

Science 8
Unit 1: Water Systems
Worksheet 8: Waves



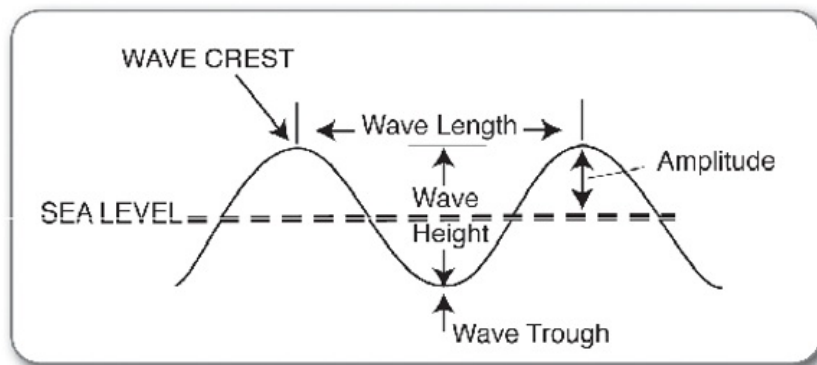
Ocean waves : are just large ripples, set in motion by steady winds. Waves move energy towards the shore.

Waves begin on the open sea. Their height depends on:

- on how fast
- how long,
- how far the wind blows over the water

An increase in any one of these variables can cause an increase in wave height

Common wave features:



Crest refers to the high point of the wave

Trough refers to the low point of the wave

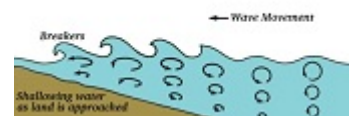
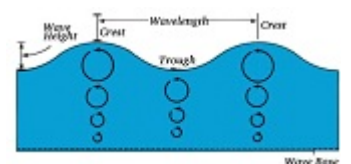
Wavelength is the distance from crest to crest

Wave height- is a measured from its crest (highest point) to its trough (lowest point)

Note: As a wave approaches a shoreline, the wavelength decreases and the wave height increases

Wave speed: time required for one wave to pass a given point.

Individual particles move in circles as a wave passes through the water



3 Types of Waves:

1. Swells Large, rolling waves that form out in the open ocean. Swells are caused mainly by winds.
2. Tsunami: from the Japanese term meaning “harbor wave”. Giant waves that can be sent in motion by earthquakes on the ocean floor, landslides or volcanic eruptions near the shoreline
2. Breakers The tumble of water when a wave collapses onshore.

PART A: MULTIPLE CHOICE

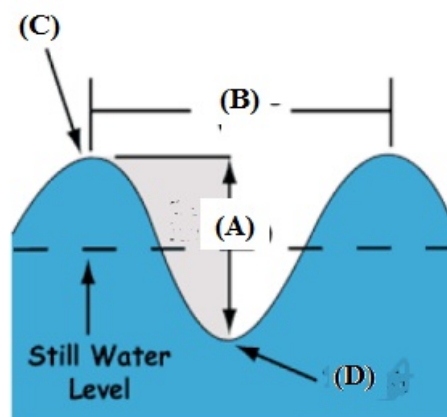
1. Which of the following affects ocean waves
 - (A) On how fast the wind
 - (B) how long the wind blow
 - (C) how far the wind blows over the water
 - (D) All of the above are correct

2. Swells are caused mainly by
 - (A) Tsunamis
 - (B) Deep ocean currents
 - (C) Surface currents
 - (D) Wind

3. Waves move across the surface of the ocean and eventually hit the shore. When the crest eventually outruns the trough, it topples forward onto the shore and is called a ...
 - (A) Swell
 - (B) Breaker
 - (C) Tsunami
 - (D) Longshore current

4. The biggest and strongest waves are made by
 - (A) Wind
 - (B) Gravity
 - (C) Tectonic forces
 - (D) Earth's spin

Use the diagram below to answer questions 5 to 8



5. What does **A** represent in the above diagram?
 - (A) Crest
 - (B) Trough
 - (C) Wavelength
 - (D) Wave height

6. What does **B** represent in the above diagram?
 - (A) Crest
 - (B) Trough
 - (C) Wavelength
 - (D) Wave height

7. What does **C** represent in the above diagram?

- (A) Crest
- (B) Trough
- (C) Wavelength
- (D) Wave height

8. What does **D** represent in the above diagram?

- (A) Crest
- (B) Trough
- (C) Wavelength
- (D) Wave height

PART B: FILL IN THE BLANK

Use the words below to fill in the blank

- swells tectonic forces tsunami breakers
- crest trough wave speed

1. Large, rolling waves that form out in the open ocean are called _____.
2. The biggest and strongest waves are made by _____.
A huge, powerful wave that results from an underwater earthquake is called a(n) _____.
3. _____ are formed as the wave reaches shore and the height of the wave surpasses the depth of the water; the wave just topples over as it becomes top heavy
4. _____ refers to the high point of a wave.
5. _____ refers to the low point of a wave.
6. _____ refers to the time required for one wave to pass a given point.

PART C: WRITTEN RESPONSE

1. What is a swell?

2. How is a breaker formed?

3. What causes a tsunami?

