**Cooperative Group Problem Solving**

**CHEMICAL DISASTER!**

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**TASK:**

You have arrived to class today and found a spill. Determine how you will clean up this spill!

**Documentation of the Challenge:**

1. Picture of the set up and the materials available. [C]
2. Statement that describes the problem. [C]
3. Brainstorming and Planning with reasoning for the plan. Theory must be used to support the plan. You must ensure that your plan in described using all the concepts you know from the course. [T/I][A][K/U][C]
4. Measurements and Analysis. Collect the data! Record and organize your data clearly! [T/I][K/U][C]
5. Conclusions and Error Discussion. State your final results. Discuss if the final results seem reasonable. Discuss any errors. Provide a solution to the problem. State how you will clean up the spill. Provide a complete procedure. [K/U][T/I][C]

**Teacher Instructions:**

The documentation process is the same for all activities of this type. This allows students to improve their communication skills throughout the course.

For this activity, students will have access to: a variety of indicators and litmus paper, a standard acid and base (HCl and NaOH), distilled water, tap water, droppers, spot plates.

Once the group has identified the spill as either an acid or a base, provide the group with some pH paper to determine the exact pH of the spill.

Some students may attempt to neutralize the spill. I permit them to try.