

Name:
Section:
Date:

Global Kelp Location Student Answer Sheet

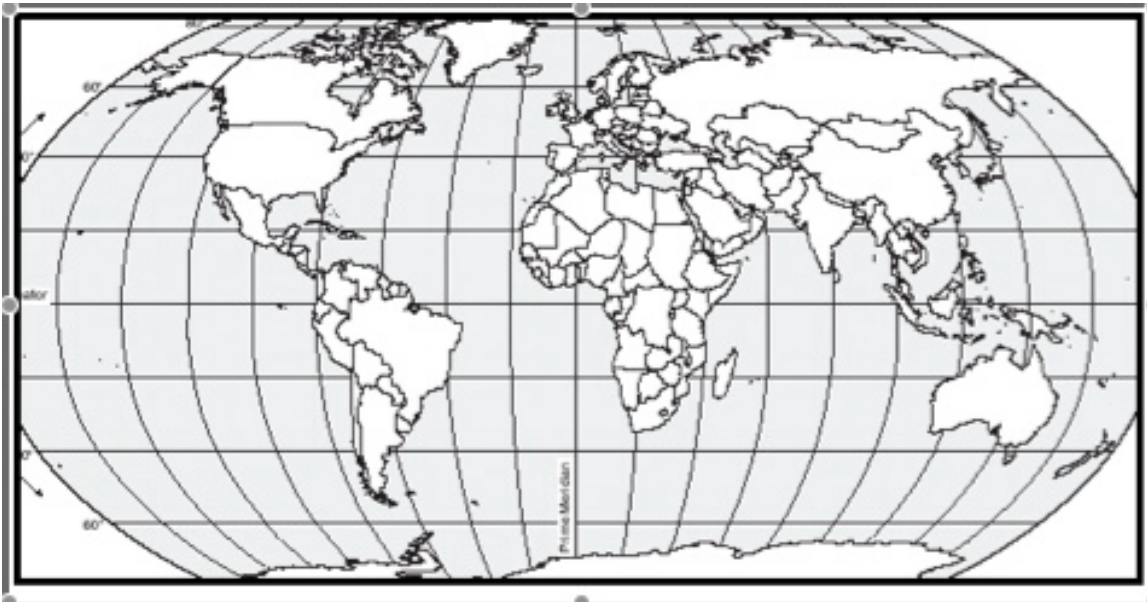
Preview:

Answer questions 1 a. and b. before beginning the exercise.

1. a. List the regions on Earth you think would be ideal for kelp forest locations in the table below. You will return to your predictions at several points in the exercise to check off if you were correct, so leave that section blank for now.

General Location	Reason Kelp Would Grow in this Region.	Correct?

b. Shade on the **world map** the same areas listed above showing where you believe the kelp forest would grow.



Bathymetry and Kelp Forests

Answer these questions while looking at the map of **Bathymetry**.

2.
 - a. What is the highest elevation on your map?
 - b. What is the lowest elevation on your map?
 - c. What units are being used? (Hint: Look at the legend.)
 - d. What do the negative numbers mean?
3. Compare the locations of the shallow areas to your predictions in the chart above, put a check mark where you were correct.

Temperature and Kelp Forests

Answer these questions while looking at the map of **Sea Surface Temperatures**.

4. What ocean temperature is the most common?
5. You have studied histograms in math. What type of information do histograms give you about data?
6. Describe the areas of warm and cold water.
Are they where you would expect?

Are there any areas that surprise you?
7.
 - a. What color represents a temperature between 14° and 16° C?
 - b. What part of the ocean is the warmest?
 - c. What temperature is this?

d. What regions of the ocean are ideal temperatures for kelp? Does this fit your predictions?

Look at the relationship between the location of the **kelp forest** and **temperature**.

8. Respond to the following questions.

a. Are there areas of the kelp forest that are in warmer/colder water than you would expect? Describe these areas.

b. What is the warmest temperature that you find kelp in?

c. The coldest?

9. In what depth of water does kelp appear most often?

Upwelling and Kelp Forests

Answer these questions while looking at the map of **Upwelling and Kelp Forests**.

10. Fill in the data table below.

Continent name	Hemisphere	Ocean Basin	Coast kelp is found on. (N,S,E,W)
North America	N	Atlantic	E

11. What creates upwelling?

12. Wind currents that are over upwelling areas are blowing in which direction relative to the coastline?

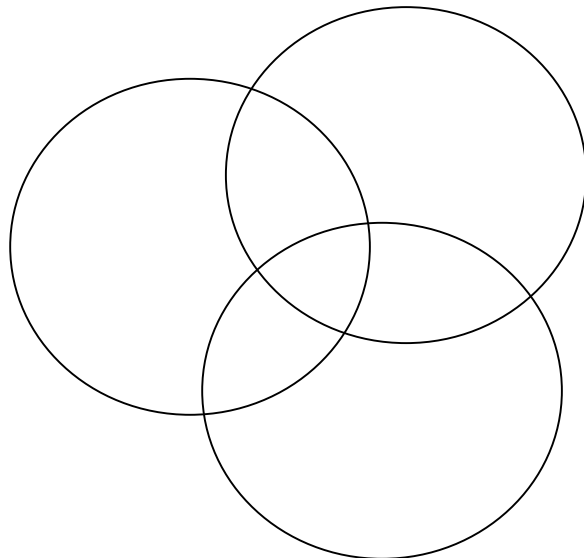
Conclude:

13. Color the World Map below *green* where kelp forests appear.
Put **xx**'s in black over where kelp forests are in upwelling areas.



14. What might upwelling bring to the kelp forest?

15. Label the Venn diagram below with the three factors that create ideal conditions for kelp forest survival.



16. Do you suspect other factors may also be important to kelp forest growth and survival? What do you think they might be and why?

17. Review your “preview” table. Were there any patterns that you discovered in the kelp forest distribution that you hadn’t predicted?

Extend:

1. Use the web to look at several web sites (listed below) to learn more about *kelp forests* and how they are monitored.
2. Learn more about *how upwelling works*. Read online at the links included here or try the upwelling lab set up by your teacher.

Links:

Kelp Forests:

Site with links http://www.pcds.org/share/sci8/usefullinks/kelp_forest.htm

Monterey Bay Aquarium Kelp Cam - <http://www.mbayaq.org/efc/kelp.asp>

Monterey Bay Aquarium Field Guide -

http://www.mbayaq.org/efc/living_species/default.asp?hOri=0&hab=5&inhab=479

Kelp Forests, Rainforests of the Sea -

http://www.lincoln.smmusd.org/staff/Vanderveen_Web/Ecology/Kelp%20Reading/kelpreadings.htm

Ocean Realm - <http://www.pbs.org/oceanrealm/seadwellers/>

Upwelling:

<http://oceanexplorer.noaa.gov/explorations/02quest/background/upwelling/upwelling.html>