OIL SPILL CLEANUP

|  |
| --- |
| **TEAM NAME**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **TEAM MEMBERS**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |  |

Your engineering firm has been contracted by the Environmental Protection Agency (EPA) to investigate the best way to clean up an oil spill. Your group must use a $100 budget to clean up the most oil from the simulated spill as possible. Every $2 you save will count as one point towards your final score. Using the chart below, determine what Type of Material and how many of each (Quantity) your group wants to order.

When your group has used all the materials you purchased, the remaining percent of oil will be calculated and you will be given a score based on your performance.

 For removal of 25% of the Oil: 25 Points

 For removal of 50% of the Oil: 50 Points

 For removal of 75% of the Oil: 75 Points

 For removal of 100% of the Oil: 100 Points

**Fill out the following worksheet with your material order requests, and calculate the total cost and the remaining budget. For each 2 dollars saved, one additional point is rewarded. If you SPEND $80, you saved $20 and receive 10 extra points towards your score. If you clean up 90% of the oil, you receive 90 points + 10 extra = 100 total points.**

**Your goal is to reach 80 total Points.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Directions:** |  |  |  |  |  |  |  |
| Fill out this order form by choosing x materials to help you clean up the oil spill. Your team has a **$100** budget to buy the materials |
| **Type of Material** | **Cost** | **Quantity** | **Cost x Quantity** |
| Straw + Tape (2”) |  $2 x = |
| Q-tip |  $6 x = |
| Cotton Ball |  $8 x =  |
| Feather |  $12 x = |
| Fiber Cloth Square |  $20 x = |
| Pipet |  $40 x = |
|  |  | **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Total Expenses\* =\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****\*CANNOT BE OVER $100** |
|  |  |  **Remaining Budget =** **($100 – Total Expenses)**  |

OBSERVATION AND EXTENSION QUESTIONS:

1. Why does most of the oil stay above the water surface? How thick is the layer of oil above the water?
2. What material(s) was most effective at removing the oil? Why?
3. What effect did the soap (dish detergent) have on the oil? Why?
4. How does oil effect feathers, other animals, and the land when it hits the shore?
5. What are some techniques for cleaning up large oil spills? For rescuing animals that have been effected?