

Worksheet 4: Student Version for Lessons:

*-Force of a Tsunami -Wave Propagation—Traveling Tsunami Style -A
Tsunami's Reach*

1. Hydrostatic force and buoyancy force are both forces that are associated with _____.
2. The power of a moving object as determined by its mass times its velocity is called _____.
3. If a bicycle and a delivery truck are traveling down the street at the same speed, which will have the larger momentum? Why? _____
4. Which has a higher density, water or air? _____
5. Based on what you have learned about momentum, do you think a tsunami wave 0.5-meters high would be able to knock you off your feet? Why or why not?

6. When water bounces off an obstacle, the process is referred to as _____.
7. When part of a wave passes into shallow water, what happens to that wave? (Select the best answer.)
____ a. Nothing
____ b. It bounces off or reflects
____ c. It bends or refracts toward the shallower water
____ d. It breaks and curls, forming surf
____ e. It bends or refracts toward the deeper water

8. What accounts for the “funneling” of waves along mid-ocean ridges? (Select the best answer.)

- ☐ a. Reflection
- ☐ b. Refraction
- ☐ c. Buoyancy
- ☐ d. Hydrostatic force

9. Which wave will experience an increase in speed? (Select the best answer.)

- ☐ a. A shallow water wave encountering an ocean ridge
- ☐ b. A shallow water wave traveling from an area near the coast into deeper water
- ☐ c. Neither of these waves will experience changes in their speeds

10. What are tsunamis called when they travel to coasts more than 1000 kilometers from their earthquake source? _____

11. Which properties of a tsunami are scientists able to model with computer simulations? (Choose all that apply)

- ☐ a. wave heights
- ☐ b. earthquake magnitude
- ☐ c. arrival locations
- ☐ d. wave reflection and refraction
- ☐ e. wave travel time

12. What three kinds of information does a wave model need before scientists can use it to predict how a tsunami travels?
