

Erosion Prevention Review

Week 25 — Friday | Protecting Soil and Building Better Solutions

Reading Time

This week we explored the three main erosion variables: water speed, vegetation cover, and land slope. We learned that faster water causes more erosion, that vegetation protects soil by slowing raindrops and holding soil with roots, and that steeper slopes lead to faster water flow and more erosion. Through our experiments, we saw firsthand how changing one variable at a time produces different results.

Understanding erosion variables helps us design **erosion prevention** strategies. Farmers use **cover crops** to keep the ground covered even when they are not growing their main crop. Some farmers practice **contour plowing**, which means they plow along the curves of a hillside instead of up and down, slowing water flow and reducing erosion. **Terracing** cuts step like platforms into steep hillsides, turning one steep slope into several gentle slopes. These methods have been used for thousands of years in places like the rice terraces of the Philippines and the vineyards of Europe.

Civil engineers design **retaining walls** to hold soil on steep slopes, **drainage channels** to direct water safely away from buildings, and **sediment barriers** like straw fences around construction sites to catch eroded soil before it reaches streams and rivers. Protecting soil is not just about saving dirt. Soil erosion can cause floods, pollute waterways with sediment, destroy habitats, and make farmland less productive. By understanding erosion variables, we can protect our environment, our food supply, and our communities from the harmful effects of soil loss.

Reading Questions

1. What are three ways that farmers prevent erosion?

2. How does contour plowing help reduce erosion?

3. What is terracing and how does it work?

4. Explain why preventing soil erosion is important for our environment, food supply, and communities. Give at least two specific reasons.

Vocabulary Grid

Write a definition or draw a picture for each word.

 **Erosion Prevention**

 **Cover Crops**

 **Terracing**

 **Retaining Wall**

 **Contour Plowing**

 **Civil Engineer**



Erosion Variables Review Chart

Fill in the complete comparison chart for all three variables.

Variable	What It Is	How It Affects Erosion
Water Speed		
Vegetation Cover		
Land Slope		



Erosion Prevention Matching

Match each prevention method with the erosion variable it addresses.

Prevention Method	Erosion Variable It Addresses
Planting cover crops	
Building terraces on a hillside	
Building a retaining wall	
Contour plowing	
Creating a drainage channel	



Design an Erosion Prevention Model

Draw a plan to protect a steep hillside from erosion. Show at least two different methods from this week's lessons.

Label your drawing with the names of each prevention method you used and explain why you chose each one.

Science Journal: Erosion Prevention

Think about the erosion variables you tested and the prevention strategies you learned.

Prompt 1: Which erosion variable surprised you the most during your experiments? Describe what you expected and what actually happened.

Prompt 2: Imagine you are a civil engineer hired to design a new highway through a mountainous area. What erosion prevention strategies would you use? Explain your choices.

Prompt 3: Look around your neighborhood or school. Can you find a place where erosion might be a problem? What could be done to prevent it?

True or False — Circle Your Answer

- ☐ 1. Cover crops help prevent erosion by keeping the ground covered.
- ☐ 2. Terracing makes steep hillsides into gentle slopes.
- ☐ 3. Contour plowing means plowing straight up and down a hillside.
- ☐ 4. Soil erosion can cause floods and pollute waterways.
- ☐ 5. Faster water causes less erosion than slower water.
- ☐ 6. Retaining walls hold soil in place on steep slopes.
- ☐ 7. Removing vegetation always helps reduce erosion.
- ☐ 8. In a controlled experiment you change only one variable.

Fill in the Blanks

Word Bank: erosion prevention cover crops terracing retaining wall contour plowing vegetation cover water speed
land slope

- 1. Strategies to protect soil from being carried away are called _____.
- 2. Crops planted to keep soil covered between main harvests are _____.
- 3. Cutting step like platforms into a hillside is called _____.
- 4. A wall built to hold soil in place is a _____.
- 5. Plowing along the curves of a hillside is _____.
- 6. Plants and grass that protect the ground are _____.
- 7. How fast water moves is its _____.
- 8. How steep the ground is its _____.

★ Week 25 Checklist

Check off each concept you feel confident about.

Concept	I Understand This
I can explain the three erosion variables.	
I can describe how water speed affects erosion.	
I understand how vegetation protects soil.	
I can explain how land slope affects erosion.	
I can design an erosion prevention strategy.	
I understand the importance of a controlled experiment.	
I can connect erosion science to real world problems.	