Name: _____

Date: _____

"Mixtures and Solutions"
Summative Assessment

1. Think about the physical properties of the materials in the mixture and how to use the tools in the bag. Record the process of separating a mixture below.

(Use a different tool each time.)

FIRST…
To separate out the _____from the mixture,
             (Name or describe a material)

I will use _____because
             (Name the tool)

_____.
(Describe one physical property of the material that will allow you to
separate it using this tool.)

NEXT…
To separate out the _____from the mixture,
             (Name or describe a material)

I will use _____because
             (Name the tool)

_____.
(Describe one physical property of the material that will allow you to
separate it using this tool.)

THEN…
To separate out the _____from the mixture,
             (Name or describe a material)

I will use _____because
             (Name the tool)

_____.
(Describe one physical property of the material that will allow you to
separate it using this tool.)

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2. If you want to find out if there is something dissolved in the liquid that you **could not see**, describe what you could do to separate it from the liquid. **Explain why this would work**.

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3. If you could weigh each of the separated materials from the mixture and then add the results together, which of the following would be true? **Circle your answer below.**

   a. The total mass of the separated materials would weigh **more** than the mass of the original mixture.

   b. The total mass of the separated materials would weigh **the same** as the mass of the original mixture.

   c. The total mass of the separated materials would weigh **less** than the mass of the original mixture.

   Explain your answer.

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4. Measure the mass of each 30 ml sample. Record your results on the chart below.

Mass of Solution A (Pure)	Mass of Solution B (Pure + 30 ml water)	Mass of Solution C (Pure + 150 ml water)

5. Why is the mass of Sample C less than Sample A?

_____

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6. A new Solution D (Pure + 180 ml of water) was made. Using the data, predict the mass of Solution D.

   a. The 30 ml sample of Solution D would **weigh more** than the samples of Solutions A, B, or C.

   b. The 30 ml sample of Solution D would **weigh less** than the samples of Solutions A, B, or C.

   Explain your answer.

_____

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Substances (One spoonful)	Completely dissolves in vegetable oil 10 ml	Completely dissolves in water 10 ml	Completely dissolves in rubbing alcohol 10 ml
Sugar	No	Yes	No
Salt	No	Yes	No
Citric Acid	No	Yes	Yes
Vinegar	No	Yes	Yes
Baking Soda	No	Yes	No
Flour	No	No	No
Detergent	No	Yes	No
Talc	No	No	No
Butter	No	No	No
Cola	No	Yes	Yes
Citric Acid	No	Yes	Yes
Vinegar	No	Yes	Yes

7. Using the data on the chart above, which liquid (vegetable oil, water, or rubbing alcohol) would be most useful in making solutions with the substances tested? **Explain your answer.**

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