

OIL SPILL RESPONSE ACTIVITY TEACHER INSTRUCTIONS

See lesson plan for all activity materials.

Alaska Oil Spill Game

See pages 61-63 of the Alaska Oil Spill 4-6 Curriculum, by the Prince William Sound Science Center and Prince William Sound Regional Citizens' Advisory Council, found at <http://www.pwsrca.org/resources/reports-documents/outreach/#Curriculums>

Oil Spill Cleanup Activity (groups of 3-4)

Before activity:

- Make “crude oil” by mixing vegetable oil and cocoa powder.
- Make salt water if necessary.
- Set up materials station for students to “buy” response equipment.
- Set up response stations with pan, materials for plants/animals/coast, and disposal container.
- Create water habitat: fill pan 2/3 with water, add a couple drops of blue food coloring; add any sort of beach or sediments if desired.

Procedure:

1. Using the response station pans, dip into the fresh water the different materials to represent plants/animals/coast. Discuss how the materials respond to fresh water
2. Review Equipment Cost Sheet and explain how much each item costs. Groups must stay within their budget of \$100,000.
3. Pour crude oil into each pan, begin timer for one minute. Discuss what happens to the oil once it touches the water.
4. Have one or two students use straws to blow the oil vigorously for one minute to simulate a storm.
5. Students must wait one minute before starting any response efforts. Timer will go for 25 minutes. Simulate wind by blowing with a straw for 30 seconds.
6. Students dip into the crude oil the different materials that represent plants/animals/coast. Discuss how the materials respond to oiled water.
7. During the wait time, students can go to the store and purchase materials to move, gather, absorb, and clean the oil. They must stay within their budget of \$100,000
8. Students try to contain the oil spill and use detergent to try to clean each one of the plants/animals/coast materials.
 - a. Give one example of how a plant or animal is affected by spilled oil.
 - b. Have students put their oiled materials in the waste container.
9. Have students tally up their equipment and disposal costs.

- a. Discuss similarities and differences between groups.
 - b. Make a chart of class results. Which group cleaned its ocean at the lowest price?
10. Wrap-up questions:
- a. Based on what you experienced today, how do you think the oil spills interact with our coastlines?
 - b. What are the biggest threats of an oil spill?
 - c. How would you design your response equipment to be able to effectively clean up an oil spill?
 - d. How does the local environment affect the kinds of equipment needed to respond to an oil spill?
 - e. How much money does it really cost to clean up an oil spill?
 - f. Which materials were easiest to clean with detergent? Which were difficult to clean?
 - g. Which material worked best to trap the oil?
 - h. Which worked best to soak up the oil?
 - i. Did any of the sorbents pick up water in addition to oil?
 - j. How would you dispose of oil-contaminated materials in a real oil spill?
 - k. How much money did it cost you to clean up your oil spill?