

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Clipping Climate Change: Challenges for Clever 4th Graders

Young environmentalists analyze real-world scenarios to develop critical problem-solving skills for protecting our planet's future ecosystems.

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**1. A coastal city in Norway is seeing its winter sea ice disappear. Which analytical conclusion best explains why this is a 'feedback loop'?**

- A. Darker ocean water absorbs more sunlight than white ice, leading to even more warming.
- B. The salt in the ocean water makes the ice melt faster every year.
- C. Fish swimming in the water create friction that warms up the Arctic circle.
- D. Ice reflects sunlight into space, which makes the moon appear brighter at night.

**2. True or False: Using 'Urban Cooling' strategies, like painting city rooftops white to reflect sunlight, is an example of a mitigation strategy.**

- A. True
- B. False

**3. When a scientist observes that a specific mountain pika (a small mammal) is moving to higher, cooler altitudes every year to survive, they are documenting \_\_\_\_\_.**

- A. Deforestation
- B. Species Adaptation
- C. Carbon Sequestration
- D. The Greenhouse Effect

**4. Imagine you are an engineer. To protect a city from 'Sunny Day Flooding' caused by rising tides without building a wall, which solution shows the best evaluation of nature-based design?**

- A. Pumping all the seawater into large underground plastic tanks.
- B. Moving the entire city to the top of a nearby mountain range.
- C. Restoring coastal wetlands and mangroves to soak up excess water.
- D. Heating the water so it evaporates before it reaches the streets.

**5. True or False: The 'Greenhouse Effect' is a completely man-made phenomenon that did not exist before factories were built.**

- A. True
- B. False

**6. Instead of burning fossil fuels, a town chooses to use \_\_\_\_\_ energy, which comes from sources like the wind, sun, and moving water that never run out.**

- A. Finite
- B. Exhaustible
- C. Renewable

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D. Chemical

**7. Which of these scenarios represents a 'Hidden Cost' of climate change on human health in a hot desert region?**

- A. People buying more umbrellas for shade.
- B. An increase in respiratory issues due to more frequent dust storms.
- C. The sun appearing yellow instead of orange during the day.
- D. More people learning how to swim in backyard pools.

**8. True or False: Thawing permafrost in the Arctic is dangerous because it releases trapped gases like methane, which is even more potent than carbon dioxide.**

- A. True
- B. False

**9. Scientists use \_\_\_\_\_ to study air bubbles trapped in ancient glacier ice to see what the atmosphere was like thousands of years ago.**

- A. Ice cores
- B. Telescopes
- C. Submarines
- D. Seismographs

**10. If you are analyzing a graph that shows global temperatures and CO2 levels over 100 years, what relationship would you expect to see?**

- A. As CO2 levels go down, temperatures go up.
- B. There is no connection between the two sets of data.
- C. As CO2 levels go up, global temperatures also tend to rise.
- D. The temperature stays the same regardless of carbon levels.