

VIEWS OVER SPAIN



Overview

Students have just learned about the different types of soil and where olive trees are more commonly grown. They know of the land's spices and about what natural resources are kept sacred in Spain. Now students will discover the beauty in Spain by taking a sightseeing tour of the landscapes of Spain. As they explore ways to travel across land, they will become engineers and will develop a bridge that can withstand weight without being destroyed. .

Education Standards

Science

2.2(B) plan and conduct descriptive investigations

2.4(A) collect, record, and compare information using tools

1.2(B) plan and conduct descriptive investigations

1.4(A) collect, record, and compare information using tools

Materials Needed

Prepare ahead:

- 3 craft sticks or straws (each 7 inches long)

- 3 craft sticks or straws (each 4 inches long)

Other materials needed:

- Ruler
- Tape
- Two textbooks similar in height (or something similar)
- Small weights (any small, heavy objects)
- Scale (if available)
- Paper
- Pencil

Vocabulary

Beam a horizontal, weight-bearing structural part

Compression a force that shortens or squeezes tension

Student Objectives

Students will explore how length affects the weight a bridge can hold.

Activity

Show Prezi highlighting the beautiful landscapes over Spain. Allow students to share their thoughts.

Prezi link: <https://prezi.com/view/s8RV8RKqftrshZna2iJy/> (also found on the QR code)

Guide students in the following activity or have them work in teams (task card included for teams with the same directions as below):

1. Gather the necessary materials.
2. Tape 3 craft sticks/straws of the same length together so they lay flat together, side by side.
3. Place the taped craft sticks/straws with each end on the two textbooks to form a bridge.
4. Make a hypothesis as to how much weight the bridge will hold. Write your hypothesis in reflection handout.
5. Slowly add weight to the bridge until the bridge breaks.

6. When the bridge breaks, place all the weights on the scale to determine how much weight the bridge was able to hold.
7. Record the data in your handout.
8. Repeat steps 2-7 with the other sets of craft sticks or straws.
9. Record data for each set.
10. Analyze the data and make a conclusion based on your data.

