

# CONTINENTAL SHELF & FISH

## Essential Questions -

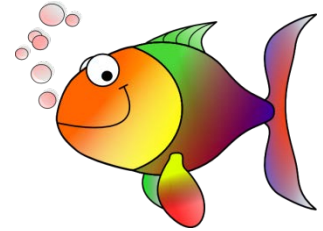
Why is the continental shelf advantageous to humans?

## Focus Questions

What characteristics promote life on the continental shelf?

How are marine organisms adapted to life on the continental shelf?

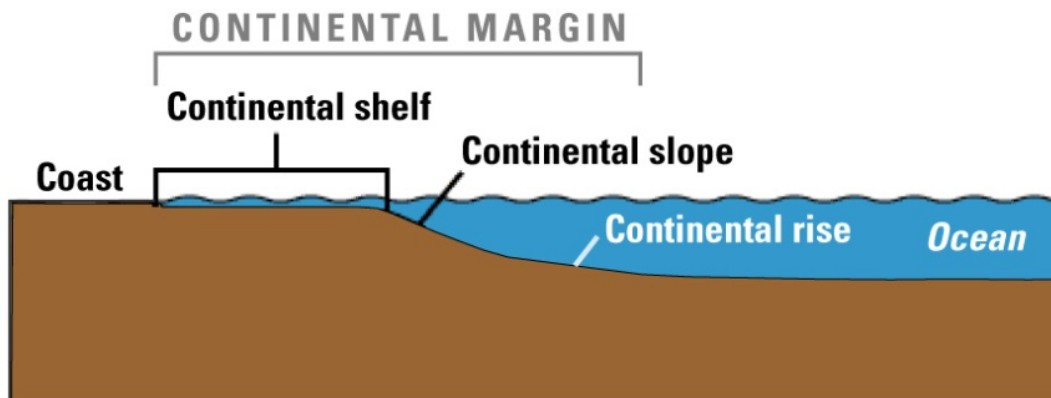
Why is the continental shelf of high economic value to humans?



Please use the following numbered scale to indicate your confidence in your knowledge of topics on **FISH AND THE CONTINENTAL SHELF**

4	I understand the material so well I can teach it to others
3	I feel confident I fully understand the material
2	I get the idea, but I feel there is more to learn
1	This is a totally new concept for me

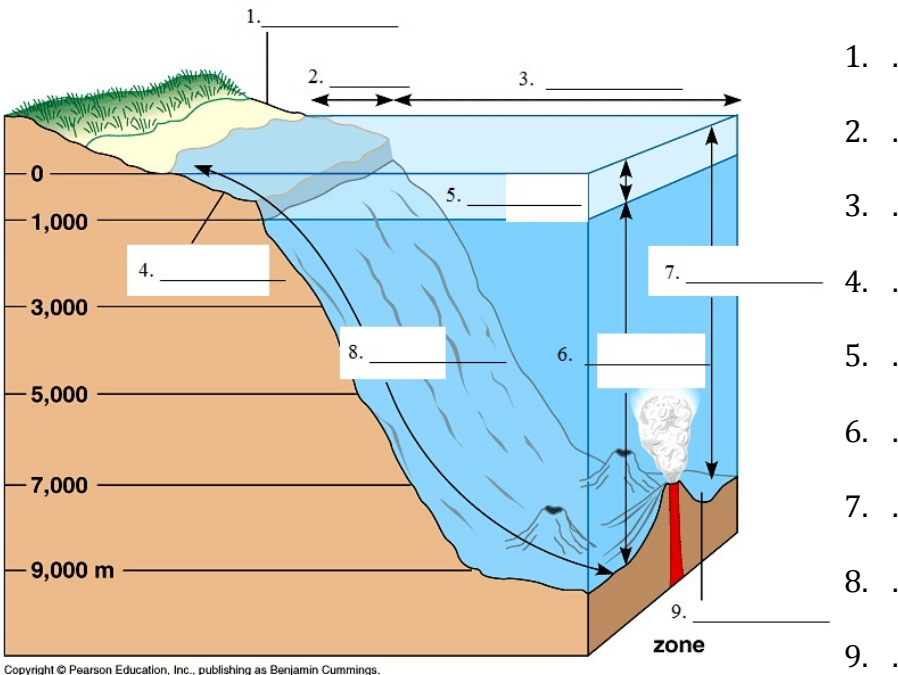
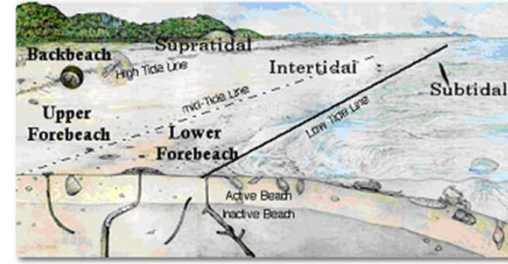
		PRE DATE:	POST DATE:
1	Students will be able to Analyze the adaptations of marine organisms living in an estuary/ocean. (Osmoconformers, osmoregulators, Anadromous, catadromous)		
2	Students will be able to Identify inhabitants of the continental shelf: Phytoplankton, zooplankton, jellyfish, lobster, codfish, sharks, marine mammals		
3	Students will be able to Analyze the characteristics of the continental shelf that promote diversity: Photic zone, Food web, Microbial loop, Upwelling and down-welling		
4	Students will be able to Evaluate adaptations of marine organisms for survival in the continental shelf.		
5	Students will be able to Compare, identify and state the functions of the external parts of cartilaginous and bony fish		
6	Students will be able to Explain how different body structures relate to feeding, swimming and reproductive ability of fish.		
7	Students will be able to Discuss the resources of the continental shelf and the human impacts on the continental shelf. (Biodiversity, Recreation, Fisheries)		



1. What is the difference between intertidal and subtidal zones?

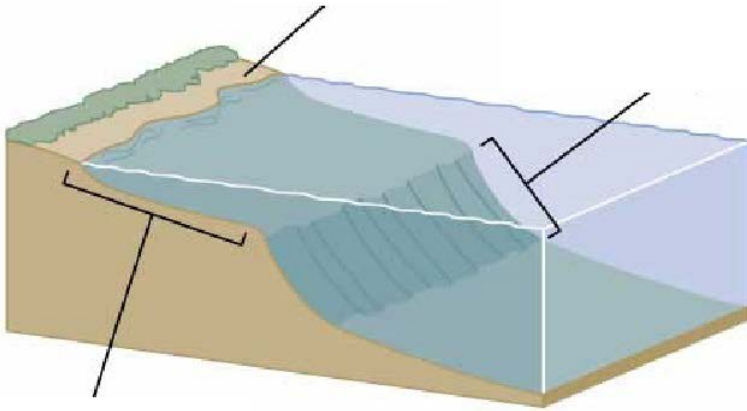
2. Label the zones of the ocean and describe the main characteristics of each. Use these terms:

Open ocean, intertidal, subtidal/neritic, benthic, continental shelf, photic, aphotic, pelagic, abyssal.



- 1. .
- 2. .
- 3. .
- 4. .
- 5. .
- 6. .
- 7. .
- 8. .
- 9. .

3. Describe the continental shelf and what makes it so unique .

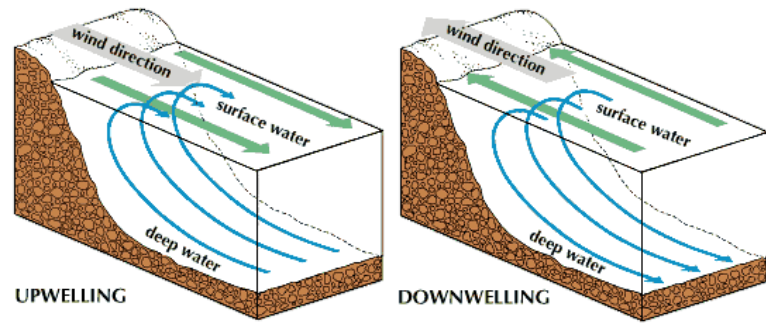


4. Compare and contrast the continental shelf to an estuary.

5. Identify some organisms that live in the continental shelf and why they live there.

6. What is a convection current?

7. What is upwelling? Down-welling?



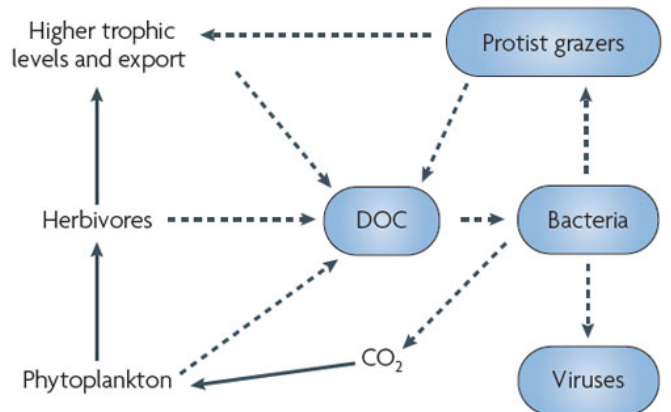
8. How do the following factor into the continental shelf?

a. Photic zone

Photosynthesis	Respiration

b. Food web

c. Microbial loop



9. What are the two main classes of fish? How are they different?



10. Label the main body parts of a fish.  
snout, dorsal fins(collapsing vs. fixed), pectoral fins, pelvic fins, anal fin, caudal fin, teeth, eye, operculum, lateral line, and nostrils (nares)

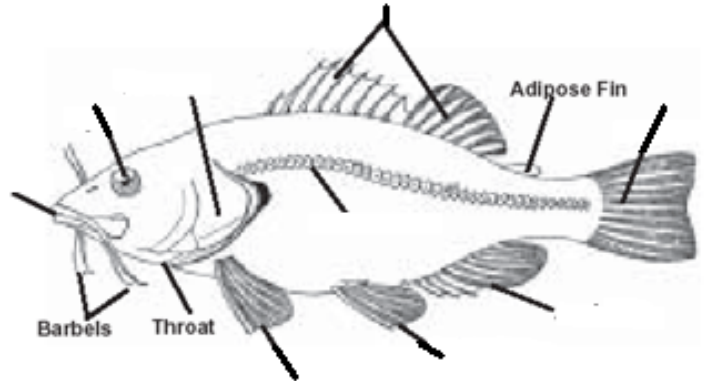
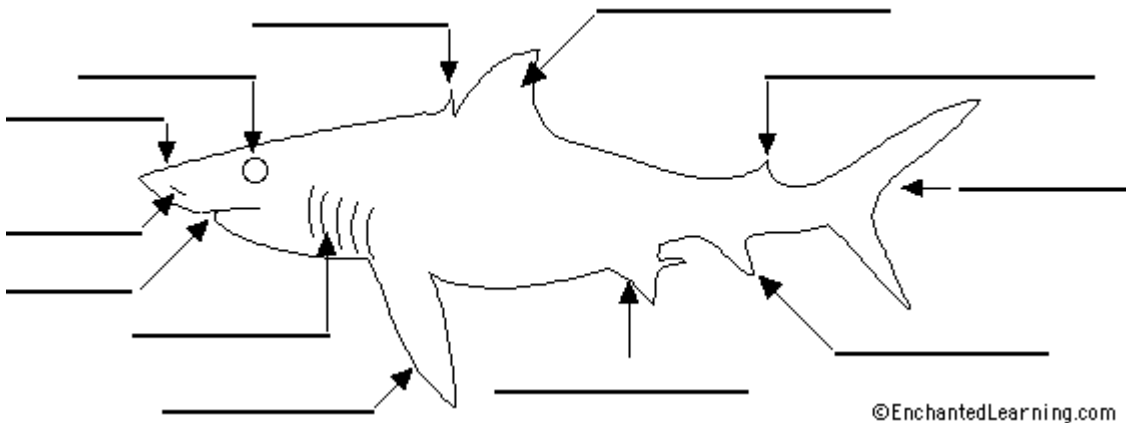


Figure 1. External features of a Composite fish

11. Label the main body parts of a shark.  
snout, dorsal fins(collapsing vs. fixed), pectoral fins, pelvic fins, anal fin, caudal fin, claspers, teeth, eye, gill slits, lateral line, spiracle, and nostrils (nares)

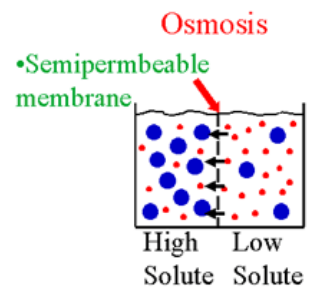


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12. What is osmosis?

13. Where do some fish like salmon go to reproduce?

14. Where do eels go to reproduce?



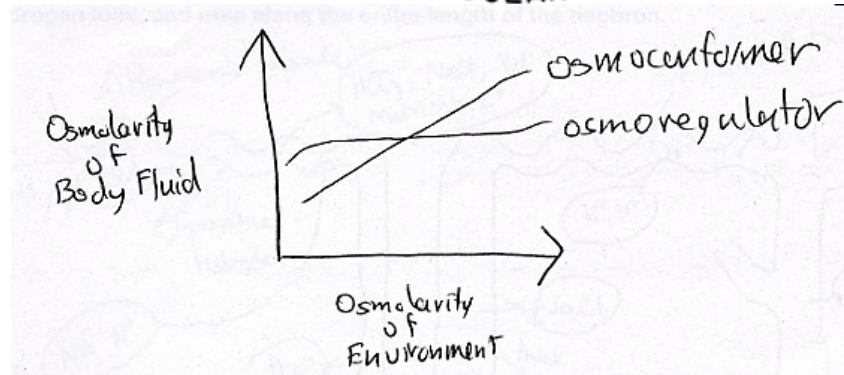
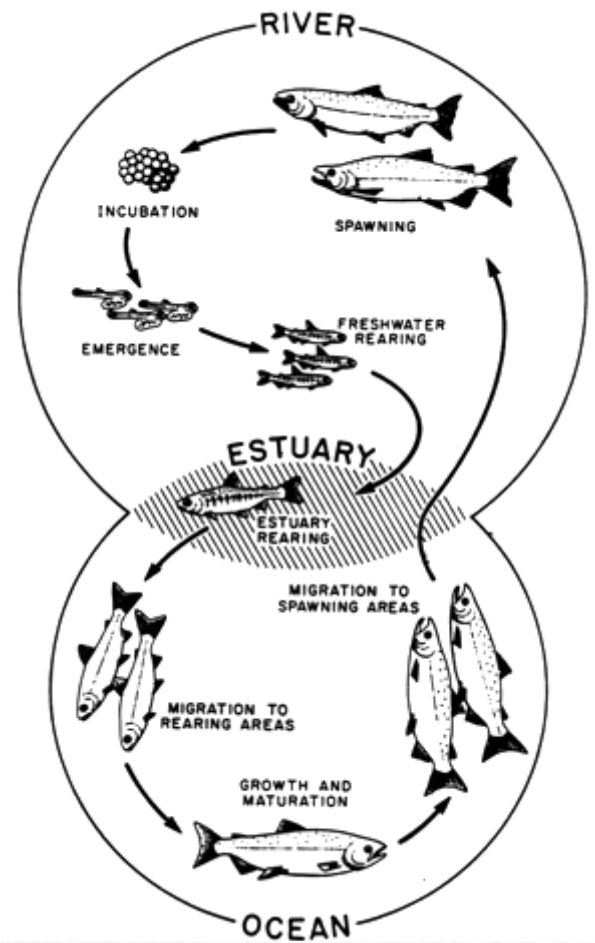
15. What does it mean to be anadromous?

16. What does it mean to be catadromous?

17. What are the challenges that salmon and eels have to deal with due to their habits when they reproduce?

18. What does an osmoconformer do?

19. What does an osmoregulator do?

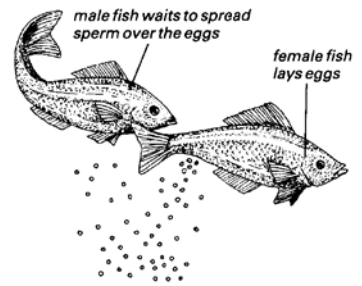


20. Complete the table based on osmo- regulators and conformers.

	OSMOREGULATION	OSMOCONFORMER
WATER CHANGE/REMAIN		
MIGRATION?		
SALT LEVELS		
WATER LEVELS		

21. What is the difference between asexual and sexual reproduction?

22. What is fertilization? How is internal and external fertilization different?  
Give an example of an organism that does each one.

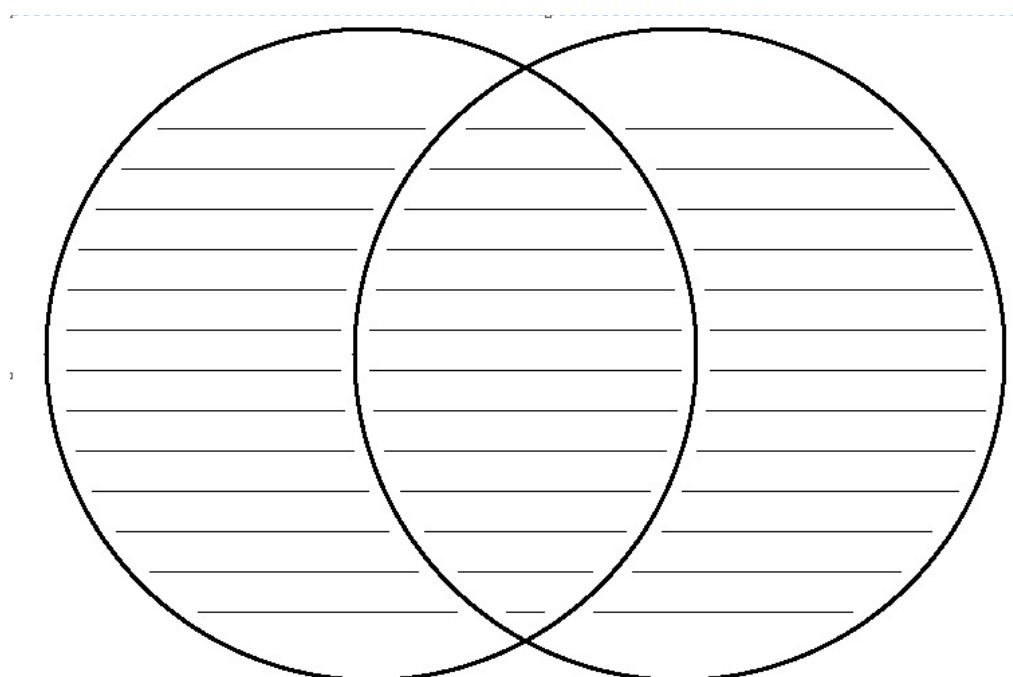
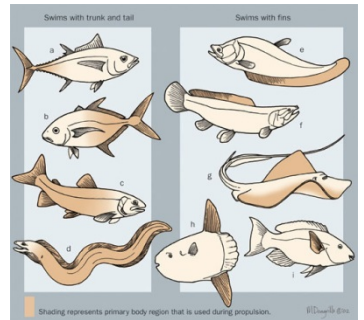


23. Describe the advantages and disadvantages of internal and external fertilization in fish.

24. Do most fish do internal or external development? What are the advantages to both and how are the disadvantages compensated for?

25. How do each of the following allow the fish/shark to better equipped to survive and reproduce?

- a. body shape
- b. position of mouth
- c. type of mouth
- d. fin shape



26. Compare and contrast the body structure and reproductive habits of sharks and bony fish.

27. What is the benefit of the following adaptations

	Description	How it benefits	Example
Buoyancy			
Sensory Organs			
Camouflage			
Counter shading			
Bioluminescence			
bright coloration			
Spines			
Schooling			
Armor			
disruptive contrast			

28. What sensory organ is not very well developed in a shark? Describe how a shark finds it prey.

29. What do humans use the continental shelf for?

30. Describe some ways it has been exploited.