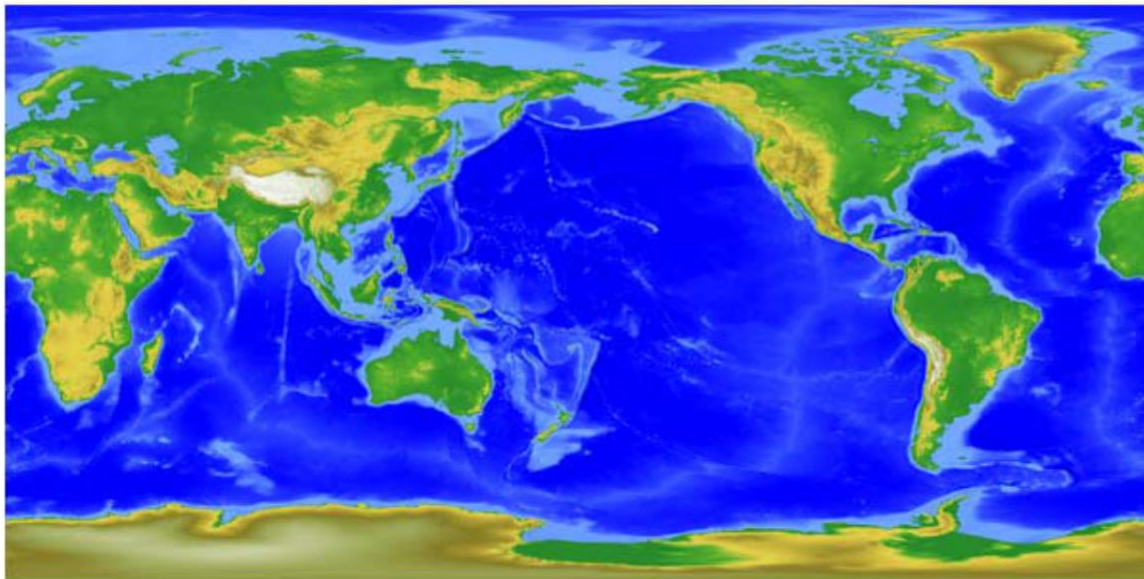


Worksheet 1: Student Version for Lessons:

- Where Do Tsunamis Occur?
- Sources of Tsunamis
- Seismic Detection
- Tsunami Alerts

1. Earth's surface is broken into large, slowly moving pieces called _____.
2. On this map, circle at least three different locations that have historically experienced large earthquakes, volcanoes, AND tsunamis.



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3. How do the locations of plate boundaries relate to the locations of earthquakes, volcanoes, and tsunamis?

4. Why are subduction zones important? _____

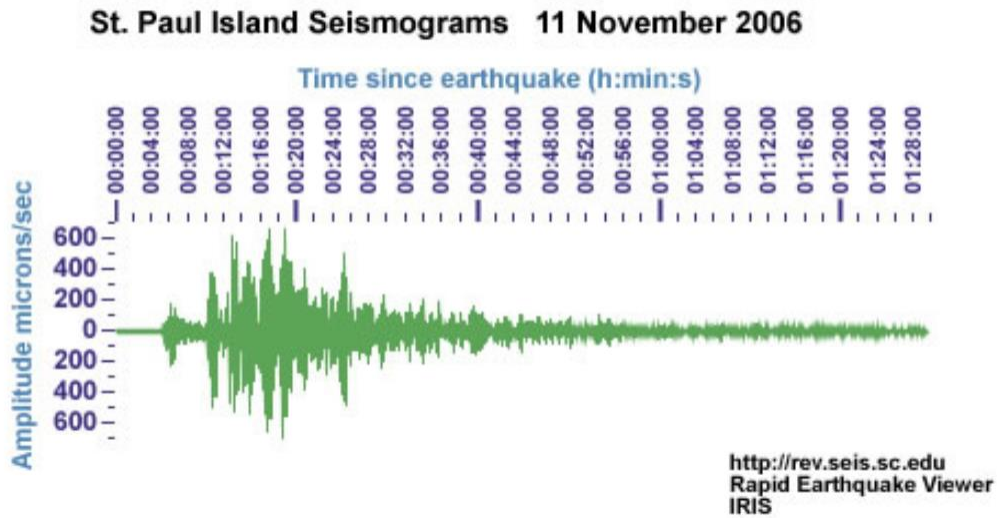
5. Can tsunamis occur in areas that don't experience earthquakes? Why or why not?

6. What type of data help scientists first know about the possibility of a tsunami?

7. At a minimum, how many stations need to report seismic wave arrival times for scientists to locate the earthquake? _____

8. The size of an earthquake is one factor in determining whether an earthquake causes a tsunami. What term do scientists use to measure earthquake size?

9. In this seismogram, when does the first Primary (P) wave arrive at the station? When does the S-wave arrive? P-wave: _____ minutes S-wave: _____ minutes



10. Which of the following factors can determine whether an earthquake can cause a tsunami?(Choose all that apply)

- ☐ a. Earthquake size/magnitude
- ☐ b. The time it takes waves to reach the coast
- ☐ c. The size of the rupture area
- ☐ d. Whether the rupture was under water
- ☐ e. How much land was lifted
- ☐ f. How the ocean responded
- ☐ g. The type of plate boundary or fault
- ☐ h. Whether the rupture releases hot magma

11. List four events that can cause a tsunami.

12. True or False: Volcanoes are the most common source of large tsunamis. (Circle the correct answer.)

13. Name three ways that an earthquake can displace an amount of water large enough to make tsunamis.

14. The two highest levels of alert issued by a Tsunami Warning Center for an impending tsunami are:

15. What is the difference between a Tsunami Warning and a Tsunami Watch?
