

ONE WAY TO TRAVEL: AERI DE MONTSERRAT



Overview

Our Musical Sprouts journey ends with an engineering and mathematical challenge as they explore the breathtaking view of Spain. Montserrat is a multi-peaked mountain range near Barcelona, in Catalonia, Spain. It is part of the Catalan Pre-Coastal Range. If one travels to Montserrat from Barcelona by train, the cable car "Aeri de Montserrat" is one option travelers can take to see the spectacular views of the valley. In this lesson, students will learn about the history of the cable car and will be challenged to construct their own version of a cable car.

Teacher Background

The cable car is called the 'Aeri de Montserrat'. It will take you on a breathtaking journey over the Llobregat River and Valley, up the mountain and right up to Montserrat Monastery. The cable car from the bottom of Montserrat mountain to Montserrat monastery first started running in 1930. It travels at a speed of 5 meters per second and at a gradient of up to 45%. The cable car journey lasts exactly five minutes and travels 1350 meters up the mountain in a small hanging car.

The History of the Aeri de Montserrat:

<https://www.aeridemontserrat.com/en/the-cable-car-and-montserrat/history/>

Education Standards

Science

3.2(A) plan and implement descriptive investigations

3.4(A) collect, record, and analyze information using tools

Vocabulary

Valley a low area between hills or mountains, typically with a river running through it

Mountains a large landform that rises above the surrounding land in a limited area, usually in the form of a peak

Student Objectives

Students will engage in Science, Technology, Engineering, Arts, and Mathematics activities that also connect to a specific location in Spain.

Materials per team

- Balloons
- Straws
- 10 feet of string
- Permanent marker
- Cargo (paper clips, bottle caps, candy, etc.)
- Cereal boxes, construction paper, or any other material to make lightweight cargo containers
- Tape, glue, scissors, and any other materials needed for construction
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Activity

Click on the link to view the Prezi. The directions to their activity can be found on the Prezi link: <https://prezi.com/view/FtoXk7cY6M750F4N7i5h/>

Attached is a QR Code Challenge card for students. The QR Code will take them directly to the PREZI link (same as above) to walk each team through the STEM Challenge process.

If possible, place all materials for each team in a box. Teams should not be allowed to look at materials until they have viewed the entire Prezi.

Extension

Students can draw, write and even use the items to show how they would make it their design better. What other ways can they improve their design?

