

## Chlorophyll-a from Space!

### Student Worksheet

Student name: \_\_\_\_\_

#### Directions

1. Open another browser window and explore the [SeaWiFS Browser](#).
2. Use the table of links below the global map image to select the current year and month. This will give you averaged results for an entire month's data. \*\*If you are at the beginning of a month, you may choose the previous month's data for a better image.
3. Click on the rainbow box in the top left side toolbar of the page and answer the following questions:
  - a) What are the units used to measure chlorophyll a?
  - b) What color designates the highest concentration of chlorophyll a?
  - c) What color designates the lowest concentration of chlorophyll a?
4. Open another browser window and compare the recent chlorophyll a concentration maps with current [sea surface temperature data](#).
  - a) In the North Atlantic Ocean, do concentrations of chlorophyll a increase or decrease from the equator to the North Pole?
  - b) In general, do colder or warmer waters contain higher concentrations of chlorophyll a?



c) What is the chlorophyll a concentration in the middle of the North Atlantic Ocean? Explain why.

e) Can you hypothesize why higher chlorophyll a concentrations occur in coastal regions almost regardless of sea surface temperature?

5. To see changes in ocean productivity throughout the year, use the archived images on the [SeaWiFS](#) browser and click through the monthly images over the course of one year.

6. Concentrate looking at the Polar Regions and the North Atlantic basin and answer the following questions:

a) As you go from January to July, describe what happens to ocean productivity near the Arctic Ocean?

b) What is causing this change? Explain.

c) In January/February, identify the region in the North Atlantic with the lowest productivity?

d) As the year progresses to the summer months, what happens to this region?

e) What could be causing this change?

### **Assessment**

1. According to these images, is the Gulf Stream adding nutrient-rich or nutrient-depleted waters to the northern Atlantic Ocean?

2. Where will abundances of zooplankton live in relation to abundances of phytoplankton? Explain.

3. Why is phytoplankton so important?

4. Why would a fisherman be interested areas of high phytoplankton concentrations?

5. How can ocean currents affect phytoplankton?

6. What other factors may affect phytoplankton concentrations? Explain.