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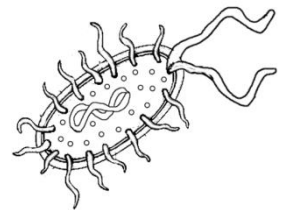
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### Test Review: Unicellular Organisms, Marine Photosynthesis & Ocean Acidification

#### Unicellular Organisms –

1. What is the difference between prokaryotic and eukaryotic organisms?
2. What **kingdoms** contain prokaryotic **organisms**? What are they? (*hint: there are 2*)
3. Which **kingdoms** contain eukaryotic **organisms**? What are they? (*hint: there are 4*)

4. What are the 3 common shapes of bacteria?



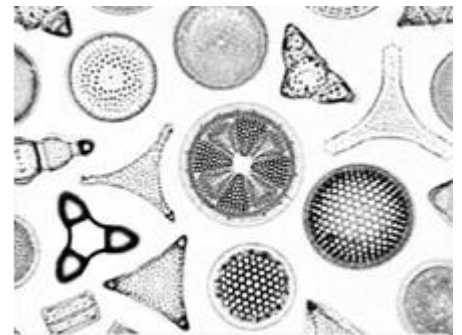
5. How do bacteria obtain food/energy? Name and describe all 3 ways.

6. Which bacteria are able to perform photosynthesis? How is it able to do this?

7. What is chemosynthesis? What chemical is broken down? Which type of bacteria performs this?

8. What does it mean to be planktonic?

9. Which kingdom do diatoms and dinoflagellates belong to? Are they prokaryotic or eukaryotic?



10. Compare/contrast diatoms and dinoflagellates in the table below:

	<b>DIATOMS</b>	<b>DINOFLAGELLATES</b>
Mobility/movement		
Way of eating/getting energy		
Cell walls made of....		
Specific adaptations		
Problems		
Sexual reproduction		-----

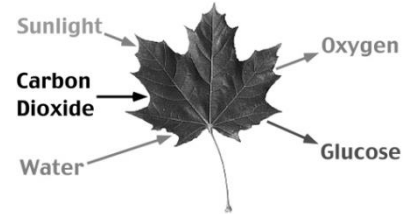
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Period: \_\_\_\_ Date: \_\_\_\_\_

### Marine Photosynthesis –

1. Where do nearly all living things obtain energy from? In what chemical form do cells use energy?

2. What is the difference between autotrophs and heterotrophs? Give an example of each.



3. What does the word photosynthesis mean?

4. What is the equation for photosynthesis? Write it out as a chemical equation AND using words (label reactants and products).

5. Which organelle does photosynthesis take place in? Which pigment absorbs the sunlight?

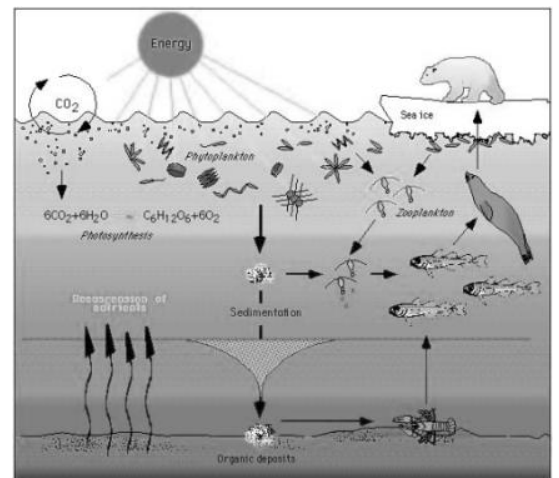
6. Which ocean zone does the most photosynthesis occur in? Why? Where on the globe does the most photosynthesis occur?

7. How do heterotrophs benefit from photosynthesis? (*name 2 ways*)

8. Algae and cyanobacteria perform photosynthesis, but they do NOT have chloroplast. What do they use?

9. What 3 factors affect the rate of photosynthesis? (*hint: think about the waterweed simulation*)

10. Why did the bubbles being produced in the Waterweed Simulation demonstrate the rate photosynthesis was occurring at?



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## Ocean Acidification –



1. What is ocean acidification? (*give full definition*)
2. How does photosynthesis help to control ocean acidification? What is increasing to in the atmosphere to break up the carbon cycle?
3. What percentage of the carbon dioxide released into the atmosphere is absorbed by lakes and oceans?
4. What is formed when carbon dioxide is dissolved in water? How does this affect the pH of oceans?
5. What chemical compound do coral and shelled organisms rely on?
6. When we tested the effects of acidic solutions on coral substrate, which solution had the strongest effect? Why?
7. What are humans doing to cause such an increase in carbon dioxide emissions?
8. Why are coral reef ecosystems so important to the rest of the ocean? To humans?
9. Where is the rate of ocean acidification the highest? Why?

