

Overview:

Students locate and color the oceans of the world and color the areas prone to tsunamis.

Targeted Alaska Grade Level Expectations:

Science

- [3] SD 2.1 The student demonstrates an understanding of the forces that shape Earth by identifying and comparing Earth's land features (i.e., rivers, deltas, lakes, glaciers, mountains, valleys, and islands).
- [4] SD 2.2 The student demonstrates an understanding of the forces that shape Earth by identifying causes (i.e., earthquakes, tsunamis, volcanoes, floods, landslides, and avalanches) of rapid changes on the surface.

Objectives:

The student will:

- compare labeled and unlabeled maps of the world;
- locate the oceans of the world and color them (grades K-1);
- locate, color, and label the oceans of the world (grades 2-4);
- analyze where tsunamis might occur; and
- generalize by coloring these areas red.

Materials:

- Crayons, colored pencils, or markers
- STUDENT INFORMATION SHEET: "World Map with Oceans"
- STUDENT WORKSHEET: "World Map"
- STUDENT WORKSHEET: "Can a Tsunami Happen Here?" (grades 2-4)

Science Basics:

A tsunami is a series of huge waves that happen after an undersea disturbance, such as an earthquake or volcanic eruption. *Tsunami* comes from the Japanese words for harbor and wave. The waves often travel in all directions from the area of disturbance, much like the ripples that occur after throwing a rock into a pool. The waves may travel as fast as 450 miles per hour. As the waves approach shallow waters along the coast they can grow to a great height and crash into the shore. They can be as high as 100 feet, and can cause a lot of destruction on the shore. Tsunamis are sometimes mistakenly called "tidal waves," but they have nothing to do with the tides. Students can browse the "FEMA for Kids" website (<http://www.fema.gov/kids/tsunami.htm>) for further information about tsunamis.

Activity Procedure:

1. Explain tsunamis are large waves that can damage or destroy communities located on or near, oceans, bays, or the mouths of rivers. Also explain a tsunami may appear as a high wave but more often is similar to an extremely fast high tide. The first tsunami wave is often preceded by rapidly receding water.
2. Distribute the STUDENT INFORMATION SHEET: "World Map with Oceans" and point out the Pacific Ring of Fire and other tsunami prone areas of the world. Explain most tsunamis occur in the Pacific Ring of Fire because it is the most geologically active (volcanoes and earthquakes) area of Earth.

3. Distribute the STUDENT WORKSHEET: "World Map" and crayons, colored pencils, or markers.
4. Identify and discuss land masses, then ask students (K-1) to color the ocean areas blue. Ask students (grades 2-4) to locate, color, and label the oceans of the world.
5. Instruct students (grades 2-4) to identify the Pacific Ring of Fire and other tsunami prone areas of the world by outlining the coastlines in red.
6. Distribute the STUDENT WORKSHEET: "Can a Tsunami Happen Here?" (grades 2-4), and ask students to complete it independently.

Answers:

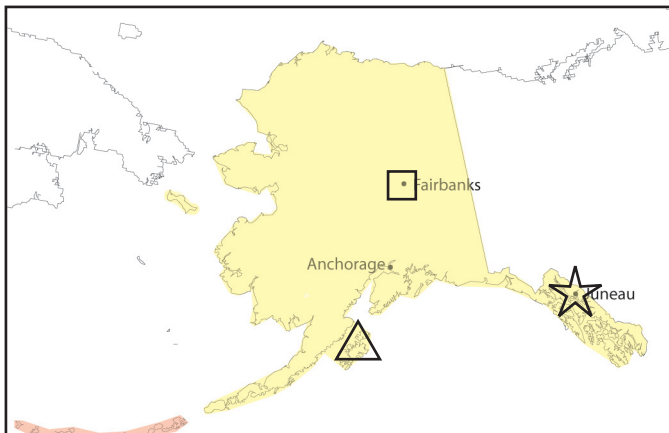
STUDENT WORKSHEET: World Map

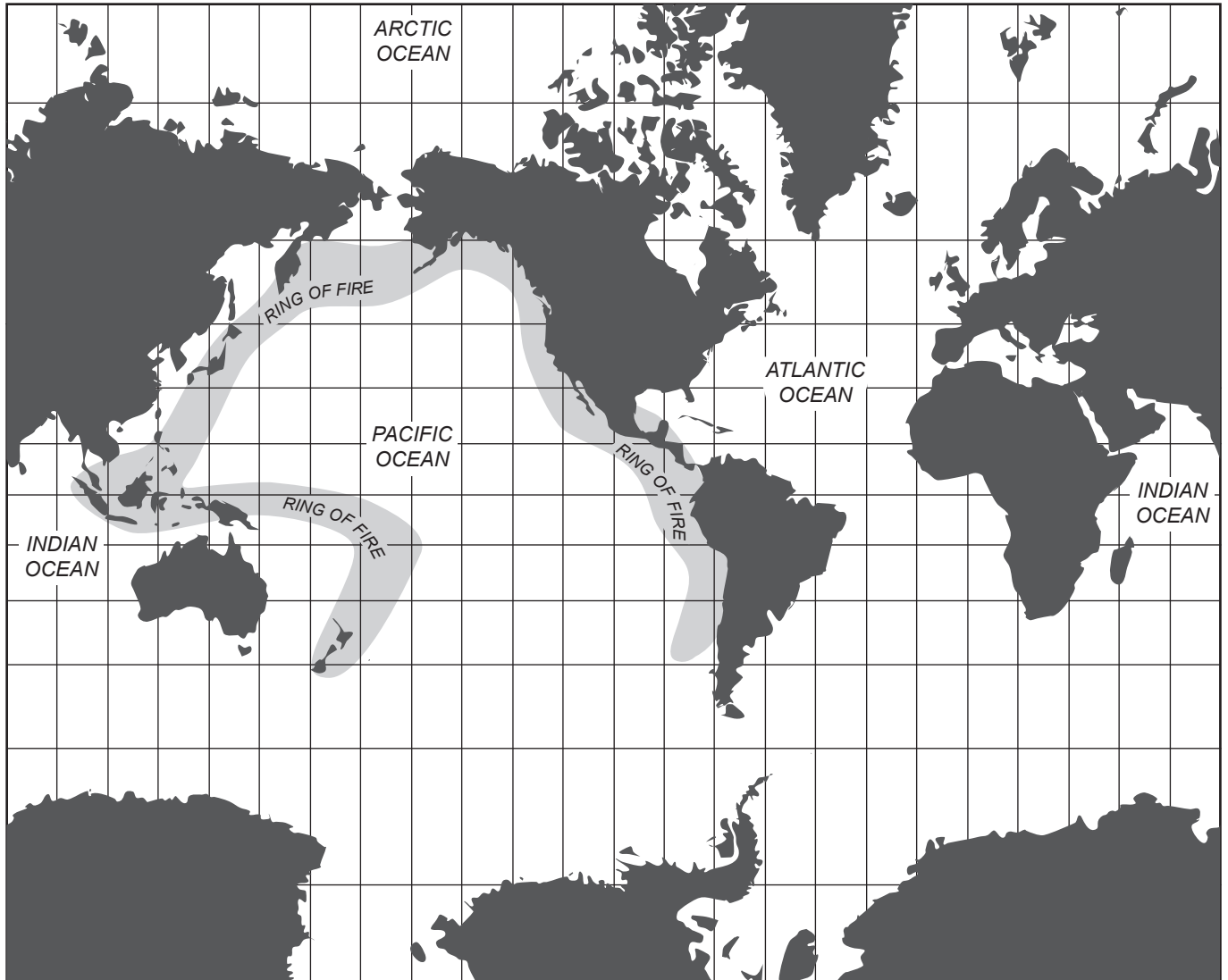
K-1: Oceans should be colored blue.

2-4: Oceans should be colored blue and labeled. The Pacific Ring of Fire should be outlined in red.

STUDENT WORKSHEET: Can a Tsunami Happen Here?

1. Alaska should be colored yellow.
2. Aleutians should be orange.
3. Yes, answer should indicate the student understands that proximity to water is the key.
4. Fairbanks should be marked with a square.
5. No, student should understand that Fairbanks is too far inland to be endangered by a tsunami.
6. Juneau should be marked with a star.
7. Yes, answer should indicate the student understands that proximity to water is the key.
8. Kodiak should be marked with a triangle.
9. Yes, answer should indicate the student understands that proximity to water is the key.





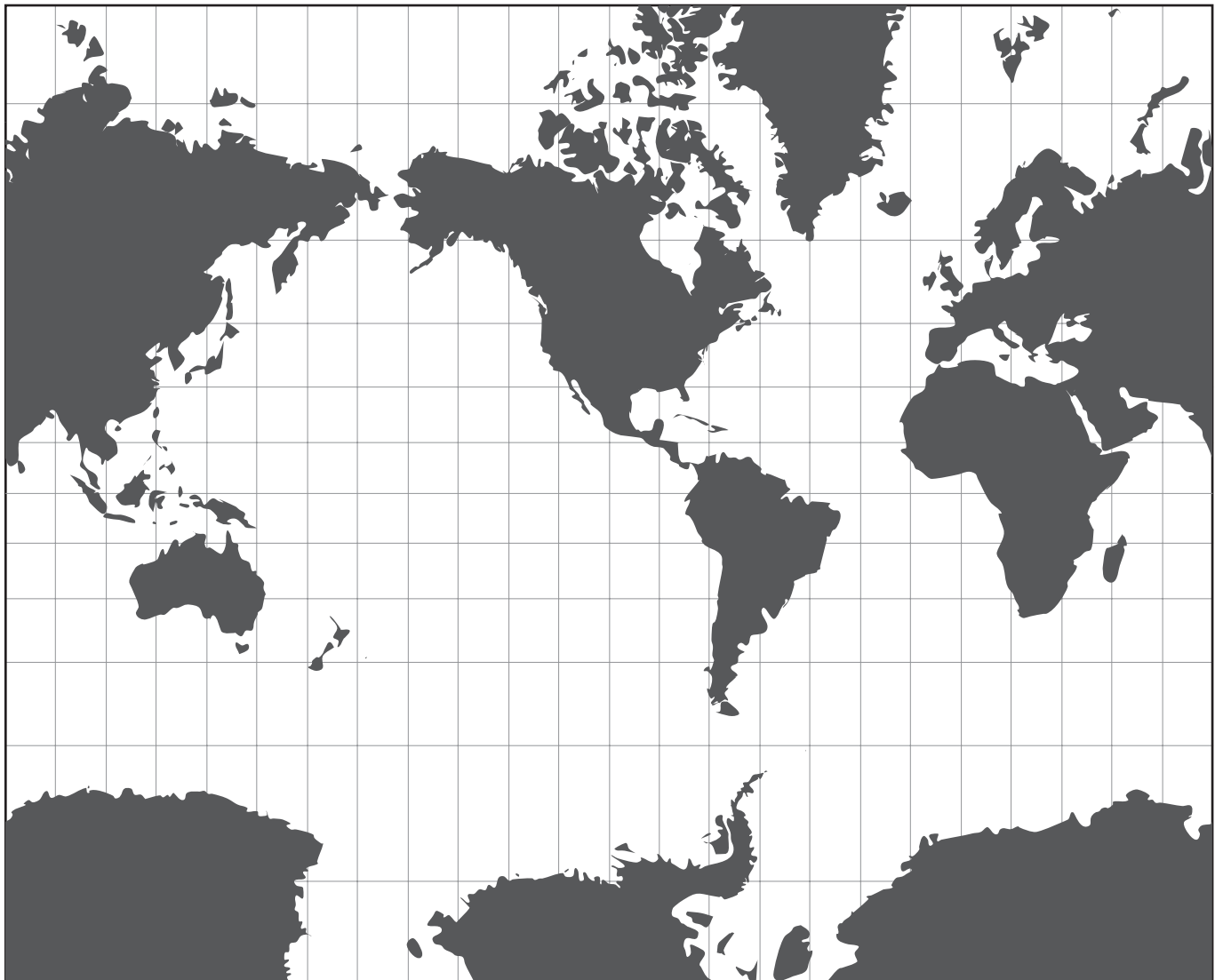
Name: _____



World Map

Student Worksheet

Directions: Label the map below with the Atlantic Ocean, Pacific Ocean, Indian Ocean, Arctic Ocean, and the Pacific Ring of Fire.



Name: _____





Can a Tsunami Happen Here?

Student Worksheet (page 1 of 2)



Using the map of Alaska, above:


1. Locate Alaska and color it **yellow**. 
2. Find the Aleutian Islands and color them **orange**. 
3. Could there be a tsunami on the Aleutian Islands? _____
Why, or why not?

Name: _____



Can a Tsunami Happen Here?

Student Worksheet (page 2 of 2)

4. Find Fairbanks on the map and put a square  there.

5. Is Fairbanks in danger of having a tsunami? _____
Why, or why not?

6. Put a star  on the map at Juneau.

7. Is Juneau in danger of having a tsunami? _____
Why, or why not?

8. Make a triangle  on the map at Kodiak.

9. Is Kodiak in danger of having a tsunami? _____
Why, or why not?
