Water Cycle Lab Directions

A "Slides" presentation has been shared with you; use it as a template to record your lab plans. You may edit the template, add photos or sketches or tables of data, and change the formatting depending on the needs of your lab. **This is an INDEPENDENT project**. You will be **sitting in your regular seats**.

Directions:

Develop Your Investigation Question

Use the list of questions we generated as a class to help you develop your investigation question. You are welcome to use one from the list verbatim, or if you have another idea, feel free to investigate something you wonder about and come up with yourself. As you develop your question, these are the parameters to consider:

- Your question needs to have **something to do with the stages of the water cycle**: evaporation, transpiration, condensation, precipitation, runoff, percolation/infiltration
- Your question must be something you can attempt to answer through a lab activity **at school**. You are welcome to complete parts of your lab at home, but most of it should be conducted at school. It should also be something that can be investigated within about 2-5 days.

☐ *Stop and record your work so far into the lab project template.*

Design Your Lab

1) List the **materials** you will need. Be specific- what containers, tools, materials, substances, supplies, etc will you need? List everything.
2) List the **steps** you will need to go through to complete your lab. Be very detailed and specific about your **procedure**. Think:
    - Are you using a fluid? **Specify how much** (in mL or other volume measures)
    - What will happen **first**? Then what? Think through **every step** you will need to go through, and write it out in detail.

NOTE: The purpose of writing your procedure is so that your experiment can be replicated. Remember, scientists work with the assumption they might be wrong. Other scientists need to be able to test the theories as well. Recording your steps thoroughly allows others to follow behind you to support your ideas or challenge them.

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Conduct Your Lab, Record Your Observations

1) **Follow the steps** of your procedure the way you have written them.
2) Record any relevant details as you go, and feel free to make sketches to include, or take photos to upload. Include any tables of data or specific measures you take.

NOTE: When designing your own lab, you often find during this part of the process that you need to go back and add to your procedure, or change it because something isn't working right. That's ok, you can change your procedure as you go. Just make sure the final procedure accurately lists the steps you eventually took, so the lab can be replicated exactly how you did it.

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Summarize Your Results

1) **Write** about your findings
2) Try to answer the question you posed at the beginning of your investigation. Do you have enough data and observation to make a claim? If not, use this section to write about any follow-up investigations that might be necessary.

NOTE: Scientists often find that after careful data collection, observations, and analysis they realize they can't answer the question they posed; they don't have enough data. That's normal and part of the process. ***Experiments often raise more questions that they answer.***

Use your summary section to write about your findings, and realize that your findings may simply be that you didn't find anything conclusive. Write about why that might be, and what additional experiments might be needed to follow up.

☐ *Stop and record your summary into the lab project template.*