Climate Challenge

Name _____

Section 1: Changes in Climate

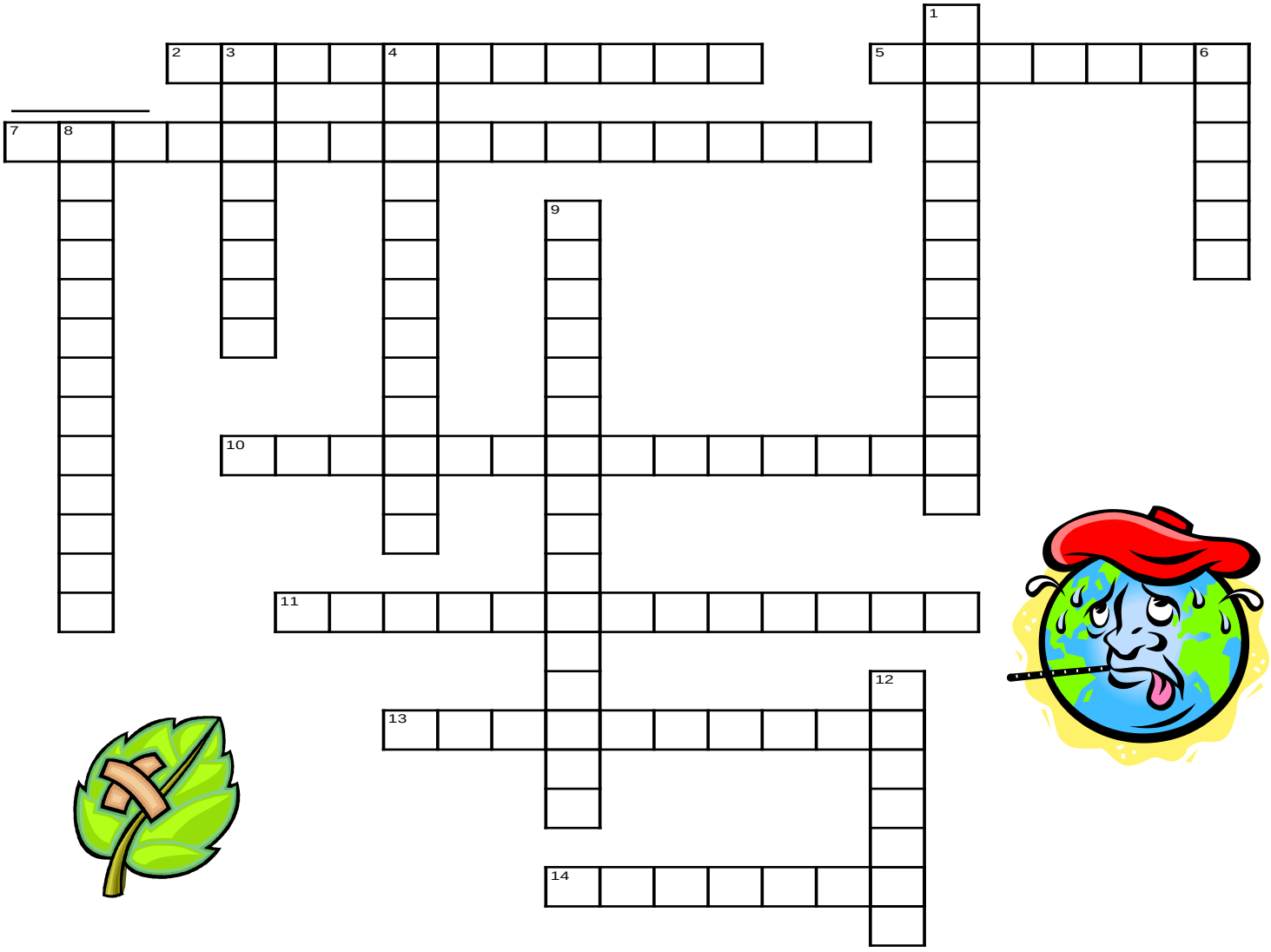
1. Explore the first two sections - What is climate? & What are the causes?- to help you find the terms needed to complete this puzzle.

Down

1. An increase in the average temperature of earth's near-surface air and oceans
3. Temperature record of earth's temperatures as determined by geologic evidence
4. Any change in the Earth's climate systems over long periods of time
6. Carbon dioxide is generated by burning fossil fuels (coal, oil) for this
8. Describes effects, processes, or materials that are a result of human activities
9. Describes how energy from the sun becomes trapped in the Earth's atmosphere
12. The state of the atmosphere as measured over a short period of time

Across

2. This industry contributes greenhouse gases to the atmosphere through the energy used to produce, harvest, and deliver crops around the world
5. Includes the temperature, humidity, air pressure, and other elements over a long period of time
7. Study of past climates for the entire history of the Earth
10. Vehicles used for this contribute a large amount of carbon dioxide to the atmosphere
11. This results in a loss of trees and other plants, which affects carbon dioxide levels in the atmosphere
13. Gases that includes CO_2, CH_4, N_2O, and O_3
14. Temperature measurements taken land and sea at locations near the Earth's surface



2. Review the evidence in the "How do we know?" section to answer these questions.

- How has the earth's temperature changed from 1918 to today? _____
- What percentage of each of these glaciers has been lost over the past several decades? Give an estimate based on the before/after pictures provided.

Buckner Glacier - _____ South Cascade Glacier - _____ Forbidden Glacier - _____

3. Review the information in the "What are the impacts? section and list the potential impacts for each of these areas.

- Sea Levels - _____
- Weather Events - _____
- Seasons - _____
- Species Distribution - _____

Section 2: Glaciers

1. Complete: When more snow melts during the summer than accumulates during the winter glaciers _____ in size.

2. Play the game and then explain what happens during the game as the years pass. Why? _____

_____

Section 3: Shifting Habitats

1. Why would plants and animals have trouble surviving as climate change develops? _____

_____

2. Try the game and then explain what happens from 2010 to 2210. You will need to place as many animals as possible before clicking the "Check my work" button. Some areas can have two animals.

_____

_____

Section 4: Sources of Energy

1. Identify each as renewable (R) or non-renewable (N).

Wind _____ Oil _____ Coal _____ Water _____ Solar Energy _____

2. Try the game. You will need to play the game until you are able to use all four "clean" energy sources to create the amount of energy needed. How many times did you have to play the game before you completed it successfully?

Choose one: ☐ Less than 3 ☐ Between 4 and 6 times ☐ More than 7 times

Section 5: What We Can Do

Find the things people can do to help reduce our carbon footprint in each situation. List at least 3 things you can do.

_____

_____

Done? Visit the sites listed on the Ecology & Environment page of the Science Spot's Kid Zone