

STEM BUILDERS: BRIDGE CHALLENGE

Can you design a bridge that is strong, stable, and smart?



YOUR CHALLENGE

Design and build a bridge that can hold weight without falling down.
Engineers build bridges to help people, animals, and vehicles cross rivers, valleys, and roads. A strong bridge must be carefully planned before it is built.

Today, you are the engineer!

MATERIALS*

You may use:

- **Paper or cardboard**
- **Craft sticks or straws**
- **Tape or glue**
- **Coins, blocks, or small toys (for testing)**

*(Your teacher may choose different materials.)

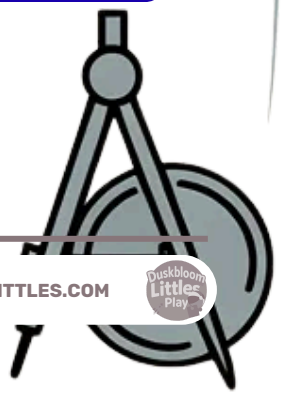
INSTRUCTIONS

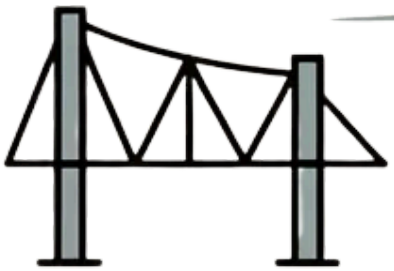
Before building, take time to plan your bridge.

Think about:

1. **How long it should be.**
2. **What shape it will be.**
3. **How it will stay strong.**







PLAN YOUR BRIDGE



SECTION 1: DRAW YOUR DESIGN

Draw your bridge below. Label any important parts (i.e. supports, base, top of bridge).

SECTION 2: DESIGN QUESTIONS

Answer these questions:

1. **What materials will you use?**
2. **What shape will your bridge be?**

☐ Flat ☐ Triangle ☐ Arch ☐ Other _____

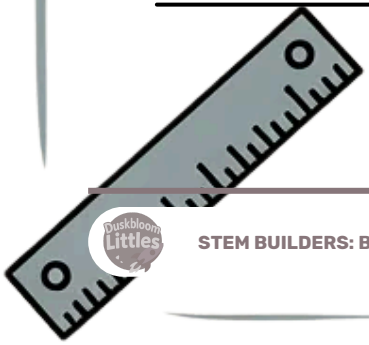
3. **Why do you think this bridge will be strong?**

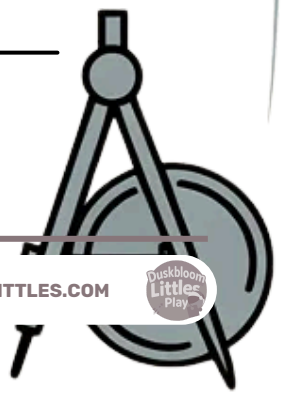
_____

_____

_____

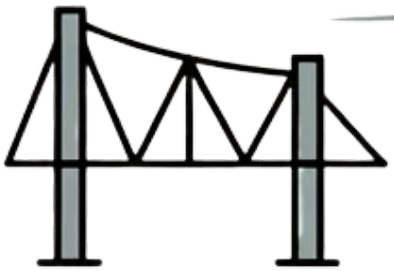
_____





REMINDER!

Good engineers test ideas and make changes!



BUILD, TEST, AND IMPROVE



SECTION 1: TESTING YOUR BRIDGE

Place small objects on your bridge one at a time.

1. **What did you test with?**

_____

2. **How much weight did it hold?**
   - ☐ A little
   - ☐ Some
   - ☐ A lot

SECTION 2: RESULTS

What happened to your bridge?

- ☐ Stayed strong
- ☐ Bent a little
- ☐ Fell down

SECTION 2: REFLECTION

What worked well?

_____

What would you change next time?

_____

_____

_____

_____

ENGINEERING IS ABOUT TRYING, TESTING, AND IMPROVING.
GREAT WORK, BUILDER!

