# Strongest Shape

## Materials

- 3 pieces of construction paper folded into a cylinder, rectangular prism, and triangular prism
- Tape
- Collection of books*
- Data Collection Sheet (attached)

*Note: Select a number of books that are relatively the same size, shape, and weight.

This activity could also be extended by looking at images of buildings, bridges, and structures and identifying the various shapes they are made of.

## Learning Objectives

**I can** describe the attributes of three different buildings

**I can** predict which building will hold the most books

**I can** record the results of an investigation

## Skills

Language Development

Creative Play

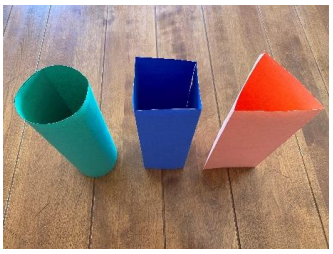
Problem Solving

Math Skills

## Exploration

Begin this activity by folding three pieces of paper into a cylinder, rectangular prism, and triangular prism. Secure each "building" with tape and label them Building #1, Building #2, and Building #3. Then, ask the students to observe the buildings and their attributes:

- ***What do you notice about these three buildings?***
- ***What shapes make up these three buildings?***



Provide the student with a Data Collection Sheet and ask them to draw and identify the 2-dimensional views of each building. Then, explain to students that they will determine which building is the "strongest". Ask students to consider how they will determine this. Then, share the collection of books with the learners and explain that they will use these books as weights to place on the top of each structure. Encourage student thinking:

- ***Which building do you predict will be the strongest? The weakest? Explain why you think this.***
- ***Once we place the books on top of the buildings, how will we know which one is the strongest? The weakest?*** (The strongest building will support the most books while the weakest will collapse.)


After students complete the investigation, ask them to record their results on the Data Collection Sheet and reflect on the activity:

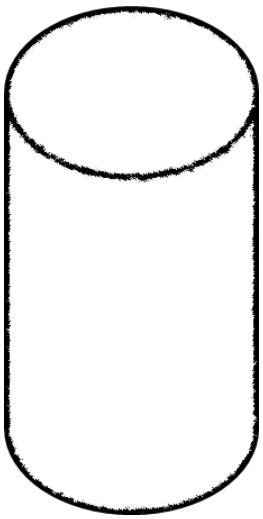
- ***Which building was the strongest? How do you know?***
- ***Which building was the weakest?***
- ***What shapes make up the strongest building? The weakest building?***
- ***Were your predictions correct? Why or why not?***

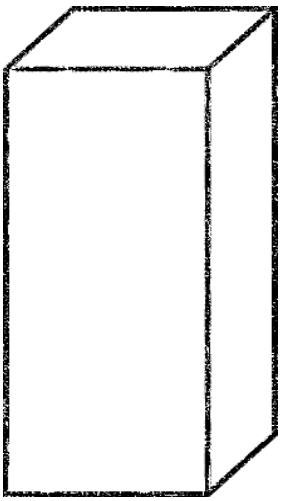
# *Data Collection Sheet*

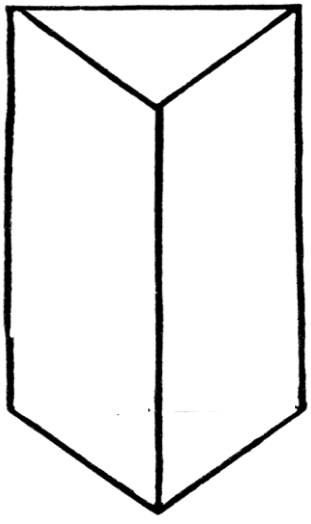
**Directions:** Look at the top and side of each building. Draw the shapes you see.

| | Building #1 | Building #2 | Building #3 |
|---|---|---|---|
| Top | | | |
| Side | | | |

**Directions:** On the line below, record the number of books that was supported by each building. Then circle the **strongest** building.







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