



Oceanography

Merit Badge Workbook



This workbook can help you but you still need to read the merit badge pamphlet.

This Workbook can help you organize your thoughts as you prepare to meet with your merit badge counselor.

You still must satisfy your counselor that you can demonstrate each skill and have learned the information. You should use the work space provided for each requirement to keep track of which requirements have been completed, and to make notes for discussing the item with your counselor, not for providing full and complete answers.

If a requirement says that you must take an action using words such as "discuss", "show", "tell", "explain", "demonstrate", "identify", etc, that is what you must do.

Merit Badge Counselors may not require the use of this or any similar workbooks.

No one may add or subtract from the official requirements found in Boy Scout Requirements (Pub. 33216 – SKU 637685).

The requirements were last issued or revised in 2013 • This workbook was updated in June 2017.

Scout's Name: _____ Unit: _____

Counselor's Name: _____ Counselor's Phone No.: _____

<http://www.USScouts.Org> • <http://www.MeritBadge.Org>

Please submit errors, omissions, comments or suggestions about this **workbook** to: Workbooks@USScouts.Org
Comments or suggestions for changes to the **requirements** for the **merit badge** should be sent to: Merit.Badge@Scouting.Org

1. Name four branches of oceanography.

1.	
2.	
3.	
4.	

Describe at least five reasons why it is important for people to learn about the oceans.

1.	
2.	
3.	
4.	

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5.

2. Define salinity, temperature, and density, and describe how these important properties of seawater are measured by the physical oceanographer.

Salinity

Temperature

Density

Describe how these important properties of seawater are measured by the physical oceanographer.

Discuss the circulation and currents of the ocean.

Describe the effects of the oceans on weather and climate.

3. Describe the characteristics of ocean waves.

Point out the differences among the storm surge, tsunami, tidal wave, and tidal bore.

Storm surge	

Tsunami

Tidal wave

Tidal bore

Explain the difference between sea, swell, and surf.

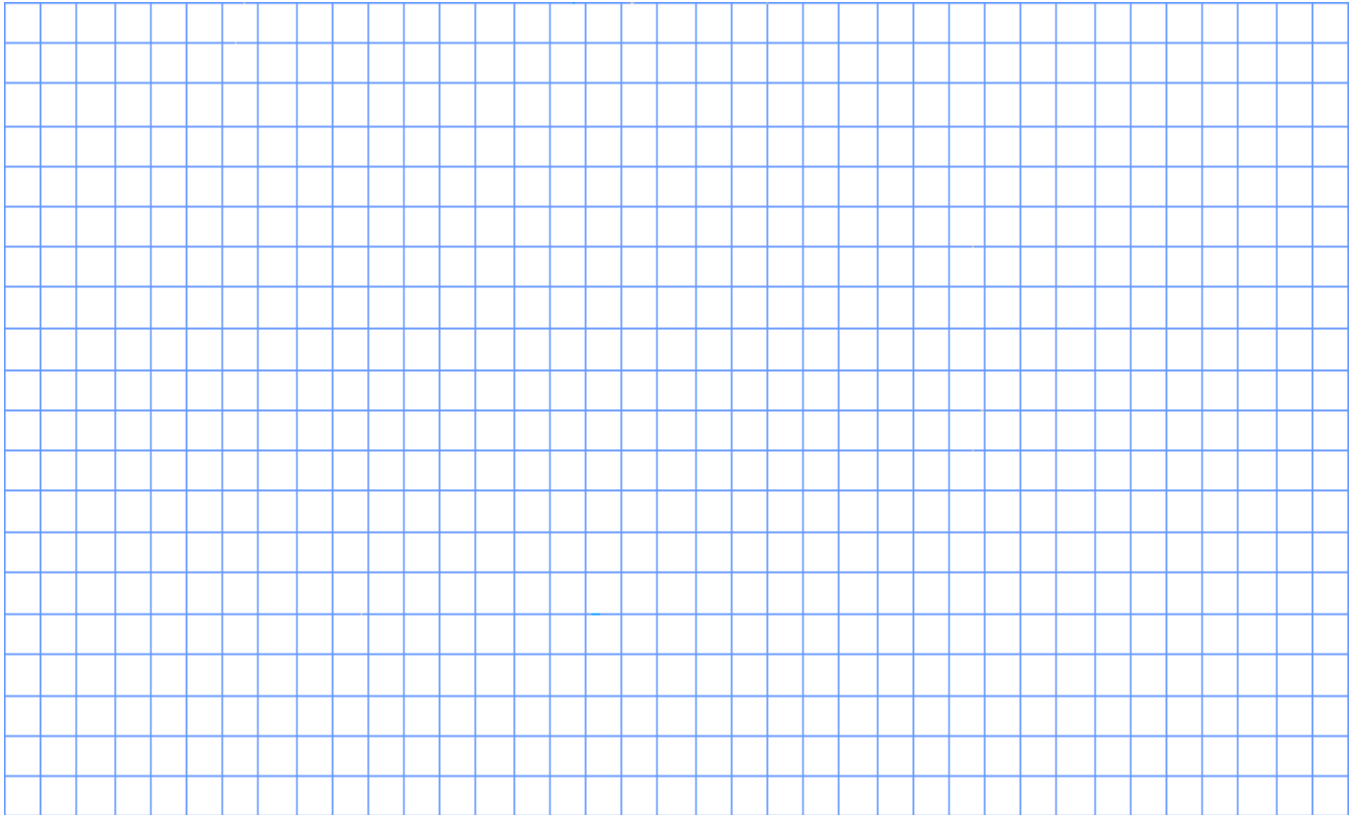
Sea

Swell

Surf

Explain how breakers are formed.

4. Draw a cross-section of underwater topography. Name and put on your drawing the following: seamount, guyot, rift valley, canyon, trench, and oceanic ridge. Compare the depths in the oceans with the heights of mountains on land.



Show what is meant by:

- a. Continental shelf;

- b. Continental slope;

- c. Abyssal plain

5. List the main salts, gases, and nutrients in sea water.

Salts

Gases

Nutrients

Describe some important properties of water.

Tell how the animals and plants of the ocean affect the chemical composition of seawater.

Explain how differences in evaporation and precipitation affect the salt content of the oceans.

6. Describe some of the biologically important properties of seawater.

Define benthos, nekton, and plankton.

Benthos,

Nekton,

Plankton.

Name some of the plants and animals that make up each of these groups.

Benthos

Nekton

Plankton

Describe the place and importance of phytoplankton in the oceanic food chain.

9. Describe four methods that marine scientists use to investigate the ocean, underlying geology, and organisms living in the water.

1.

2.

3.

4.

When working on merit badges, Scouts and Scouters should be aware of some vital information in the current edition of the *Guide to Advancement* (BSA publication 33088). Important excerpts from that publication can be downloaded from <http://usscouts.org/advance/docs/GTA-Excerpts-meritbadges.pdf>. You can download a complete copy of the *Guide to Advancement* from <http://www.scouting.org/filestore/pdf/33088.pdf>.

Table of temperature readings for item 7c.

	Day 1	Day 2	Day 3	Day 4	Day 5
1	Time				
	Air(°F)				
	S(°F)				
	M(°F)				
	B(°F)				
	Notes:				
2	Time				
	Air(°F)				
	S(°F)				
	M(°F)				
	B(°F)				
	Notes:				
3	Time				
	Air(°F)				
	S(°F)				
	M(°F)				
	B(°F)				
	Notes:				
4	Time				
	Air(°F)				
	S(°F)				
	M(°F)				
	B(°F)				
	Notes:				

S=Surface water M=Mid-water B=Bottom