CGI

# Straw Building

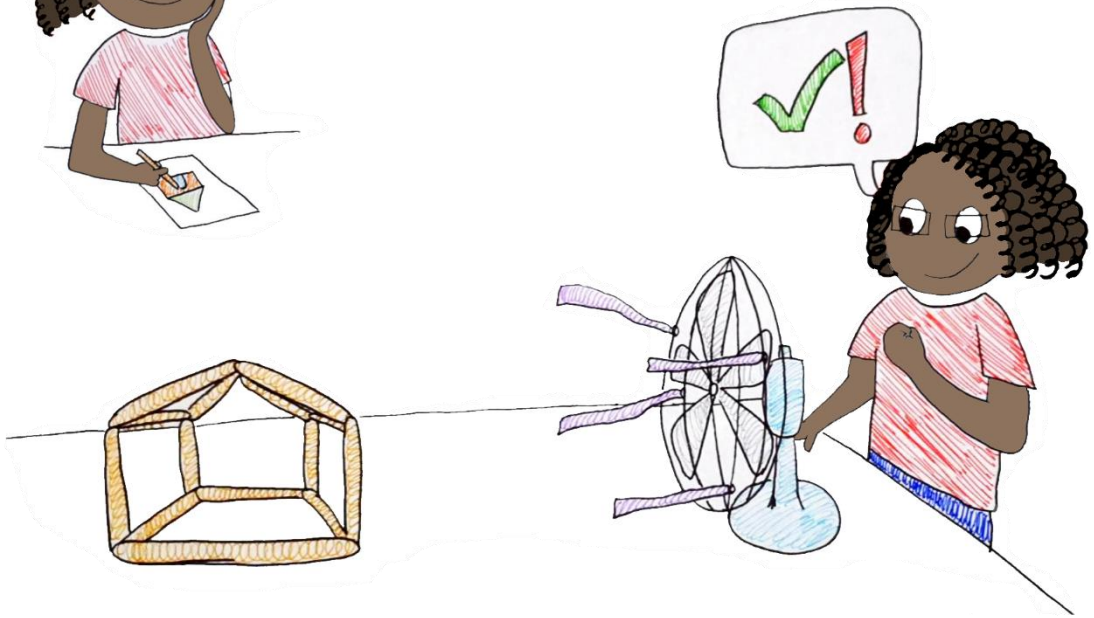
- A fun and easy introduction to engineering!

STEM@CGI AT HOME

# What Will I Learn?

1) Let’s Consider Buildings…

2) Create a Building



3) Test Your Building

4) Talk it Out

# What Do I Need?

Craft Supplies, Testing Supplies, and about an hour

# Let’s Consider Buildings

In the next three slides are some famous buildings- some are centuries old!

- What is interesting about them?
- Why do you think they were built the way they were?
- How do you think the builders made sure the building would last?
- The strongest shapes when building a structure are triangles and arches. How many arches and triangles do you notice?

## Colosseum (Italy)

1,950 years old

## The White House (USA)

228 years old

## Leaning Tower of Pisa (Italy)

847 years old

## Eiffel Tower (France)

133 years old

## The Space Needle (USA)

58 years old

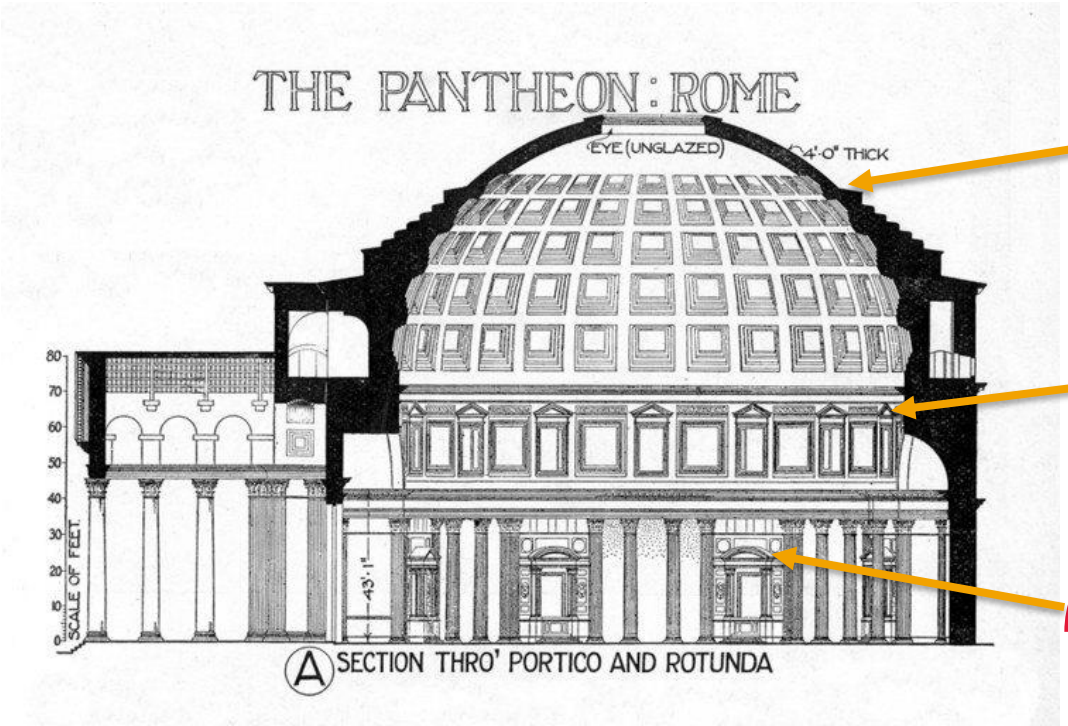
## Taj Mahal (India)

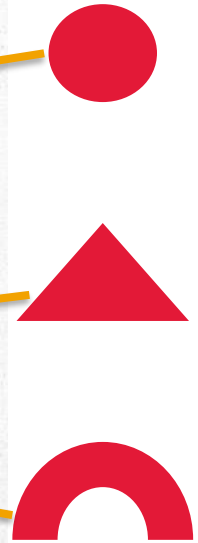
388 years old

## Sydney Opera House (Australia)

61 years old

# Let’s Consider Buildings

# Design Your Own Building!

- What kind of structure do you want to create?
- What are some cool buildings you have seen?
- Which features will you include?
- What is your building's name? (optional)

# Build It!

- Use 14 straws or popsicle sticks to create your building.
- Do you want to decorate it? Now is your chance!
- Make it as sturdy as you can.
- Let the glue dry, if you used any.

# Test It!

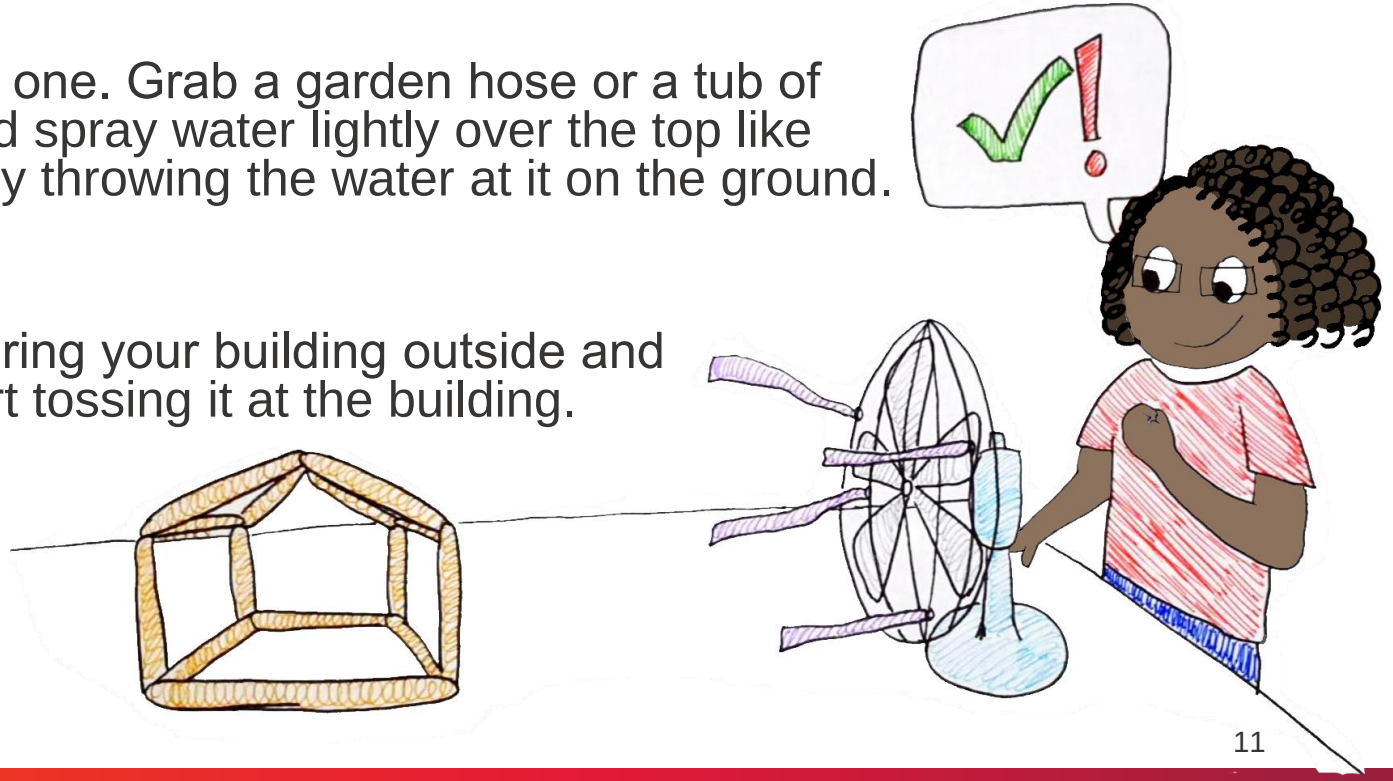
- Wind: Set your building up in front of a fan. Start with your building 3 feet away and the fan on the lowest setting. Can it stay up for 15 seconds? Can it stay up for 15 seconds on higher settings? What about when it's closer to the fan?

- Earthquakes: Set your building on a wobbly flat surface like a table with a thin book underneath a leg, or a box. You can even just grab the base with your fingers and wobble. Can your building stay upright during 15 seconds of wobbling?

- Rain/Flood: You'll want to go outside for this one. Grab a garden hose or a tub of water. Place your building on the ground and spray water lightly over the top like rain. Then, you can test the flood scenario by throwing the water at it on the ground. Did your building survive?

- Hail: You'll want to go outside for this one. Bring your building outside and set it on the ground. Grab some ice and start tossing it at the building. Can it withstand the ice?

- What other tests can you think of?



# Talk It Out

- What did you design your building to do? Do you think it does that? Why or why not?
- Did your structure stay up? Why or why not?
- What could you do differently to help it stay up? Or, what did you do differently, if you built another one?
- What other tests would you want to perform on a building to make sure it is safe?

## Our commitment

We are passionate about helping students in our communities become the next-generation of information technology professionals.