

Research Cruise Scavenger Hunt

OBJECTIVES

1. Students will familiarize themselves with the research being conducted on the Ronald H. Brown from San Diego, CA to the Galapagos Islands by completing a scavenger hunt using Mrs. Richards' daily logs.
2. The scavenger hunt will give the students an opportunity to interact with the daily logs posted on the web site, embedding the key points of the logs into their memories more effectively than if they had just read the logs.

AGE

Grades 8-12.

TIME ALLOWANCE

2 hours

MATERIALS

Printed hard copies of Mrs. Richards' daily logs- available at www.ogp.noaa.gov/epic

Scavenger Hunt worksheet for each student

Internet access for students to answer a couple of the scavenger hunt questions (one computer could be shared by the whole class)

INSTRUCTION:

1. This lesson is intended for classrooms that have been following the NOAA ship Ronald H. Brown on its research cruise from San Diego, CA to the Galapagos Islands, September 5- October 6, 2001. If you have not been following the cruise, take a day or more to familiarize yourself and the students with the Teacher at Sea Program, Mrs. Richards' daily logs and photos, and videos posted on the web site at www.ogp.noaa.gov/epic
2. Hand out the worksheet to each student, or groups of students. Give them hard copy printouts of the daily logs (sitting them at the computer is not recommended because they could use the "Find" feature in the browser to give them an unfair advantage).

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3. This activity would be best if designed as a game- the person to finish first gets a prize, the group that gets the most correct answers in a given period of time wins a prize, etc.

EVALUATION / ASSESSMENT

Successful completion of the Scavenger Hunt Worksheet

Name: _____

Research Cruise Scavenger Hunt

KEY

Mrs. Richards has been sailing the Pacific Ocean and telling you all about the research and living conditions aboard the R/V Ronald H. Brown. Use her daily logs to complete the following.

Match the research group on the left with the key words on the right.

- | | | |
|--|---|------------------|
| ☆ 1. University of California at Santa Barbara | → | Aerosols |
| ☆ 2. Universidad Nacional Autonoma de Mexico | → | Lidar |
| ☆ 3. University of Washington Applied Physics Laboratory | → | Chlorophyll |
| ☆ 4. NOAA Environmental Technology Laboratory | → | Ocean turbulence |
| ☆ 5. Colorado State University | → | Radar |

Place a star next to each group above whose research will help climate forecasting models.

Match the equipment on the left with one of the key things it measures on the right

- | | | |
|-----------------------|---|--|
| 6. CTD | → | Size of small water droplets |
| 7. Doppler Radar | → | Conductivity, temperature and depth of ocean samples |
| 8. Kaband | → | Concentration of DMS |
| 9. MMP | → | Wind velocity |
| 10. Gas Chromatograph | → | Ocean turbulence |

11. Get on the internet and find a map of the world. Print it out, and circle San Diego, CA and the Galapagos Islands. Draw a line connecting the two.

12. What latitude and longitude will the ship be spending most of the cruise? 10°N, 95°W

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13. What does the SeaWiFS satellite measure? different wavelengths of light being reflected from the surface of the ocean
14. Find one person in your class who has spent at least one night on a boat. _____
15. The Ronald H. Brown was in the middle of a storm that evolved into Hurricane Ivo
16. How does the speed at which air heating over the ocean differs from air heating over land, and how does that impact the size of storms in the ocean versus over land? Heating is much slower over the ocean, resulting in much larger storms
17. What mysterious phenomena have some sailors seen at sunset? green flash
18. Find two people in your class that have crosses the equator. 1) _____ 2) _____
19. How is energy transferred from the air to the ocean? wind causes waves, which add energy. tides add energy. sun adds heat energy.
20. Get on the internet and find a weather satellite photo that includes the latitude and longitude you answered for question #12. Print it out and attach it to this handout. (hint: try a Yahoo search of "NCAR RAP")
21. During what research operation are we most likely to see sharks? when we're working with or near buoys
22. What's the name of the equipment that uses liquid nitrogen, lots of lenses and mirrors, and a laser? lidar
23. What is a gummy suit used for? survival
24. What does a sonic anemometer measure? heat flux
25. Pick a number between 2 and 9. Multiply it by 9. Add the two digits together. Subtract 5. Find the letter of the alphabet that corresponds with that number (ex. 1=A, 2=B, etc.). Find a country whose name starts with that letter of the alphabet. Take the second letter of that country name, and find an animal that starts with that letter. What animal did you pick? (ok, this has nothing to do with the research cruise, but one of the scientists taught it to me)
26. What is the name of the devices dropped by the airplanes that are flying near the ship? radiosondes

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27. What is an aerosol? any airborne particle
28. List 4 animals that have been seen on or near the ship. egrets, pilot whales, spiders, porpoises
29. What brand of ice cream is the freezer on the ship full of? Haagen Daas
30. When people get used to being on a ship, and they no longer feel seasick, they have “sea legs.” If you were a cartoon artist, what do you think sea legs would look like? Draw it in the space below.

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27. What is an aerosol? _____

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