

# PLTW Launch

## The Changing Earth Launch Log

**Name:**

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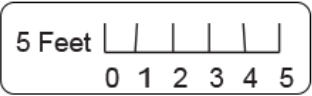
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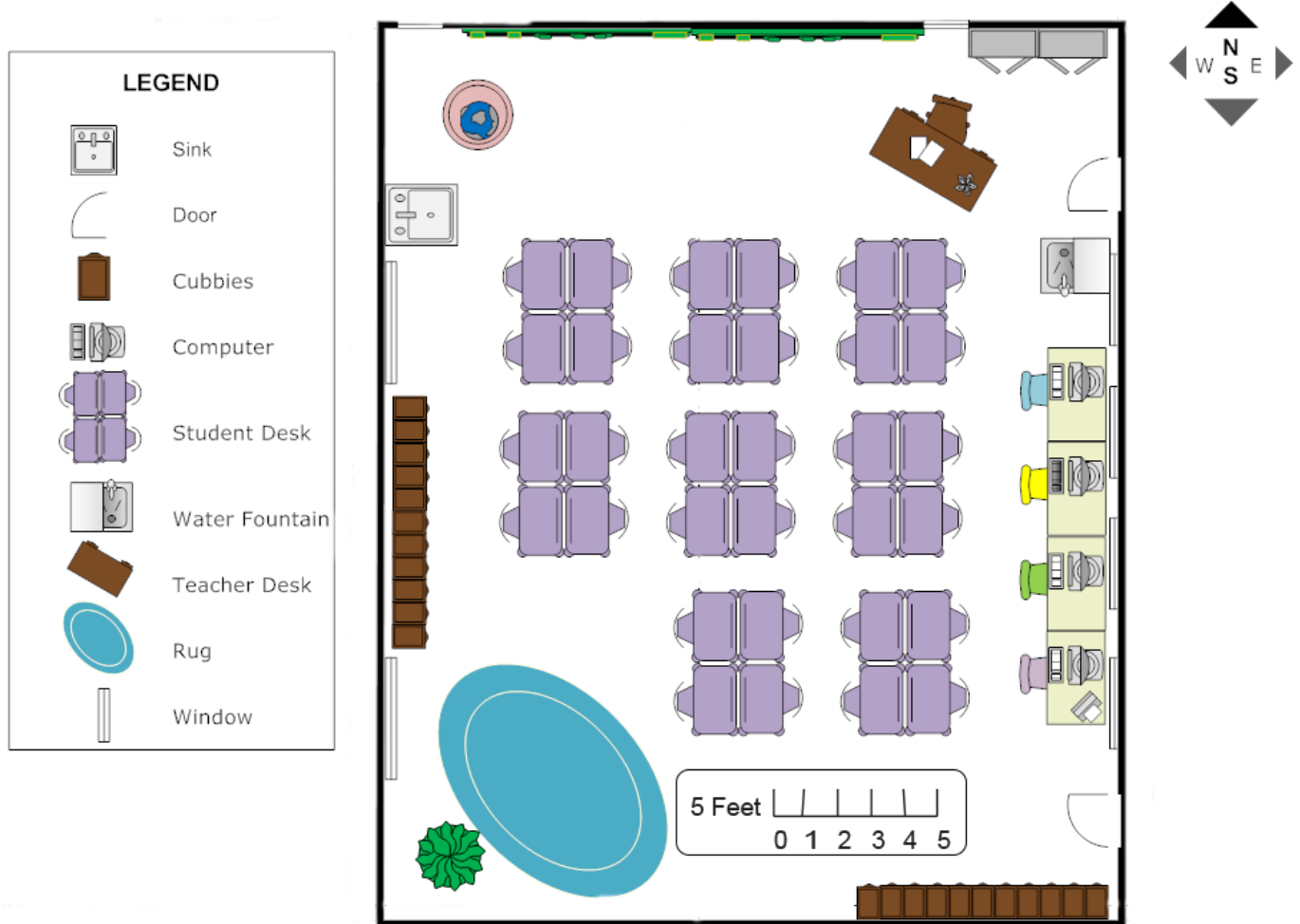
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# Activity 1: All About Maps

<p><i>First Stop...</i></p>	<p>What information does a legend show?</p> <hr/> <hr/> <hr/>
<p><i>In the City...</i></p> 	<p>What information does a compass rose show?</p> <hr/> <hr/> <hr/>
<p><i>Off to the Country...</i></p> 	<p>What information does a scale bar show?</p> <hr/> <hr/> <hr/>
<p><i>Up, Down, All Around...</i></p>	<p>What information does this map show? (This map is called a topographical map.)</p> <hr/> <hr/> <hr/>

Use the map to answer the questions below.



Is the sink on the north, south, west, or east side of the classroom?

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How wide is the classroom? Hint: Use the scale bar near the bottom of the map. The answer doesn't need to be exact.

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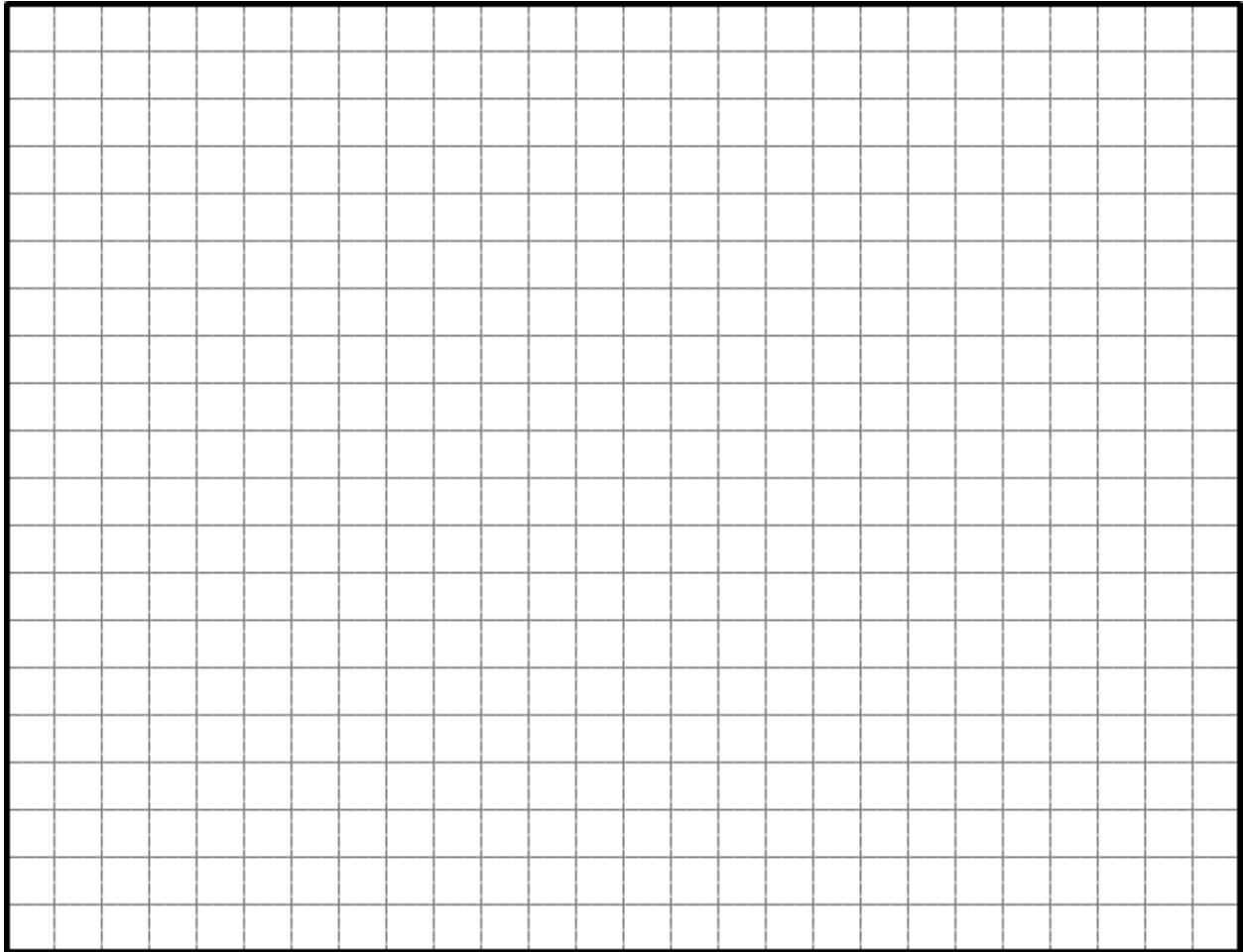
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What is on both sides of the cubbies on the western side of the classroom?

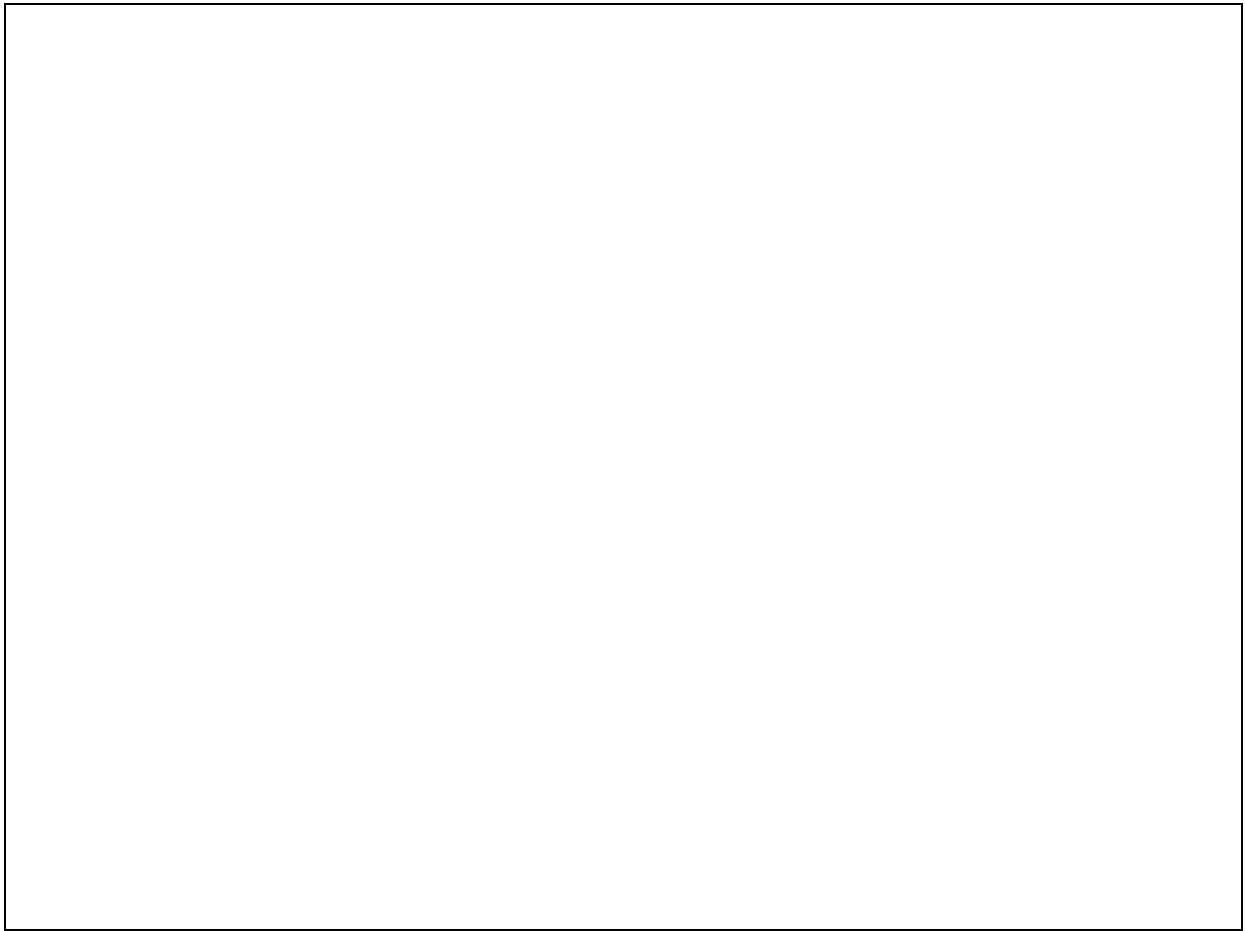
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Create your own map:



**Legend:**



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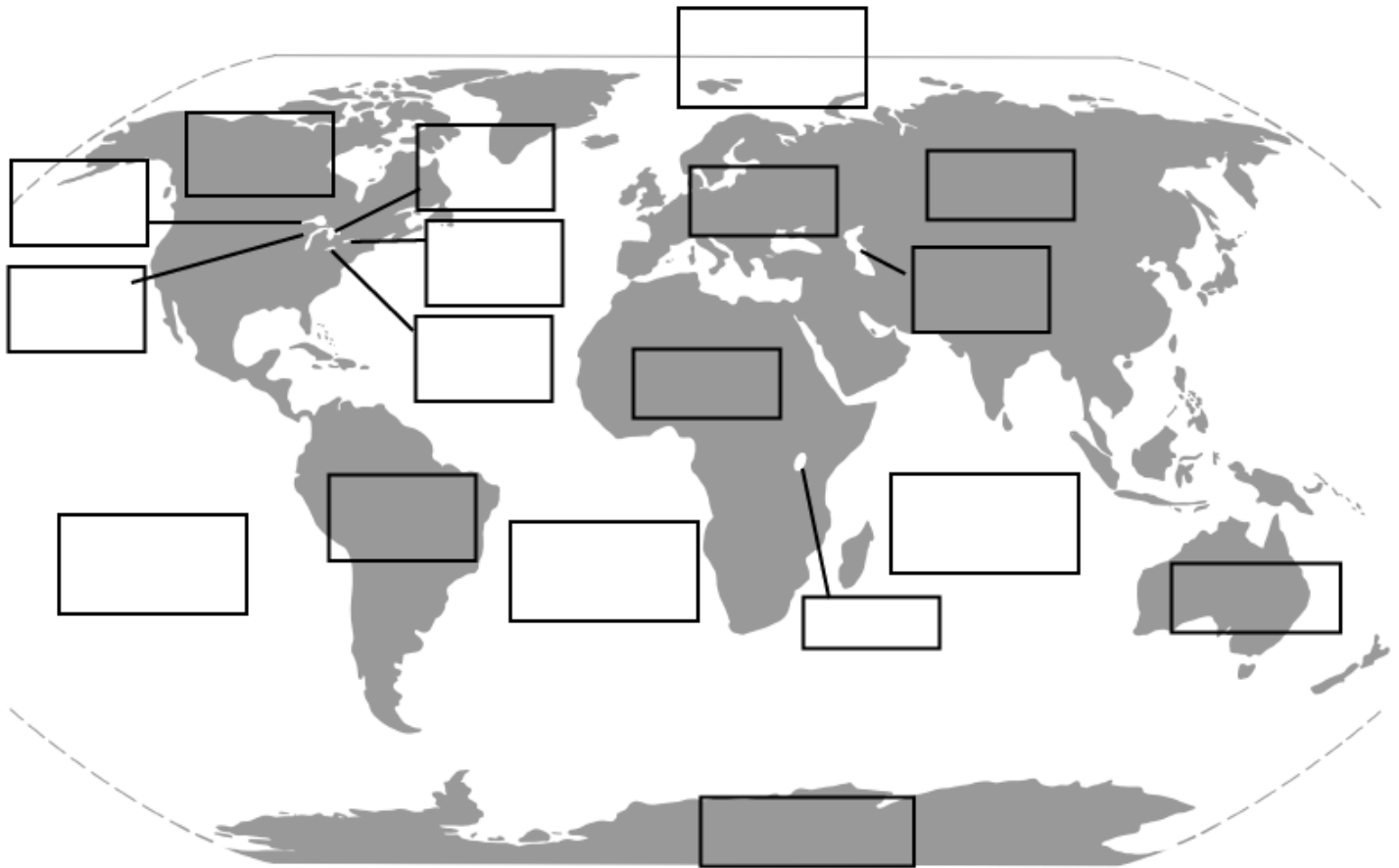
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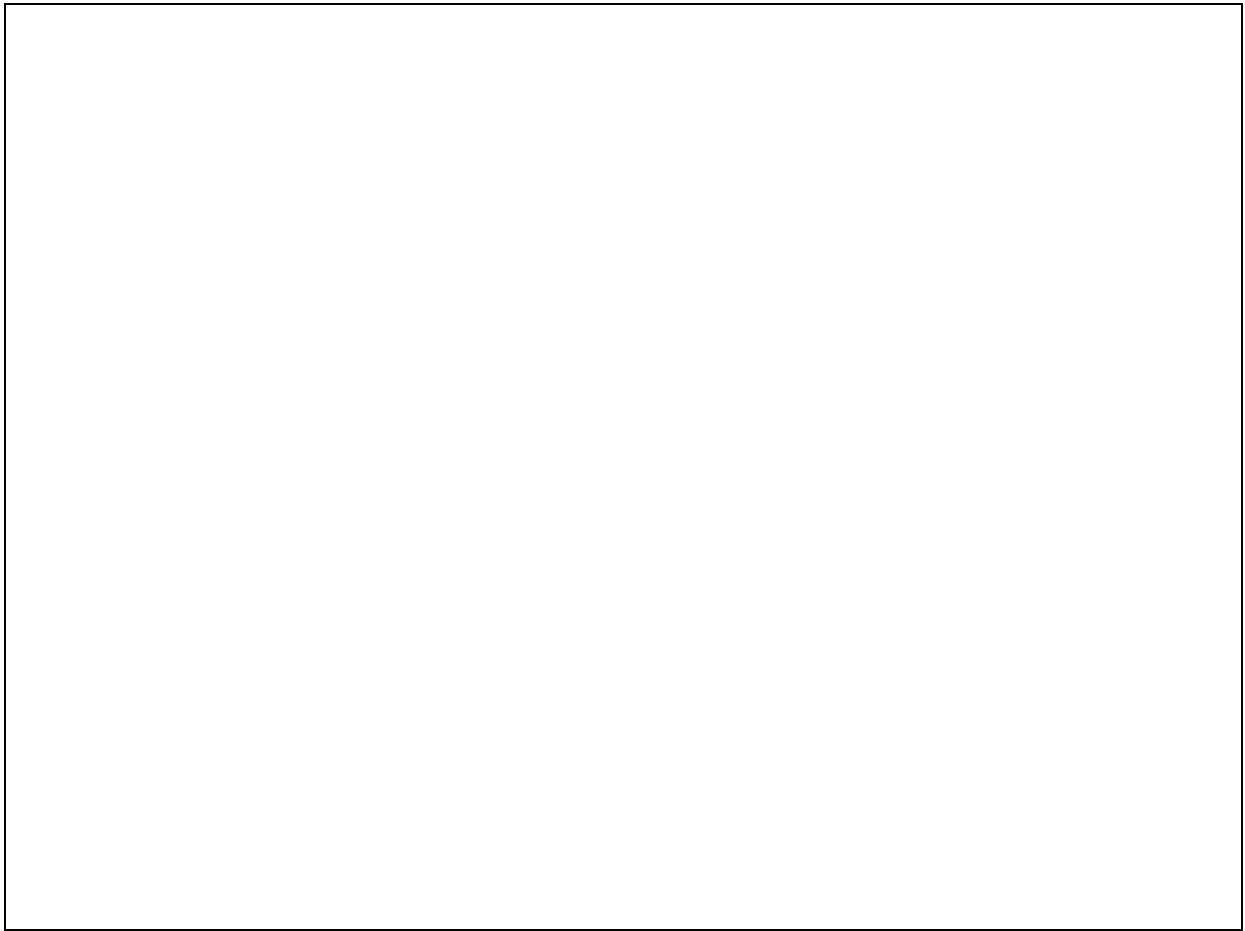
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## Activity 2: Water, Water Everywhere



North America	South America	Europe	Asia	Africa
Australia	Antarctica	Pacific Ocean	Atlantic Ocean	Arctic Ocean
Indian Ocean	Lake Superior	Lake Michigan	Lake Huron	Lake Ontario
Lake Erie	Lake Victoria	Caspian Sea	Yangtze River	Amazon River
Nile River	Mississippi River			



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# Activity 3: Changing Earth's Surface



What forces do you think were involved in the erosion of the surface of the land to create this landscape? Explain your reasoning.

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What forces do you think were involved in the erosion of the surface of the land to create this landscape?

Explain your reasoning.

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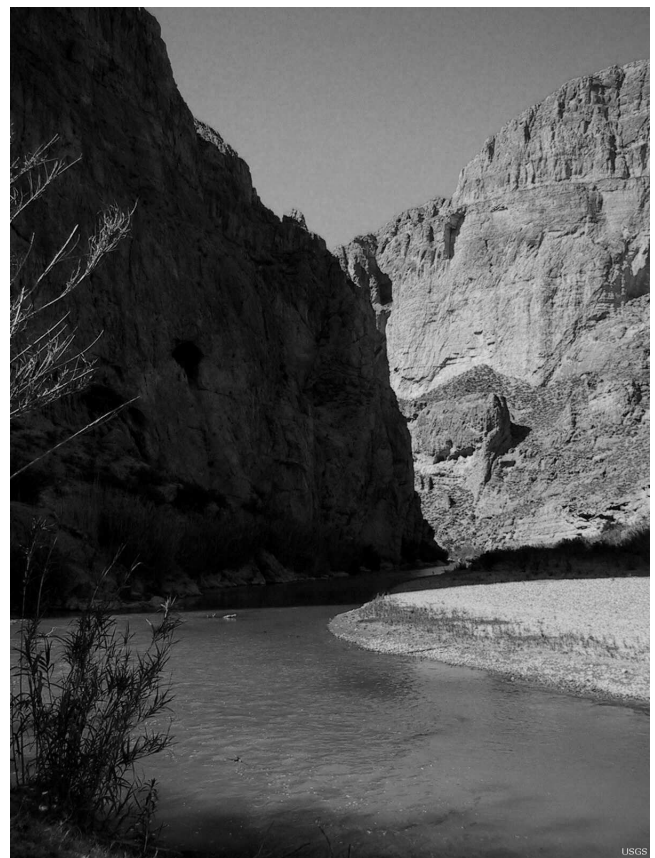
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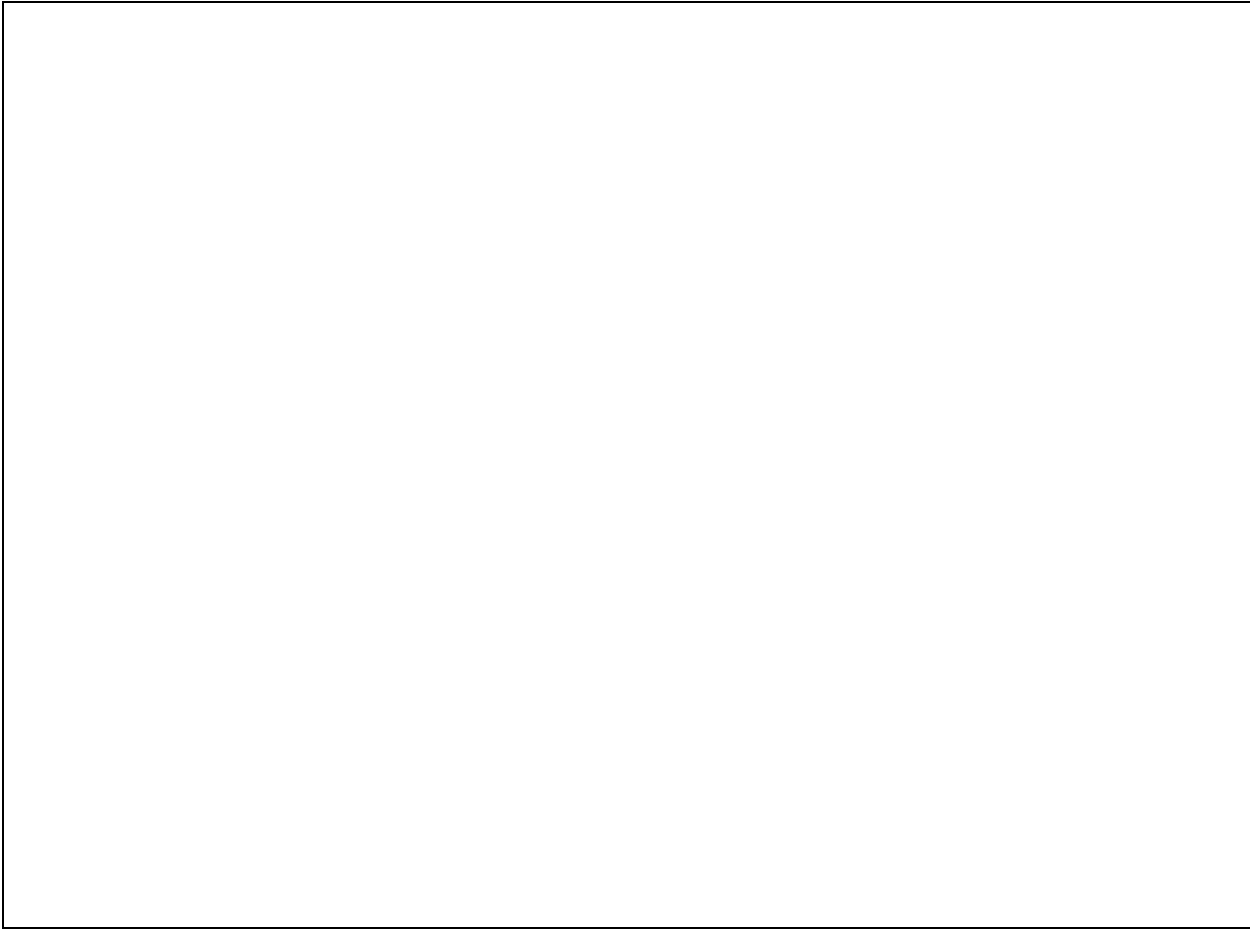
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# Project: Investigating Erosion

## Prediction

Which force do you think will cause more erosion on your land model: wind, an earthquake, ice, or water? Explain your prediction.

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## Observations

Force of Erosion	Milliliters (ml) of sand eroded	Observations of erosion
Wind		
Earthquake		
Ice		
Water		

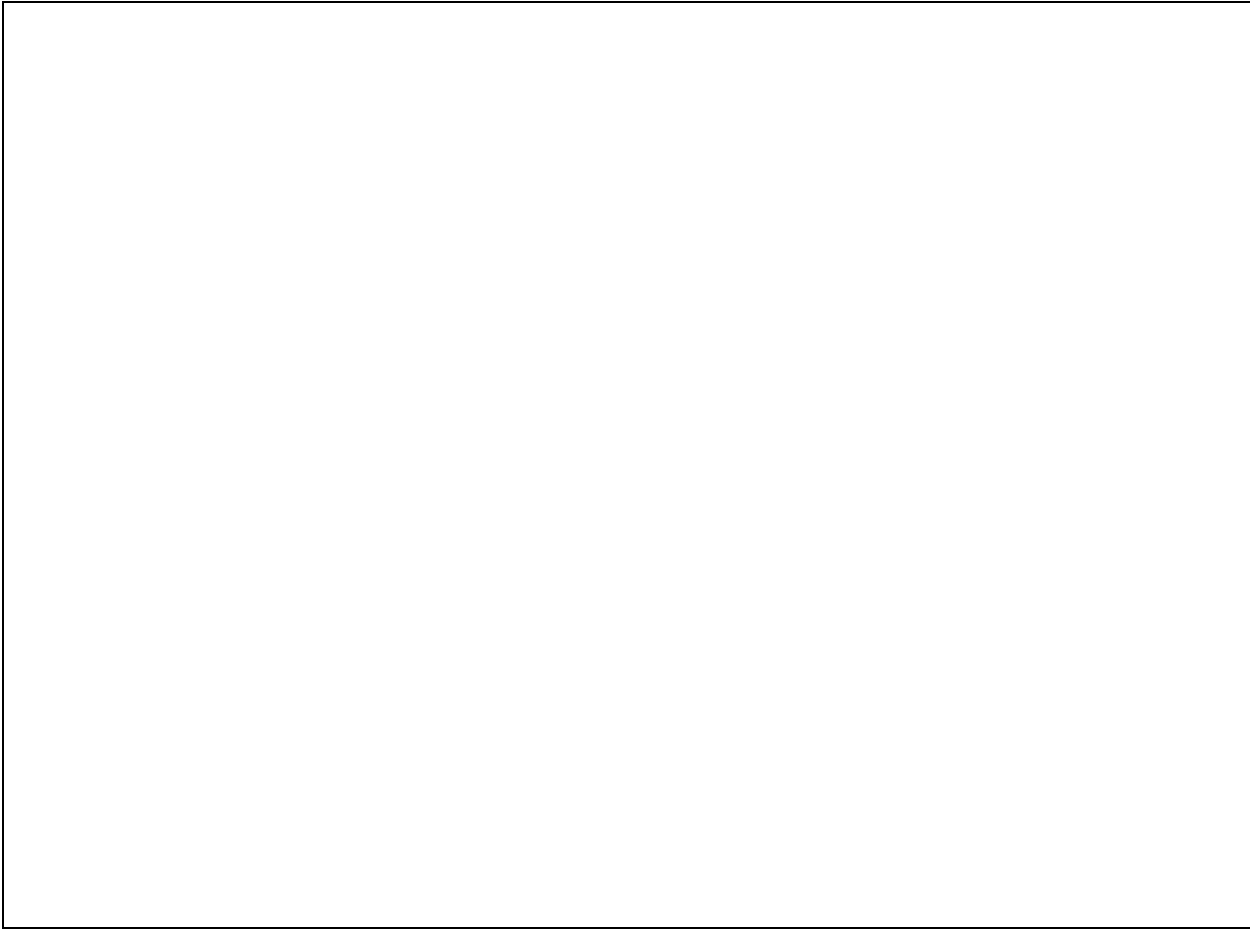
Explain what you learned from your investigation. Now look at your data. Was your prediction correct? Why or why not?

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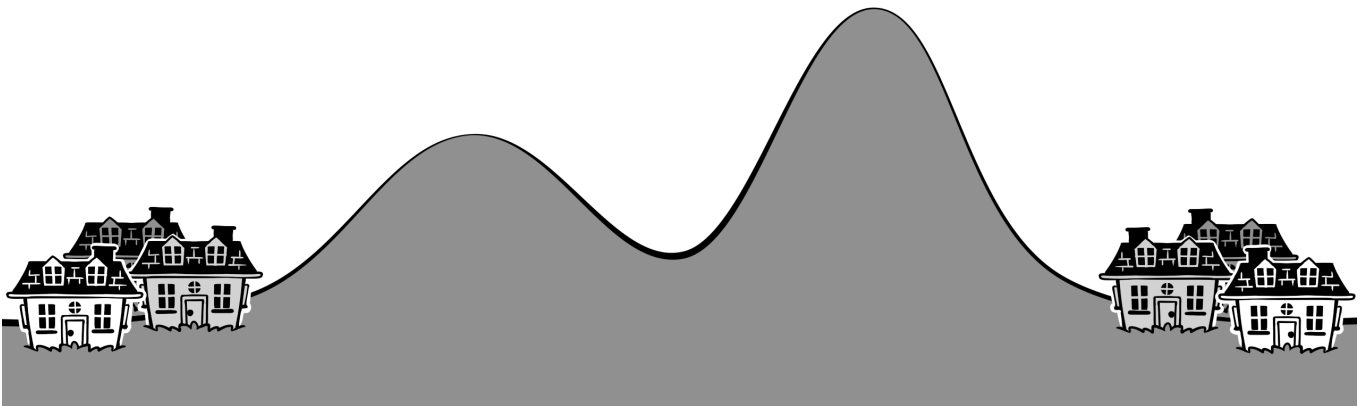
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# Problem: Save the City!

## Part 1 – Mapping

Look at the map below and circle the houses you think are most at risk from a landslide.



Why did you circle those houses? Use evidence from the map to explain.

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## Part 2 – Preventing Erosion

**Ask:** What is the problem?

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**Ask:** What information do I need to solve the problem?

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## Reflection

<b>Ask</b>	
• I can explain the design problem.	
• I can find information that I need to solve the problem.	
<b>Teacher Notes</b>	



**Explore:** How can you try to solve the problem? Write or sketch.

List and describe your ideas:

Sketch your ideas:

Talk to your partner and share ideas. **Circle the idea** you think will work best to solve the problem.

## Reflection

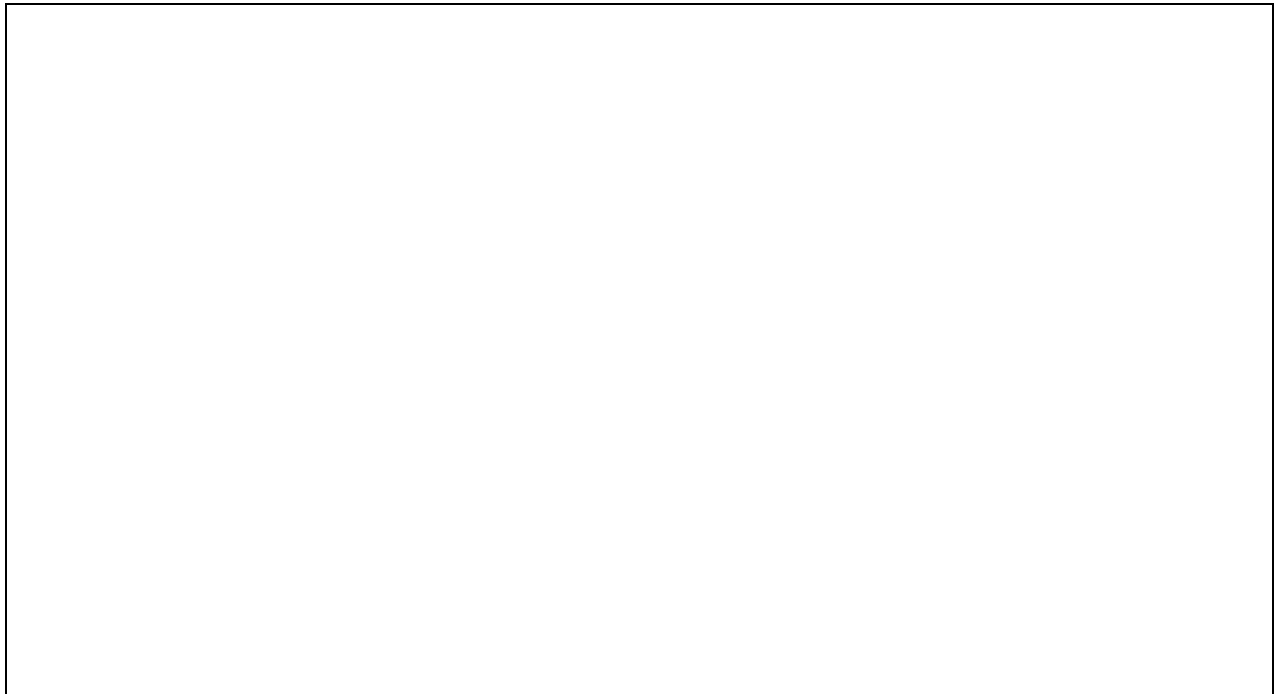
Explore	
• I can research to find out about ways to solve the problem.	
• I can brainstorm ideas for how to solve the problem.	
<b>Teacher Notes</b>	

Use this space if you need more room for drawing.

**Model:** Draw and label your plan to solve the problem.



**Model:** Draw or attach a picture of your final design.

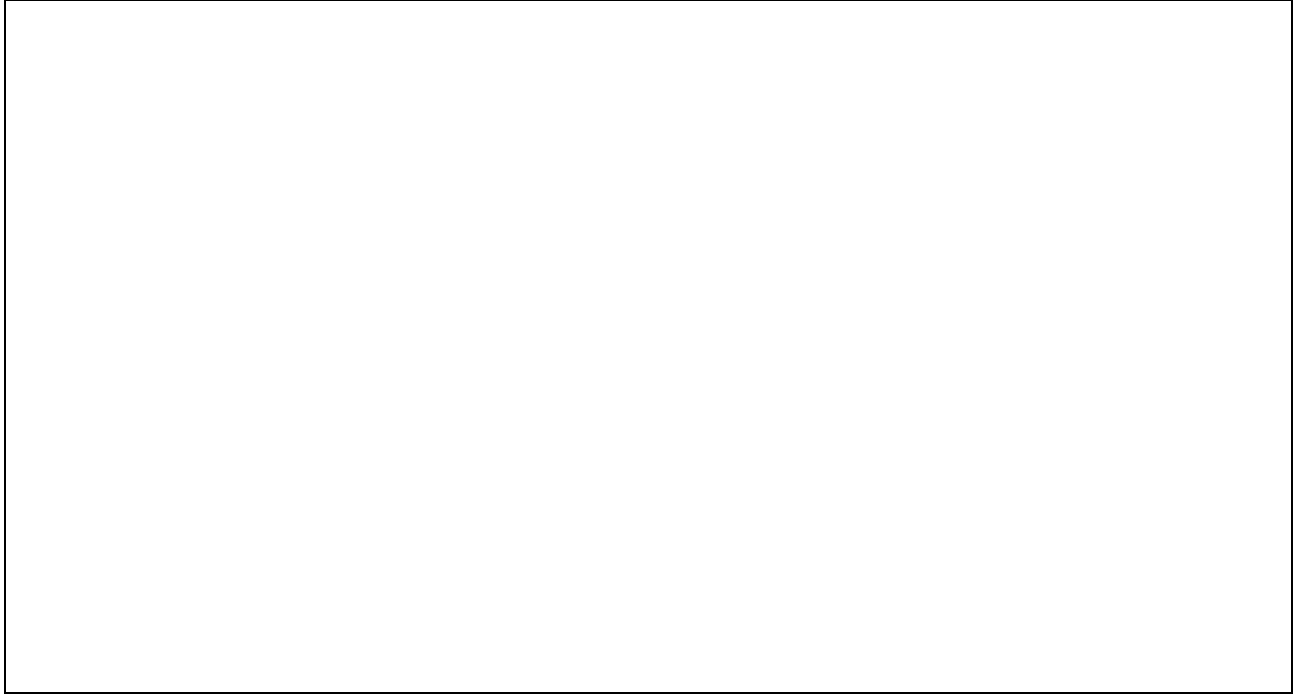


## Reflection

<b>Model</b>	
• I can draw a sketch of my plan.	
• I can explain my sketch and my plan.	
• I built a model that solves the design problem.	
<b>Teacher Notes</b>	

Use this space if you need more room for drawing.

**Evaluate:** Draw or attach a picture of your partner and you testing the design.



**Evaluate:** Record the data from your test below.

<b>Milliliters (ml) of sand eroded</b>	<b>Observations of erosion</b>

**Evaluate:** Explain one strength and one weakness of your model.

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**Evaluate:** Compare your results with another group. Which design worked best and how do you know?

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**Reflection**

<b>Evaluate</b>	
• I can explain the strengths and weaknesses of my model.	
• I can compare how my model performed against other models.	
<b>Teacher Notes</b>	

**Explain:** Did your model solve the problem? Why or why not?

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**Explain:** How would you change your design? How would these changes improve your design?

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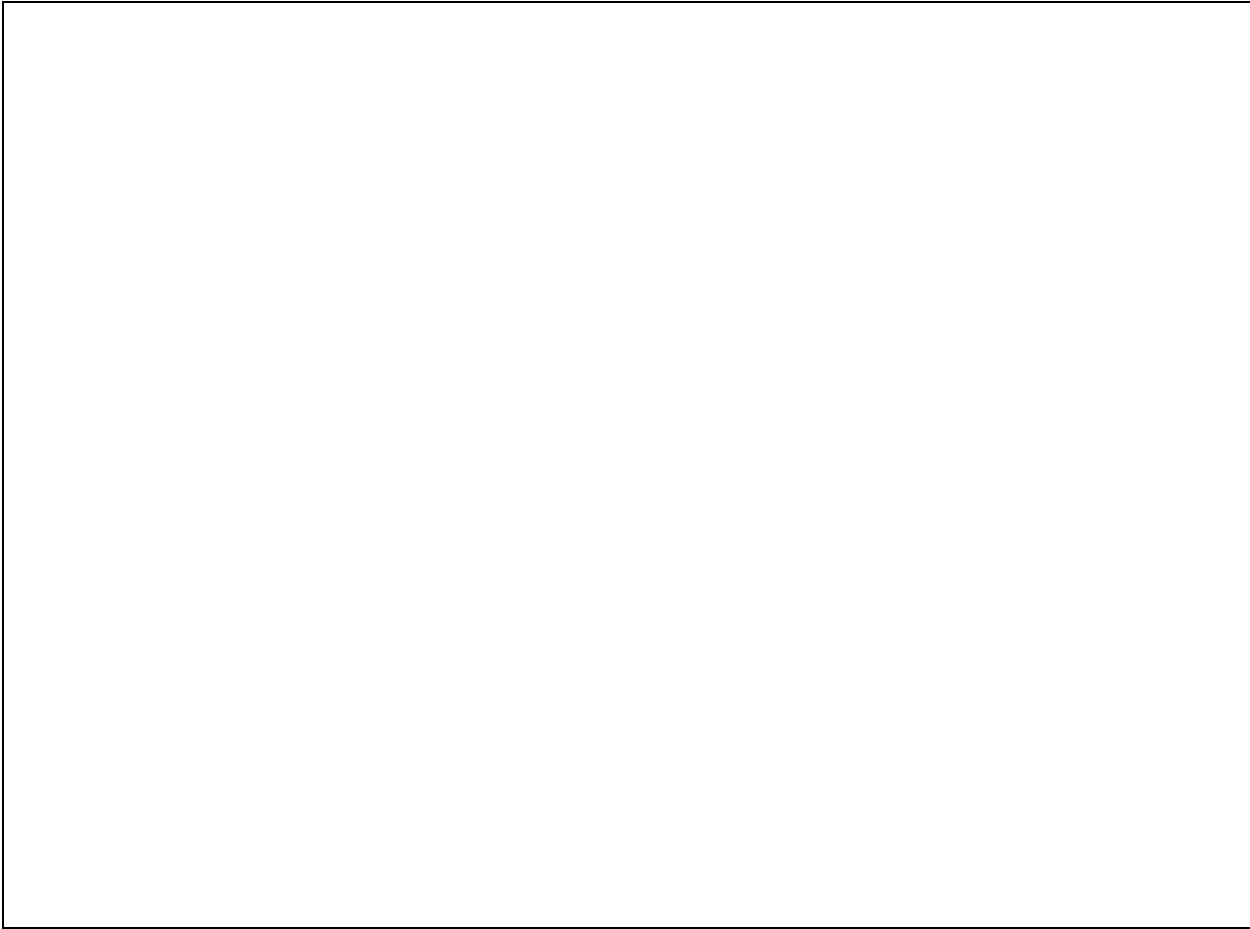
Draw a picture to show how you would change your design.



## Reflection

<b>Explain</b>	
• I can explain how my model works and how it solved (or did not solve) the problem.	
• I can suggest ways to improve my design.	
• I can predict how my improvements will solve the problem.	
<b>Teacher Notes</b>	





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