

BUILD A COVERED WAGON

From the 1840s to the 1860s more than 300,000 pioneers crossed the plains and mountains of the West along various routes such as the Oregon and Santa Fe trails. Wagon Trains were formed to allow groups to reduce the dangers associated with the long journey west. One of the most popular wagons used by the pioneers was the Conestoga Wagon. As pioneers began going further west, they discovered the need for smaller and lighter wagons and designed the prairie schooner. In this STEM activity, students will build a covered wagon with specific constraints. Students should use what they know about covered wagons and simple machines to build a covered wagon out of everyday materials.

The constraints for this activity are:

- The wagon should be pulled 10 feet using a wagon tongue.
- The wagon should be able to carry the pioneer's supplies.
- The wagon must be covered to protect the pioneer's supplies.

To test this activity, have students pull their wagon using the wagon tongue for a distance of 10 feet. The wagon should remain sturdy with the top attached. As an extension, have students work in groups to build models of the various landforms that the pioneers would cross. Each group should make a different landform, and then place the landforms together in the order that the pioneers would cross.

SUGGESTED MATERIALS

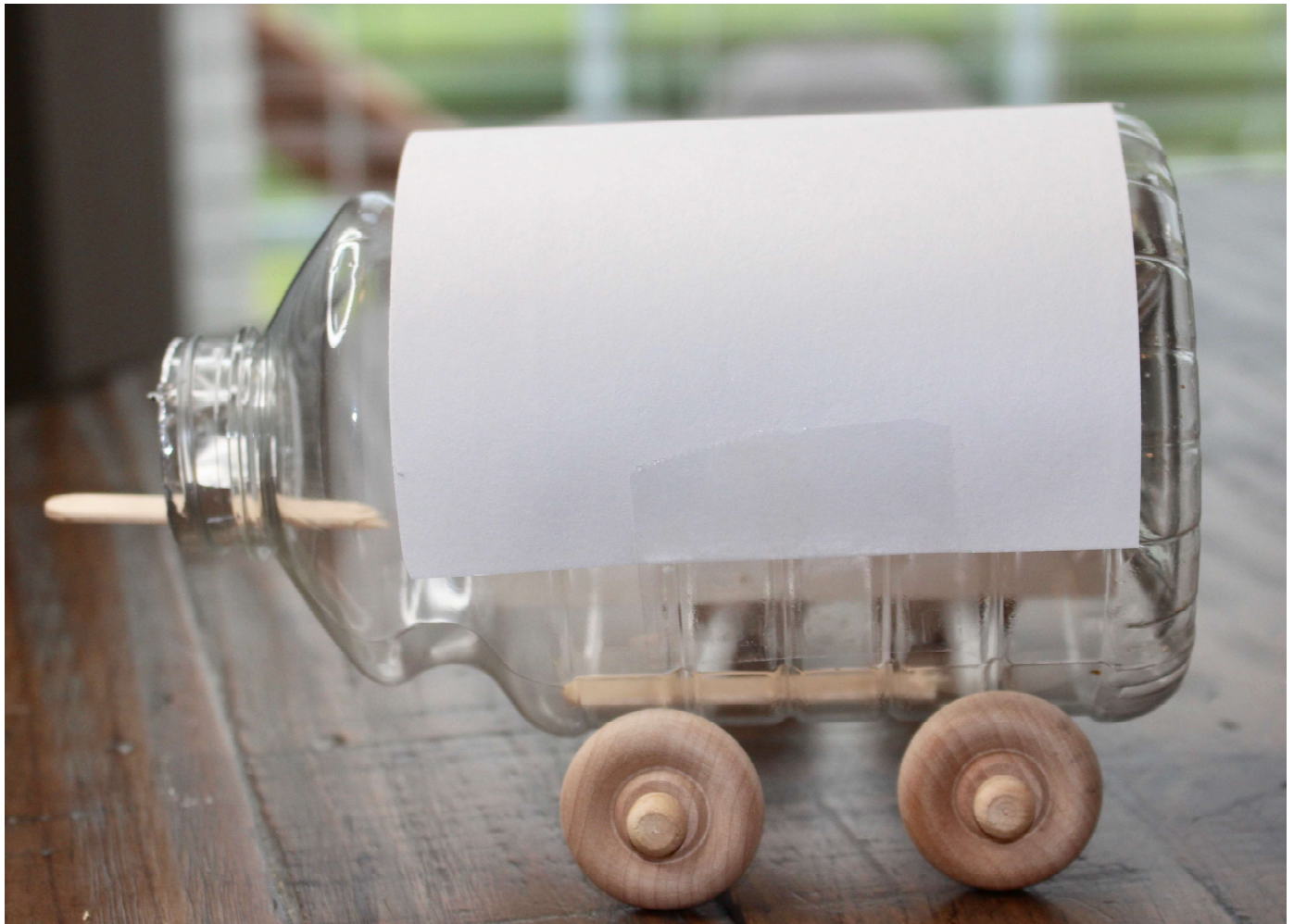
There is no mandatory or required material for this activity. The list below simply provides a few suggestions for students and teachers.

- water bottles
- cardboard tubes
- wooden spools
- plastic cups and plates
- string and yarn
- rubber bands
- fabric scraps
- craft sticks
- straws
- Legos

SUGGESTED WEBSITES

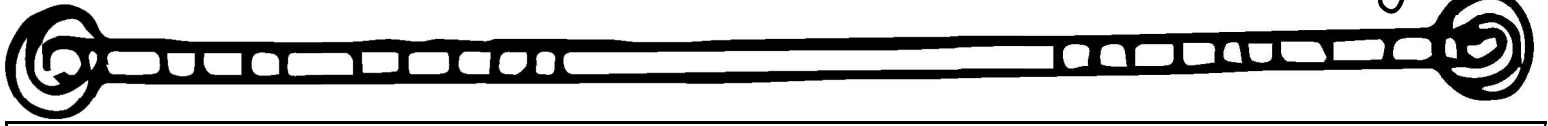
- https://www.ducksters.com/history/westward_expansion/oregon_trail.php
- <https://kidskonnnect.com/history/westward-expansion/>
- <http://www.oregonpioneers.com/wagon.htm>
- <https://www.history.com/topics/conestoga-wagon>
- <http://www.historybits.com/west-wagon-trains.htm>

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STEM challenge



The Challenge

In this STEM activity, students will build a covered wagon with specific constraints. Students should use what they know about covered wagons and simple machines to build a covered wagon out of everyday materials. The constraints include:

- The wagon should be pulled 10 feet using a wagon tongue.
- The wagon should be able to carry the pioneer's supplies.
- The wagon must be covered to protect the pioneer's supplies.

Question

What geographic features did pioneers encounter on their journey west?

What are some of the essential wagon parts?

How were covered wagons designed to be able to cross each type of land form?

Brainstorm

What should you consider as you build your wagon? What materials will work best?

My Plan

Sketch your design here.

Test

Could your wagon be pulled with its tongue?

Did your wagon's top./cover stay in place as it traveled?

Could your wagon travel 10 feet? How far did it go?

Revise/Improve

Did your plan work? What changes can you make to improve your design?

Retest

Could your wagon be pulled with its tongue?

Did your wagon's top./cover stay in place as it traveled?

Could your wagon travel 10 feet? How far did it go?

Reflect

Did your improvements work? What are your next steps?

What went well?

What could you do differently next time?

What did you learn through this activity?