# Part I

Prediction: What happens when substances are mixed with water?

\_\_\_\_\_\_\_Students can give a range of answers. For example: They can mix. One substance can blend with the water. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Procedure: Use the hand lens and carefully observe each of the three labeled substances on your table. After your observations, select any one of the substances on your table, write its name, and then describe the substance.

The name of my substance is: \_They choose one. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Description of substance:

\_\_\_Based on their substance, students should describe the shape, size, and color of the individual particles. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Draw a model of the mixture you think will be formed when the substance you have selected is mixed with water (be sure to label your drawing):

(There is no right/wrong here. But students should draw and label the drawing.)

# Part II

Procedure: Mix each of the substances in water, record your observations in the table, and as a team, develop a claim to explain how substances behave when mixed with water. Write this claim below the table.

|  |  |  |  |
| --- | --- | --- | --- |
| Name of substance  added to water | Describe the mixture formed after shaking | Describe the mixture after leaving for 5 minutes | Name of mixture  (complete after class  discussion) |
| Salt | Particles disappear and are not seen; water is clear | Stays the same; particles are not seen;  Clear | Solution |
| Cornstarch | Cloudy; particles throughout and floating at top | Cloudy; particles settled at bottom | Suspension |
| Drink mix | Particle disappear; water transparent; color | Stays the same | Solution |

My team’s claim about how substances behave when mixed with water: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Range of students’ responses. For example, they might state: Some substances disappear in the mixture and in others the substances can be seen. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Part III

Reflect on the class discussion, read all the descriptions in the table, and then write a claim about how substances behave when mixed with water: \_\_Students should say that in some mixtures one substance (solute) dissolves in the water (solvent) and in another mixture one substance does not dissolve and settles. They may cite evidence from their lab, but word choice may vary. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Draw a model of the mixture formed when the substance you selected was mixed with water (be sure to label your drawing) and explain how this type of mixture was formed.

(Should be an accurate representation based on their substance in Part I. For example, if it was a solution, the drawing should reflect solute particles **not** visible. Basically, students should just draw water in the test tube. If it is a suspension, there should be particles dispersed and/or settled at the bottom of the test tube. Be sure students label the parts.)

Write your explanation for how this mixture was formed:

Explanation should include: The dissolving of solute into a solvent **OR** the spreading of particles throughout the mixture and/or settling on the bottom.

# Part IV (Homework)

Procedure:Ask your parents for permission and observe mixtures in your home. Make a list of at least 10 of the mixtures found in your home and classify them as either solution or suspension.