Name:_____

Group Members:_____

Date:_____

Models Matter

Beginning Thoughts

What is matter?

_____

_____

_____

_____

Are water and sugar matter? Why or why not?

_____

_____

_____

Understanding Water and Sugar

Make 5 observations about the water (you may not use the word liquid). Feel free to pour the water between the beakers. Then circle the observations that would hold true for all liquids.

1._____

2._____

3._____

4._____

5._____

Make 5 observation about the sugar cube (you may not use the word solid). Then circle the observations that would hold true for all solids.

1._____

2._____

3._____

4._____

5._____

When you pour the water between the beakers do you pour the same amount each time? What do you think is the smallest amount of water that could be moved from one beaker to the other?

_____

_____

_____

If you smashed the sugar cube would all the pieces be the same size? What do you think is the smallest piece that could be removed from a sugar cube?

_____

_____

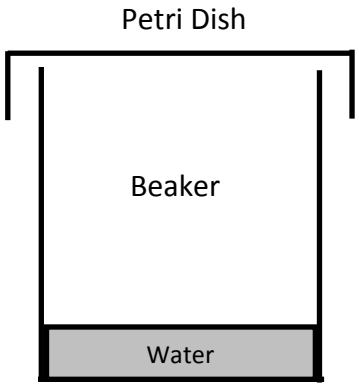
_____

Model 1

Generate models that can explain the observations that you made about liquids and solids using your choice of words, pictures, and/or numbers.

Liquid	**Solid**

*When you are finished combine your ideas with your group and put your combined model on a poster.



Place a Petri dish face down on the beaker with water (as shown in the picture). Then place on the hot plate and gently heat (95˚C). If the water starts to boil then turn down the hot plate. Record 3 observations about the beaker with the water .

1._____

_____

2._____

_____

3._____

_____

Record 3 observations about the beaker with the sugar cube the teacher is heating at the front on the room.

1._____

_____

2._____

_____

3._____

_____

Where did the water on the petri dish come from and how did it get there? What happened to the amount of water in the beaker?

_____

_____

_____

_____

_____

_____

_____

_____

Model 2

Revise your models of liquids and solids to incorporate your new findings using your choice of words, pictures, and/or numbers.

Liquid	**Solid**

*When you are finished combine your ideas with your group and put your combined model on a poster.

If you leave a beaker with water and another beaker with a sugar cube on the counter for one week, the water beaker will be empty and the sugar cube beaker will still have sugar. Apply your model to explain this.

_____

_____

_____

_____

_____

_____

Model 3

Generate a model of what you think will happen if you put the sugar cube into the water using your choice of words pictures, and/or numbers.

*When you are finished combine your ideas with your group and put your combined model on a poster.

What evidence could you collect to support your model?

_____

_____

_____

_____

How do you know that sugar is in the water?

_____

_____

What does this tell you about the relative size of sugar particles?

_____

_____

_____

_____

Match the following number to the correct description

7,000,000,000	Approximate mass of sugar that you used (g)
4	Approximate mass of water that you used (g)
20	Approximate number of people on earth
10,000,000,000,000,000,000,000	Approximate number of sugar particles in a sugar cube

Model 4

Draw a model of what will happen when sugar/water is heated with a lid over it using your choice of words, pictures, and/or numbers.

*When you are finished combine your ideas with your group and put your combined model on a poster.

What evidence could you collect to support your model?

_____

_____

_____

Test your model and revise your model if necessary

As a group, generate a general model of solids, liquids, and gases using your choice of words, pictures, and/or numbers. Record your model on a poster.