



Create, Test, Improve!

Design a Bridge

When you want to make something, you can use a three-step process: **create, test, improve!** This **computational thinking skill** is a creative way of thinking that can help children solve problems in more organized ways. Try the ideas below to practice this skill with your child.

Total time needed: 20–30 minutes



Watch the Story

Shivery Delivery

Ask your child:

- What are some things the monkeys thought of using to **create** the ice cream tray? Why didn't they work?
- How did they **improve** their tray?
- Have you ever had more things than you could carry? What happened?



Do the Activity

Design a Bridge

Follow the directions on the next page to design a bridge. You'll need:

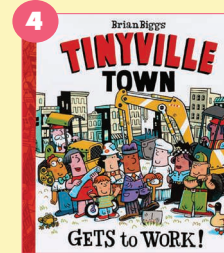
- A toy car or wagon
- Sink, tub, or container
- Water (optional)
- Household items such as rulers, paint sticks, or cardboard (the items should be shorter than the sink or container)
- Tape, string, scissors



Watch the Music Video

Create, Test, Improve!

Watch the monkeys sing as they **create** a go-cart, **test** it out, and then **improve** it. They use the same steps that you used when you designed your bridge!



Read a Book (Optional)

Tinyville Town Gets to Work

by Brian Biggs

Ask your child:

- Why did the new bridge need to be wider and stronger than the old bridge?
- If you were building a bridge, which job would you like to have? Why?

Do the Activity

Design a Bridge

Design a bridge for a toy car to travel across. Use these three steps: **create, test, improve!** You can use these steps to make almost anything!

Create!

(see materials on first page)

1. Show your child the toy car and the sink, tub, or container you decided to use. Say:
 - Let's build a bridge so a toy car can travel across it.
 - We don't want the bridge to bend, tip over, or break while the car is on it.
 - We'll use the sides of the sink (or container) to hold the bridge up.
2. Give your child the materials and ask:
 - How will you make the bridge long and strong enough to go across the water?
3. **Create it!** Help your child try out her ideas.

TIP: Let your child take the lead

Join in and help, but let your child make most of the decisions and build most of the bridge. This helps your child practice solving problems.

Test!

1. Tell your child:
 - Let's **test** the bridge to see if it's strong enough for the car to go across.
 - How do you think can we **test** our bridge?
2. Help your child **test** it out.



Improve!

1. Depending on the test results, ask:
 - What do you think we need to do to **improve** the bridge?
2. Keep making **improvements** and **testing** them out.
3. When your child is satisfied with the bridge, remind her of what she did:
 - You came up with ideas about how to **create** a bridge. Then you **tested** it out and **improved** it! You can use these three steps to make almost anything!

TIP: Try another challenge

Can your child make the bridge strong enough to hold 2 or 3 cars? Could it hold a small stuffed animal? Can she make the bridge waterproof so she can play with it at bath time? Find some materials and try it!

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