**Global Simulation Oil Spill / Leak Problem**

Your country has experienced a massive oil spill / leak as a result of an oil tanker crashing into shore, pipeline developing a leak, oil transport rail cars derailing, or an oil rig developing a leak. This has caused over thousands of gallons of oil to leak into one of your major waterways and is threatening to significantly damage your water and oil resources. If you don’t do enough to research and create a reasonable response to this problem and carry out a possible solution, your water and/or oil supplies will be significantly and negatively affected. The more effective and complete and timely your report, work and final analysis report, the more money you could make. Up to $50 000 is possible.

**Step 1**

Research Report: You must create a research report that includes the following headings with the details after. Break the different sections up amongst your government officials and have each person complete at least one section and put it all together into one Word Document.

* Short term impacts of oil spills & leaks
* Long term impacts of oil spills & leaks
* Methods for cleaning up oil spills & leaks
* Methods for preventing oil spills & leaks
* Actual example of an oil spill or leak in their country or the nearest country to theirs.
* Resource List (proper bibliography)

**Step 2**

You will be responsible for trying to clean up an actual oil spill. You need to bring your own shallow tub or deep pan that can be filled with water and have oil dumped into it. On the day of the experiment, we will be filling the tub or pan half full of water. We will be dumping a ¼ cup of vegetable oil mixed with food coloring into your tub and you will responsible for cleaning it up using any and all of the materials of your choice. We will be assessing how effective your clean-up has been by how much oil is left in the water. You should not be touching the oil with your fingers. You should bring tweezers or straws and/or tape to hold your materials. Use what you learned in your research report to guide you in different ways you could contain and clean-up the spill.

Materials that you can bring and use include: (you can bring other stuff if you would like)

* paper towels pieces (1 inch by 1 inch)
* cardboard pieces (1 inch by 1 inch)
* cotton balls (1 at a time)
* straws and tape to hold the materials
* tweezers to hold the materials

**Step 3**

You will be allowed to bring a small container of any liquid dish soap that you might have at home to now dump over the remaining oil and food coloring residue. Afterwards, use your cleaning materials again to attempt to clean up the rest of the oil mixture.

**Step 4**

Write up a final exploration observation report. Include it with your beginning Research Report. Your report must include the following headings and sections:

* What did you do? List everything that you tried.
* What happened? Describe how well each material worked in cleaning up the oil mixture.
* End Result? How much of the oil mixture is still remaining? (Graphs always help)
* Final Recommendation? What would you recommend your government to do and why?

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| --- | --- | --- | --- | --- |
| **Criteria** | **Specifics** | **Self** |  | **Teacher** |
| Safety and Care | cleaned up any messes quickly and completely |  |  |  |
| took care with all equipment to prevent damage and accidents |  |  |  |
| demonstrated awareness of safety of self and others by your actions |  |  |  |
| accurately measured and timed |  |  |  |
| Initial  Research Report | neat and understandable |  |  |  |
|  | all sections have headings (the words in bold below) that are clear and identifiable |  |  |  |
|  | all sections are separated by an empty line |  |  |  |
|  | detailed explanation of **Short Term Impacts** |  |  |  |
|  | detailed explanation of **Long Term Impacts** |  |  |  |
|  | detailed explanation of **Methods of Cleaning Up** |  |  |  |
|  | detailed explanation of **Methods of Preventing** |  |  |  |
|  | detailed explanation of **Actual Example of a Spill or Leak** |  |  |  |
| Exploration Actions | brought a variety of materials to use (cotton balls, cardboard, paper towels, straws, tape, tweezers, etc) |  |  |  |
|  | only used the materials you brought to contact the oil mixture |  |  |  |
|  | continued to persist when trying the different materials (did not give up) |  |  |  |
|  | analyzed which method worked the best and focused on using it |  |  |  |
|  | followed the steps as outlined in the exploration description |  |  |  |
| Final Exploration Writeup | neat and understandable |  |  |  |
|  | all sections have headings (the words in bold below) that are clear and identifiable |  |  |  |
|  | all sections are separated by an empty line |  |  |  |
|  | detailed explanation of **What did you do?** |  |  |  |
|  | detailed explanation of **What happened?** including how effective each method was at cleaning up the oil mixture |  |  |  |
|  | detailed explanation of **End Result** including how much oil mixture is remaining after all of the methods |  |  |  |
|  | detailed explanation of your **Final Recommendations** to your government and detailed explanation of why. |  |  |  |
| **Something that I liked about my performance / assessment and will make sure that I do again next time.** | | | | |
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| **Something that I did not like about my performance / assessment and will and do differently or not do the next time.** | | | | |
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