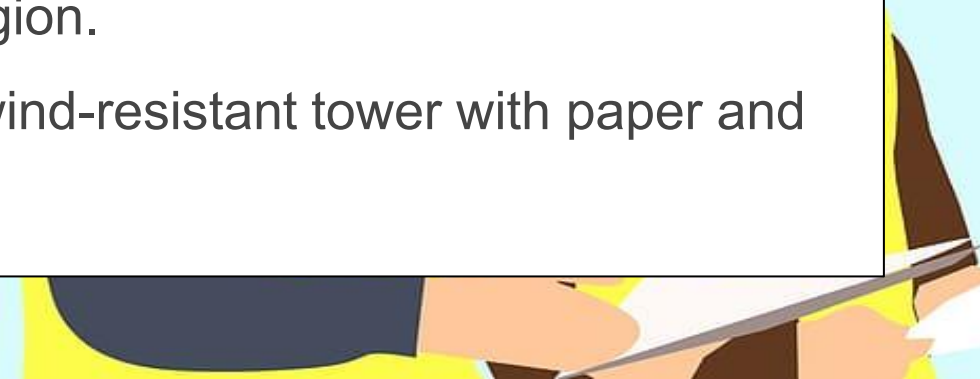Today's Challenge

# Free-Standing Paper Tower

Today, your engineering design challenge is to design and construct a model tower using only paper, tape and scissors. Your team will be given limited supplies and a time limit. The tower must be as tall as you can make it, but also stable enough to stand up to a wind load since it will be built in a hurricane-prone region.

**ASK:** Can I build a free-standing, wind-resistant tower with paper and 30 cm of tape?

# Free-Standing Paper Tower

Your task mirrors the challenges that engineers are given in the real world—with objectives, requirements and constraints such as budgets, material limitations and deadlines. An engineering team that can design a structure to meet the objectives with the fewest materials (hence, less cost), is favored over other companies that cannot utilize the given materials as effectively.

# Free-Standing Paper Tower

**IMAGINE/EXPLORE:** When you are brainstorming about your design approach in your teams, think about the real skyscrapers you have seen as inspiration, including the tallest buildings and towers you have seen. What are their shapes? What are their foundations like?

# Procedure

1. Get into groups of 3ish.
2. You will need: scissors, 30 cm of tape, 6 pieces paper (provided by Mme Q)
3. **DESIGN:** You will have 5 minutes to plan your design.

START PLANNING!

5:00

# IT'S BUILDING TIME!

**CREATE:** You will have 25 minutes to build your design.

**25:00**

# Procedure

**TEST:** Measure and record the height of the final tower. Write your final height on the board.

Then step away from the tower so it is at arm's length and blow out a full breath to simulate a hurricane.

A successful tower will not topple over. Make sure the tower is not secured to a table, the floor or any other piece of furniture or wall.

As an additional component, set the hair dryer to a given speed and place the fan 1 meter from the tower and move closer until the tower falls.