
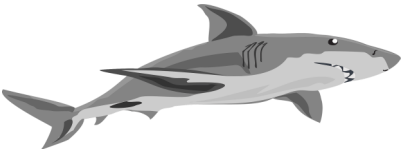









Name: _____

Spice of Life

Part 1: Observations

During the video of Habitat A, make one tally mark for each different animal or plant you observe in that category. Once you have more than ten tally marks, put a plus sign (+) and stop counting for that category.

Categories of Animals and Plants	Habitat A
Fish and Eels 	
Sharks 	
Crabs, Lobsters, Shrimp 	
Turtles 	
Sea Cucumbers and Sea Stars 	
Anemone 	
Coral 	
Seagrass and Sea Sponges 	
Algae 	


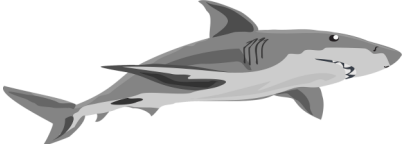




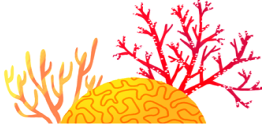


1. How many different categories of animals and plants did you see in Habitat A?

2. I observed animals eating

3. If you observed Habitat A a year later, do you think you would see similar species?

Yes
No
4. This means Habitat A is: _____.
5. Habitat A has been this way for a _____ time.

Over time, the temperature changed. Watch the video of Habitat B to see what happened. During the video, make one tally mark for each different animal or plant you observe in that category. Once you have more than ten tally marks, put a plus sign (+) and stop counting for that category.

Categories of Animals and Plants	Habitat B
Fish and Eels 	
Sharks 	
Crabs, Lobsters, Shrimp 	
Turtles 	
Sea Cucumbers and Sea Stars 	
Anemone 	
Coral 	
Seagrass and Sea Sponges 	
Algae 	

6. How many different categories of animals and plants did you see in Habitat B?

7. What happened to the coral when the temperature rose?

8. How long did this change take?

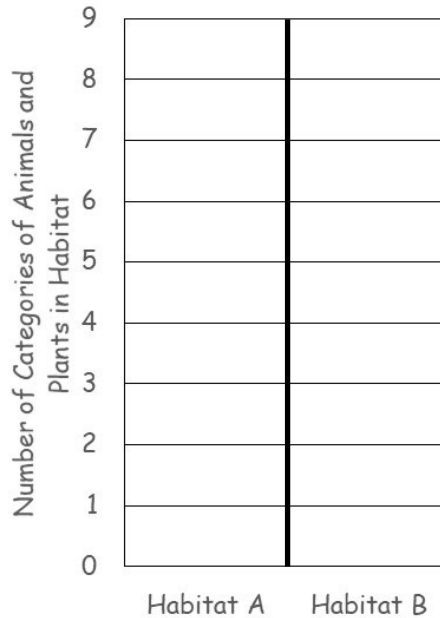
9. When the temperature was rising, was the habitat stable or unstable? _____

10. If you observed Habitat B a year later, do you think you would see similar species?
Yes No

11. This means Habitat B is: _____.

Analysis

12. Fill in one box for each category of animal and plant that you recorded in each habitat (look at questions 1 and 6 for help).



13. More fish live in Habitat _____ than in Habitat _____. This might be because

_____.

Explanations

14. Before the temperature change, the habitat was _____. The temperature rise caused the habitat to _____, making it _____. During this time many plants and animals _____. Eventually the habitat became _____ again, but _____ species lived there.

15. If I were a fish I would want to live in Habitat _____ because _____

_____.

Part 2: Hungry Habitats — Normal Temperatures

16. Circle the animal you are: Guard Crab Sea Snail Parrotfish

17. Circle the foods you eat: algae coral seagrass

18. Do you have a preference for any food and, if so, what? _____

If you have a preference for a food, you have to eat that food first if you can.

19. I have to eat _____ times to survive. If I eat _____ than that, I will die. If




I eat _____ than that, I will not be allowed to participate in the simulation any more.




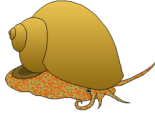

Habitat 1: Normal Temperature

20. Circle the foods that are found in Habitat 1: algae coral seagrass

21. Fill out the table with the amount of food at the start and finish.

	Algae 	Coral 	Seagrass 
Start			
Finish			

22. Fill out the table with the number of animals at the start and finish.

	Guard Crab 	Sea Snail 	Parrotfish 
Start			
Finish			

23. I ate _____ times, so I am alive dead.

24. I observed the guard crabs eating: algae coral seagrass


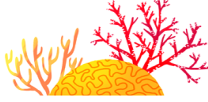

25. I observed the sea snails eating: algae coral seagrass

26. I observed the parrotfish eating: algae coral seagrass


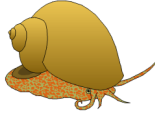

Habitat 2: Normal Temperature

27. Circle the foods that are found in Habitat 2: algae coral seagrass

28. Fill out the table with the amount of food at the start and finish.

	Algae 	Coral 	Seagrass 
Start			
Finish			

29. Fill out the table with the number of animals at the start and finish.

	Guard Crab 	Sea Snail 	Parrotfish 
Start			
Finish			

30. I ate _____ times, so I am alive dead.

31. I observed the guard crabs eating: algae coral seagrass


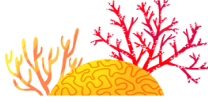

32. I observed the sea snails eating: algae coral seagrass

33. I observed the parrotfish eating: algae coral seagrass


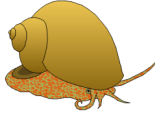

Habitat 3: Normal Temperature

34. Circle the foods that are found in Habitat 3: algae coral seagrass

35. Fill out the table with the amount of food at the start and finish.

	Algae 	Coral 	Seagrass 
Start			
Finish			

36. Fill out the table with the number of animals at the start and finish.

	Guard Crab 	Sea Snail 	Parrotfish 
Start			
Finish			

37. I ate _____ times, so I am alive dead.

38. I observed the guard crabs eating: algae coral seagrass

39. I observed the sea snails eating: algae coral seagrass

40. I observed the parrotfish eating: algae coral seagrass

41. Based on what you have learned about Habitats 1, 2, and 3, fill out the food web below by drawing lines connecting the animals to what they eat.

Food Web

Guard Crab

Sea Snail

Parrotfish

Algae

Coral

Seagrass

42. In coral reefs, tiger sharks eat guard crabs and parrotfish. Draw a box where tiger sharks should be in the food web and connect it to what it eats.

43. While the animals in some of the habitats seemed to eat up a food source, these food sources would be expected to grow back over time (as long as they were there to start with). Having the same species of plants and animals in an area for a long time would make the habitat _____.

44. Which species do you think would be found in each habitat after one year?

Habitat 1: algae coral seagrass guard crabs sea snails parrotfish

Habitat 2: algae coral seagrass guard crabs sea snails parrotfish

Habitat 3: algae coral seagrass guard crabs sea snails parrotfish

Part 3: Hungry Habitats — High Temperatures




While the habitats had been stable for a long time, increasing temperatures caused a change in them.

45. Thinking back to the video, how do you think the increasing water temperature would affect the habitat? _____


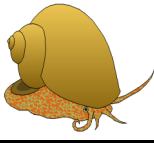

Habitat 1: High Temperature

46. Circle the foods that are now found in Habitat 1: algae coral seagrass

47. Fill out the table with the amount of food at the start and finish.

	Algae 	Coral 	Seagrass 	Total Food Sources
Start				
Finish				

48. Fill out the table with the number of animals at the start and finish.

	Guard Crabs 	Sea Snails 	Parrotfish 	Total Animals
Start				
Finish				


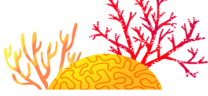

49. I ate _____ times, so I am alive dead.

50. Number of animals that died:

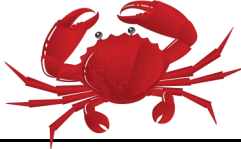
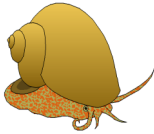

Habitat 2: High Temperature

51. Circle the foods that are now found in Habitat 2: algae coral seagrass

52. Fill out the table with the amount food at the start and finish.

	Algae 	Coral 	Seagrass 	Total Food Sources
Start				
Finish				

53. Fill out the table with the number of animals at the start and finish.

	Guard Crabs 	Sea Snails 	Parrotfish 	Total Animals
Start				
Finish				


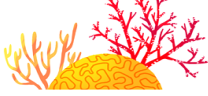

54. I ate _____ times, so I am alive dead.

55. Number of animals that died:

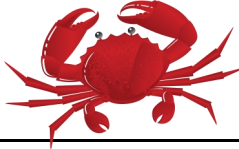
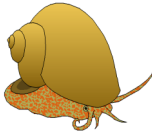

Habitat 3: High Temperature

56. Circle the foods that are now found in Habitat 3: algae coral seagrass

57. Fill out the table with the amount of food at the start and finish.

	Algae 	Coral 	Seagrass 	Total Food Sources
Start				
Finish				

58. Fill out the table with the number of animals at the start and finish.

	Guard Crabs 	Sea Snails 	Parrotfish 	Total Animals
Start				
Finish				

59. I ate _____ times, so I am alive dead.

60. Number of animals that died:

Food

61. What was different between the food sources in the habitats before the temperature change?

Habitat 1 had algae coral seagrass

Habitat 2 had algae coral seagrass

Habitat 3 had algae coral seagrass

62. The food source that was affected by the temperature change was _____.

This left Habitat 1 with _____ food sources, Habitat 2 with _____ food source, and Habitat 3 with _____ food sources.

Animals

63. In Habitat 1, circle what animals were present before and after the temperature change. If a species had some animals die, but not all of them, underline it.

Before: guard crab sea snail parrotfish

After: guard crab sea snail parrotfish

64. The temperature change caused Habitat 1 to lose _____ species of animal and _____ total animals.

65. In Habitat 2, circle what animals were present before and after the temperature change. If a species had some animals die, but not all of them, underline it.

Before: guard crab sea snail parrotfish

After: guard crab sea snail parrotfish

66. The temperature change caused Habitat 2 to lose _____ species of animal and _____ total animals.

67. In Habitat 3, circle what animals were present before and after the temperature change. If a species had some animals die, but not all of them, underline it.

Before: guard crab sea snail parrotfish
 After: guard crab sea snail parrotfish

68. The temperature change caused Habitat 3 to lose _____ species of animal and _____ total animals.

69. Which habitat had the largest change in the number of animals present after the temperature increased? Habitat 1 Habitat 2 Habitat 3

Total Species

70. How many species (food and animals) are present when the habitat is stable for both normal and high temperatures?

	Normal Temperature	High Temperature
Habitat 1		
Habitat 2		
Habitat 3		

71. List the habitats in increasing order of the number of species they had when the temperature was normal. _____ lowest _____ highest

Part 4: Explanations and Applications

Explanations

72. Why might the differences in the habitats cause different amounts of animals to die after the temperature changed?

Habitat _____ had the **fewest** animals die off because it had _____

_____. Habitat _____ had the **most** animals die off because it had _____.

73. Habitats are most stable when _____.

Applications

Use your food web on page 8 to answer these questions.

74. Circle the animal that was affected the most by the increase in temperature.

guard crab

sea snail

parrotfish

Evidence: This animal was affected the most because _____

_____.

75. Animals are more likely to survive changes in the environment when _____

_____.

76. The species that was most stable was _____.

77. What would happen to tiger sharks if the temperature of the seawater increased?

When the seawater gets warmer, _____ dies, which means that _____

_____ none/some/all

of the guard crabs die and _____ of the parrotfish die. This causes _____

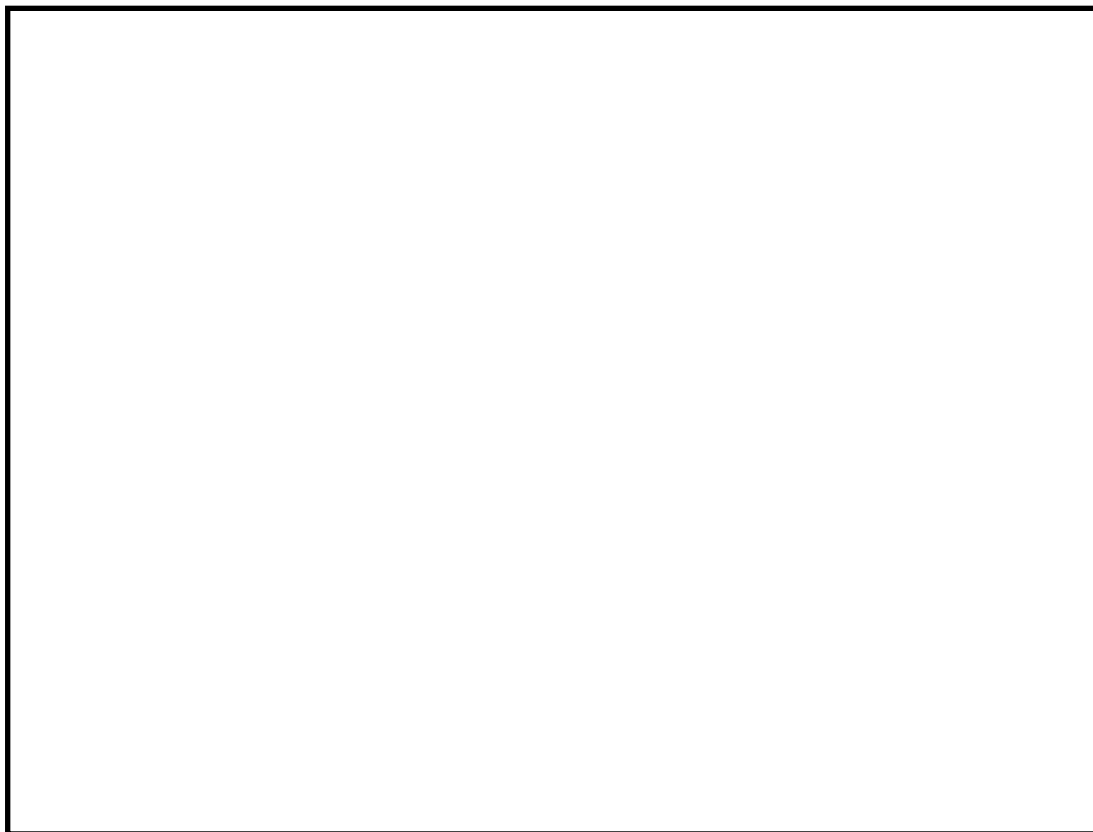
_____ none/some/all

_____ none/some/all

tiger sharks to die because _____

_____.

78. Draw what you think a stable rainforest might look like.



Animal Species

Food Species

Do you have
multiple of each
food species in your
picture? Yes No

79. Draw what an unstable rainforest might look like.



Animal Species

Food Species

Do you have
multiple of each
food species in your
picture? Yes No