Water at Work

Trace water's properties from rock cracks to community systems.

6.6 "The student will investigate and understand that water has unique physical properties and has a role in the natural and human-made environment. Key ideas include water is referred to as the universal solvent; water has specific properties..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each sentence that tells how a water property or phase change causes an effect. Circle the effect in the same sentence.

A Community Shaped by Water

1. Water moves through a community in many ways. A river supplies a treatment plant, and pipes carry cleaned water to homes and schools. Farmers use water to grow crops, while a dam may use falling or flowing water to turn turbines that generate electricity. Safe drinking water and sanitation protect public health by reducing the spread of some diseases. Because water is often available as a liquid, people can transport it, store it, and use it for many needs.

2. At a stream bank, water can dissolve more kinds of substances than most liquids, so scientists call it the universal solvent. This does not mean that water dissolves everything. Dissolved minerals can be carried away, and water that freezes in cracks can help break rock apart. Water also has other useful properties. Its surface molecules attract one another, creating surface tension. Water resists quick temperature change because it can absorb or release much thermal energy.

3. Thermal energy changes water's state. When liquid water gains enough thermal energy, it evaporates into water vapor. When water vapor loses thermal energy, it condenses into liquid droplets. Lakes and oceans warm and cool more slowly than land because water absorbs and releases large amounts of thermal energy. Near a large body of water, this can make temperatures less extreme than in places farther inland. These phase changes also help move water and energy through weather.

2 ANSWER WITH EVIDENCE

Use the passage

1. Why is water called the universal solvent, and what important limit does the passage give?

2. Describe two ways water can help weather, or break down, rock at a stream bank.

3. What happens when water vapor loses thermal energy? How can a large body of water make nearby temperatures less extreme?

4. Name three ways water supports people in a community.

3 YOUR TURN

Your own words

Invent a small town beside a lake. Write four sentences that explain one way to protect public health, one way water supports farming or electricity, one way water could weather rock, and one way the lake moderates local climate.

Water at Work

PART 1 · READ AND MARK

Underline each sentence that tells how a water property or phase change causes an effect. Circle the effect in the same sentence. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Why is water called the universal solvent, and what important limit does the passage give?	**Water can dissolve more kinds of substances than most liquids. It does not dissolve everything.**
2	Describe two ways water can help weather, or break down, rock at a stream bank.	**Water can dissolve and carry away minerals. Water can freeze in cracks and help break rock apart.**
3	What happens when water vapor loses thermal energy? How can a large body of water make nearby temperatures less extreme?	**Water vapor condenses into liquid droplets. A large body of water absorbs and releases much thermal energy, so it warms and cools slowly and reduces temperature extremes nearby.**
4	Name three ways water supports people in a community.	**Answers include supplying homes and schools, growing crops, generating electricity with turbines, and protecting public health through safe drinking water and sanitation.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Clear Lake town tests its drinking water because water can dissolve substances that could make people sick. Farmers use stored lake water to irrigate beans during dry weeks. Rainwater seeps into a cliff crack, freezes, and helps break the rock into pieces. The lake absorbs heat during warm days and releases heat later, so nearby temperatures are less extreme.

Accept equivalent wording that accurately connects a water property or phase change to its effect. For the open response, check for four sentences that address public health, a human use, weathering, and climate moderation.