

The Tornado Challenge

It's time to put our knowledge of structures and shapes to work!

Task One: (2 Periods) Think of how you can use your materials in the best way possible.

1. Ms. Lowe will read a story about what city you live in. This story will illustrate what materials your group will be working with. The materials will be wood, straws, or Popsicle sticks.
2. You have been told that a tornado (blow-dryer) is going to be coming through your city. Your house (structure) must be able to withstand a 30 second tornado (Ms. Dunsiger or Ms. Lowe holding a blow-dryer up to your structure).
3. You will spend the first period brainstorming how you will build your house (structure).
4. You are welcome to come to the store (Ms. Dunsiger) and trade your building materials for masking tape.

The MUST Haves...

- Must have a roof that stays on when blown.
- Must use 2/3 of the materials you are provided with.
- Must have enough room for people (toy ones) to get in and out of your house (space in the middle of the house).
- Must have at least one 90-degree angle.
- Must have at least one angle less than 90 degrees (acute angle) and one angle that is more than 90 degrees (obtuse angle).

5. Show Ms. Dunsiger or Ms. Lowe your brainstorming sheet and then proceed to Task Two.

Task Two: (3 Periods) Deal or No Deal

1. You will need to show Ms. Lowe or Ms. Dunsiger 2/3 of your building materials (to prove to us that you will use at least this amount).

2. You will have the opportunity to trade your wood, straws, or Popsicle sticks (resources) for additional resources (masking tape). You will have to think logically about what you lose in order to gain the tape.

20 Straws=80 cm of tape

5 Popsicle Sticks=30 cm of tape

1 Branch of Wood=15 cm of tape

3. You will begin building your structures. You will need to consider your answers to the following questions:

What was difficult about building your structure?

What was challenging about trading resources?

What was the best shape for building? Why?

How could you apply all of this learning to real-life situations? Explain.

Task Three: The Final Challenge

1. We will line up all structures and see what structures hold up against the tornado.
2. We will have a class discussion on why certain structures did better than other ones.
3. Each student will write an individual reflection, answering the following questions:

What were the biggest challenges you faced? Why?

What were your thoughts about trading resources for new resources? Why did you feel this way?

What changes might you make to your structure if given another similar building opportunity? Why? Be specific.

Remember to use the Math and Science Success Criteria to help your group while discussing and completing the tasks.