTHER BOOKS TO USE

A Box Story / Kenneth Kit Lamug

Clancy and Millie and the Very Fine House / Libby Gleeson, illustrated by Freya Blackwood

What to Do With a Box / Jane Yolen, illustrated by Chris Sheban