CHALLENGE: "LEGO BRIDGE"

TEACHER INSTRUCTIONS

TEACHER PLANNING

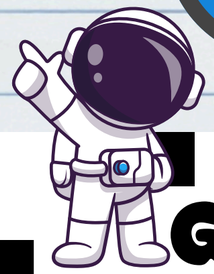
Approximate Time: 40-60 minutes + Extra if time is available and students are engaged.

Supplies:

- Lego Bricks
- Large white paper (Roll paper or sidewalk chalk outside are also great options.)
- Pencil (optional)
- Markers or crayons

QUESTIONS TO INITIATE BRAINSTORMING

What is a bridge? –A structure that carries a road or path
Can bridges go over water? –Yes!
What shapes do we usually see for rivers? –Slender and curved, maybe like a snake
Is a river different from the ocean? –Yes!
Can we add other things around our river? –Yes! Decide as a group



GENSTEM
HANDS ON STEAM FOR K-5

"LEGO BRIDGE"

PROJECT CHALLENGE!

FOR KIDS

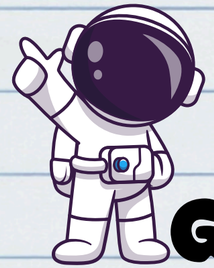
As a group, can you make a Lego bridge to cross a river as wide as your hand?

Your bridge must stand ONLY on dry land, without any part sitting in the river.

We will test our bridges for strength. If you press on your bridge with your hand, does it break? If so, how can you make it stronger?

<u>Our Process:</u>

- Brainstorm
- Create
- Reflect
- Re-Create

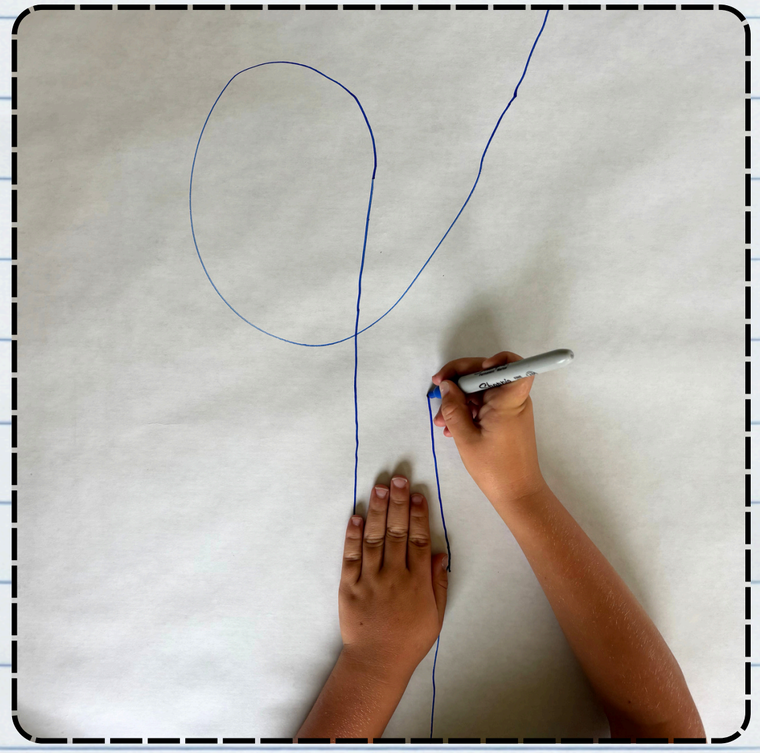


GENSTEM

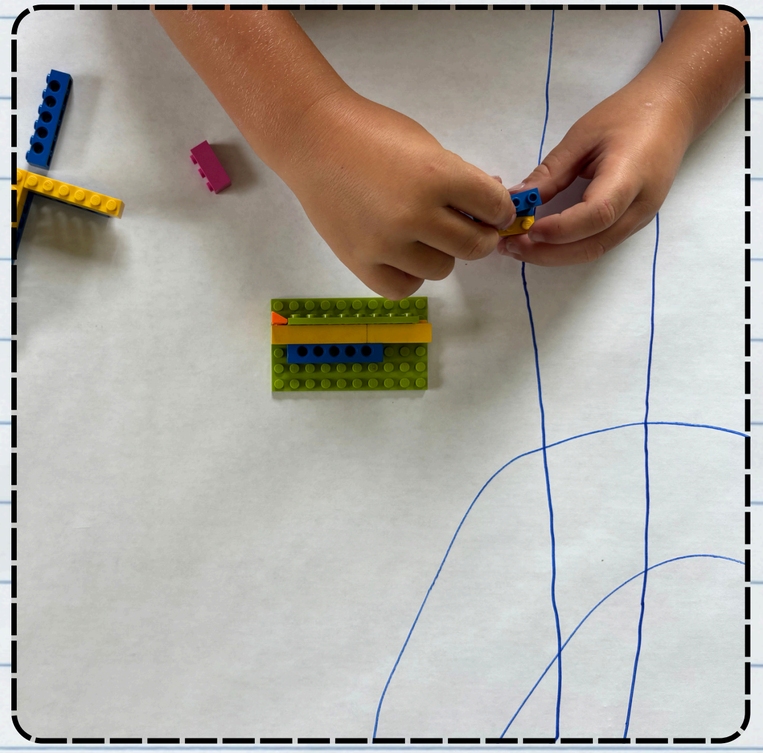
HANDS ON STEAM FOR K-5

CHALLENGE BROKEN DOWN INTO STEPS:

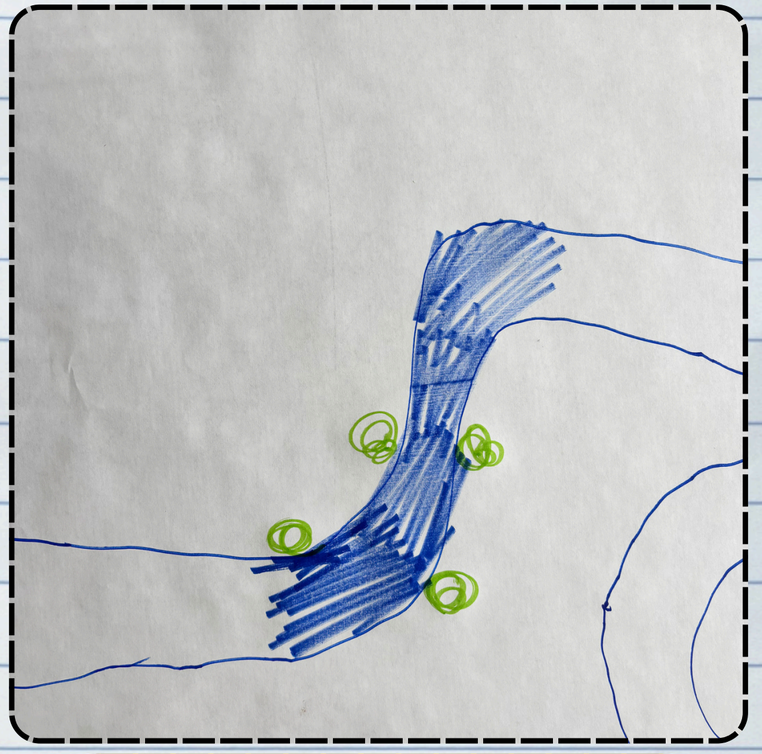
TEACHER INSTRUCTIONS



Use a hand to measure the width of the river.

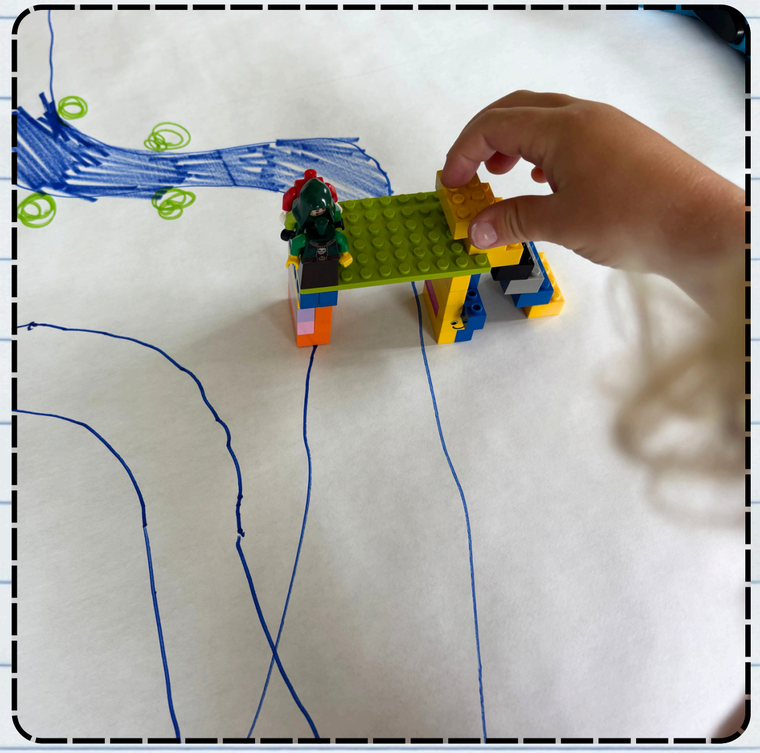


Everyone can all work together or divide up the jobs.



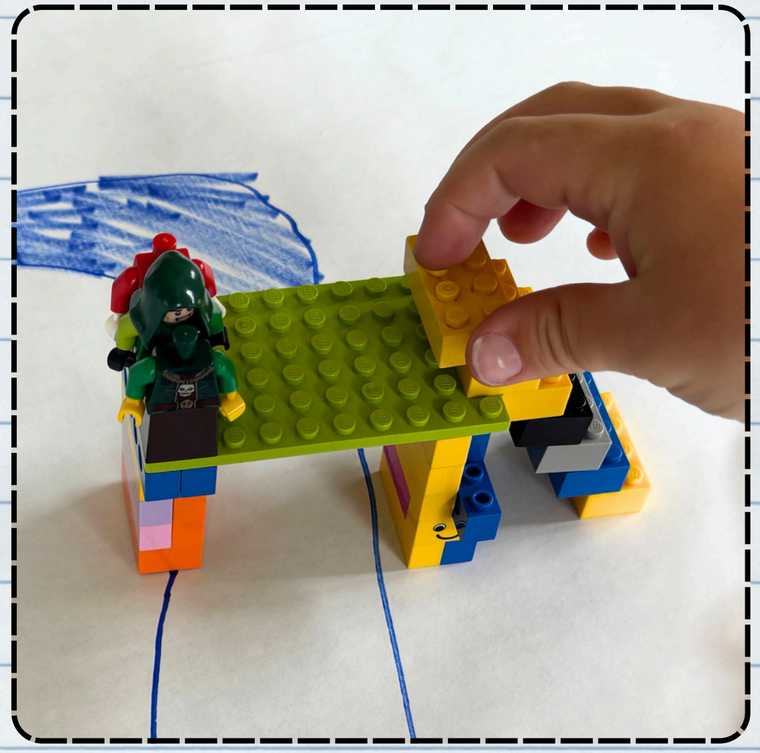
The river can be as detailed or as simple as time allows.

TEACHER INSTRUCTIONS



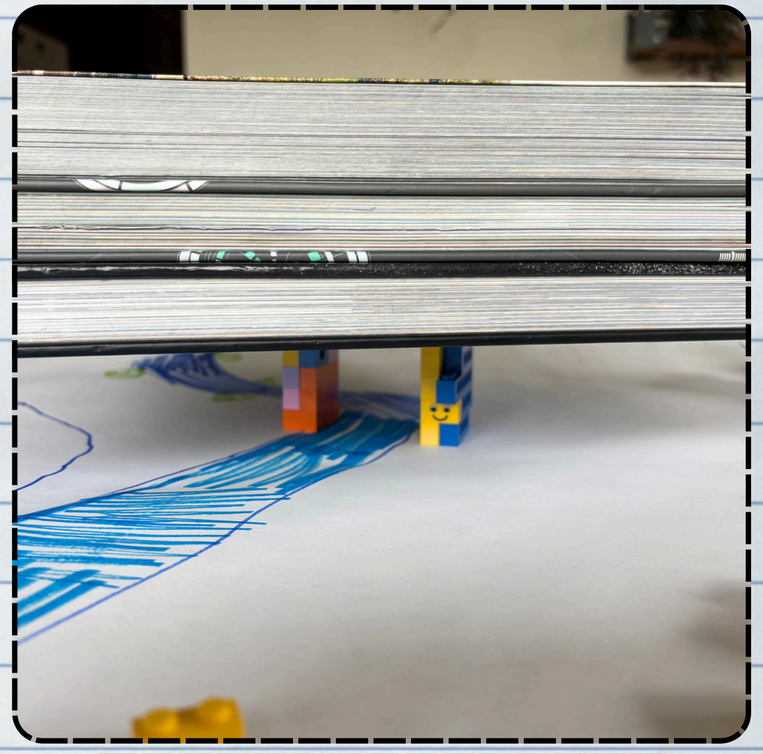
Once the bridge is complete, test it out.

ASK: Is it wide enough to not fall into the river?



Students can experiment with adding stairs or other details to the top of their bridge.

Allow students to go as detailed or as simple as time allows.



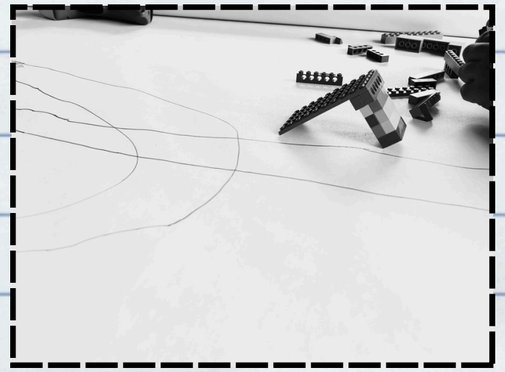
With time, test the bridges to see how much weight they can hold.

Books are a great option for testing weight.

KIDS HAVING TROUBLE?

TEACHER INSTRUCTIONS

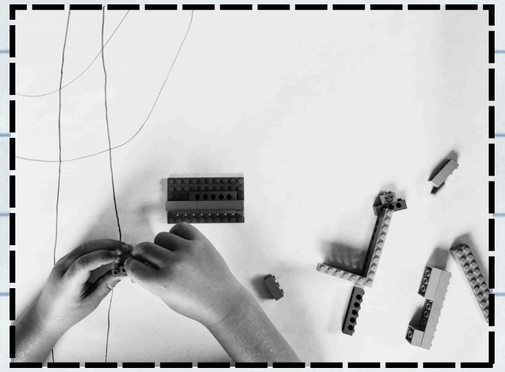
BRIDGE KEEPS FALLING OVER?



If the bridge keeps falling over, a re-design might be needed.

ASK: Why do you think your bridge keeps falling over? Do you think the base is wide enough? Are all of the Legos securely snapped together?

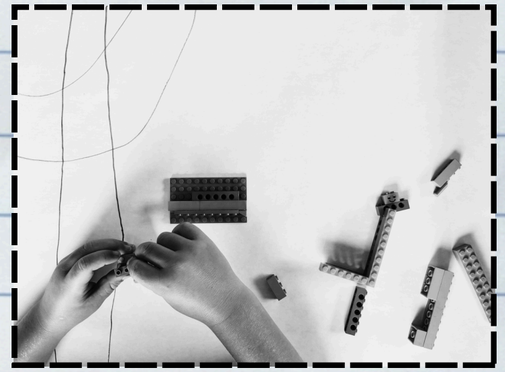
RIVER TOO LARGE?



Some students might draw a large body of water instead of a river.

ASK: Is your river as wide as your hand?

GROUP DISAGREEMENTS?



This is another good oportunity to work on teamwork.

ASK: Does everyone have a job? Could we rotate jobs mid-way through? How can we compromise if we disagree?