Science 8 Inquiry Lab

Mass vs State of Matter

Name _____
Date _____
Block _____

In this activity, you will answer the following question:

Does mass change when you change the state of matter – for example from liquid to solid.

First of all, we need to figure out how to answer this question. What ideas or 'concepts' do you need to understand or research first? For example, do you understand what 'state of matter' means?
Write down the concepts and background knowledge you will need to understand and explain them below…

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Next, we need to have a hypothesis. This is the possible answer to your question, written with an 'If…then…because…' format.
For example:

If I feed my dog twice as much food ***then*** he will gain weight ***because*** he consumes too many calories and doesn't burn them off.

Now, come up with your hypothesis for the above question.

_____
_____
_____
_____
_____

Are there any skills that you're not sure of that you will need to learn first? For example, if your hypothesis involves flying, you might need to learn how to pilot a plane first.
What skills would you need to know to test this hypothesis?

_____
_____
_____
_____
_____
_____
_____

Now, you need to come up with a procedure that will test your hypothesis. Things you need to think about:
Make this like a recipe – you need to think about exactly what materials you will be using, how much of each, and what times you will be using.

For example, when you bake a cake, your recipe doesn't just say...
'put flour in a container, add eggs, milk, baking soda, and bake'
That wouldn't be a very successful recipe for someone to follow.

Also, remember your limitations. Think about the equipment you will have access to. Ask Ms Enders if you're not sure what equipment is available. For example, we do not have access to an electron microscope. Keep it simple.

In a scientific procedure, imagine that you are being 'peer reviewed', and that anyone should be able to pick up your procedure/recipe and follow it exactly the same as you did, and get the same results.

Now, write your materials (including amounts):

_____ _____
_____ _____
_____ _____
_____ _____
_____ _____
_____ _____

What will you measure?

_____
_____

What kind of data will you collect? How often?

_____
_____

How many samples will you have?

_____
_____

How will you organize and present that data?

_____
_____
_____
_____

Remember the Experiment design we did at the beginning of the year? What are your variables?
Independent variable (the factor that you are testing/changing)

_____

Dependent variable (the factor you are measuring/observing)

_____

Controlled variables (the factors that you are keeping 'constant' or the same between all groups)

_____

Now, write your procedure – what you will need to do with those materials. Remember to make it as specific as possible. Number off each step.

Continue on another sheet if need be.

What do you predict your results to be, and why?

Now bring this to Ms Enders and have her check it over. Once your procedures are approved, you may start on the next assignment. We will conduct this activity next day.