



FOSS Measuring Matter Module

Class By Item Report

Posttest

September 11, 2012

Teacher: test1

Concept IA: Matter exists in three states.

Item: 4 Write a letter on the blank line next to each word on the left to math the properties

Response	Students	Description	Code
UWT	Hetty, Dixie, Daisy, Erma, Penrod, Janet, Urmila, Magnus, Ike, Sitembile, Wade, Erline, Janelle, Whitford, Rewa, Rogan, Ladd, Whit, Poppy, Duke	knows how to define the three states of matter.	2 (100%)
any other response		needs help defining the different states of matter.	1 (0%)
no attempt		needs help defining the different states of matter.	0 (0%)
		Missing Data	(0%)

NOTES:

Concept IB: Matter has physical properties that can be observed and quantified.

Item: 12 Which two properties of a chocolate candy bar will stay about the same after the

Response	Students	Description	Code
C	Hetty, Dixie, Penrod, Ike, Sitembile, Wade, Erline, Janelle, Whitford, Rewa, Ladd, Duke	knows that color and mass do not change when something melts.	2 (60%)
A, B, D or M	Daisy, Erma, Janet, Urmila, Magnus, Rogan, Whit, Poppy	needs help to understand what features change and which stay the same when something melts.	1 (40%)
no attempt		needs help to understand what features change and which stay the same when something melts.	0 (0%)
		Missing Data	(0%)

NOTES:



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Concept IIA: Mass is conserved.

Item: 3 A student adds 3 spoons of solid to 100 mL of water and stirs to mix.

Response	Students	Description	Code
D	Penrod, Ike, Wade, Erline, Whitford, Rewa, Ladd, Whit, Poppy	knows that the total mass of a solution is equal to the sum of its parts (the water and the solid dissolved in the water).	4 (45%)
B	Hetty, Dixie, Daisy, Urmila, Magnus, Janelle, Rogan, Duke	probably knows that the total mass of a solution is equal to the sum of its parts (water + solid), but made this calculation using only one spoon of solid rather than three.	3 (40%)
C	Erma, Janet, Sitembile	needs to remember to calculate the mass of the solutions by adding both the mass of the solid and the water.	2 (15%)
A or M		needs help calculating the mass of a solution.	1 (0%)
no attempt		needs help calculating the mass of a solution.	0 (0%)
		Missing Data	(0%)

NOTES:



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Concept IIB: Change of temperature associated with change of state.

Item: 5 What is the process that explains why water drops form on the mirror?

Response	Students	Description	Code
J	Hetty, Daisy, Erma, Penrod, Janet, Urmila, Ike, Sitembile, Wade, Erline, Janelle, Rogan, Ladd, Poppy, Duke	can identify the process of condensation.	3 (75%)
H	Dixie, Magnus, Whitford, Rewa, Whit	may be confusing the term condensation with evaporation.	2 (25%)
F, G or M		needs help identifying the process that explains water changing from gas to liquid.	1 (0%)
no attempt		needs help identifying the process that explains water changing from gas to liquid.	0 (0%)
		Missing Data	(0%)

NOTES:

Item: 7 In the spring, snow begins to melt. This change of state happens because_____.

Response	Students	Description	Code
A	Hetty, Dixie, Daisy, Erma, Penrod, Urmila, Ike, Wade, Erline, Janelle, Whitford, Rewa, Ladd, Whit, Poppy, Duke	knows that water (snow) melts when the air temperature is above 0°C.	3 (80%)
B	Janet, Magnus, Sitembile, Rogan	needs to remember that the temperature can be below freezing (0°C) even when the sun is shining.	2 (20%)
C, D or M		needs help with the idea that water (snow) melts when temperatures rise above 0°C.	1 (0%)
no attempt		needs help with the idea that water (snow) melts when temperatures rise above 0°C.	0 (0%)
		Missing Data	(0%)

NOTES:



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Item: 15 What do melting, freezing, evaporation, and condensation all have in common?

Response	Students	Description	Code
	Hetty, Ike, Sitembile, Janelle, Ladd, Duke	understands that change of state is associated with change of temperature and can describe two examples.	4 (30%)
	Dixie, Penrod, Wade, Erline, Whitford, Rewa	understands that change of state is associated with change of temperature, but needs to describe examples clearly.	3 (30%)
	Daisy, Erma, Janet, Urmila, Magnus, Rogan, Whit, Poppy	probably understands that change of state requires a change of temperature, but did not state that clearly.	2 (40%)
any other response		needs help with the idea that change of state is associated with change of temperature and needs to be able to give clear examples.	1 (0%)
no attempt		needs help with the idea that change of state is associated with change of temperature and needs to be able to give clear examples.	0 (0%)
		Missing Data	(0%)

NOTES:



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Concept IIC: During physical interactions, substances retain their original properties.

Item: 13 A student poured blue crystals (a solid) into a cup of water. The crystals seemed to

Response	Students	Description	Code
H	Hetty, Dixie, Daisy, Penrod, Janet, Ike, Sitembile, Wade, Erline, Janelle, Whitford, Rewa, Ladd, Duke	recognizes an example of dissolving.	2 (70%)
F, G, J or M	Erma, Urmila, Magnus, Rogan, Whit, Poppy	needs help to recognize an example of dissolving.	1 (30%)
no attempt		needs help to recognize an example of dissolving.	0 (0%)
		Missing Data	(0%)

NOTES:

Item: 14 Describe three things that can happen when two materials are mixed together.

Response	Students	Description	Code
	Hetty, Ike, Sitembile, Janelle, Duke	can describe three things that can happen when two materials are put together: a mixture, a solution, or a chemical reaction.	4 (25%)
	Dixie, Daisy, Erma, Penrod, Erline, Whitford, Rewa, Rogan, Ladd, Whit	can describe one or two things that can happen when two materials are put together, but needs help to describe the third thing that can happen.	3 (50%)
	Janet, Urmila, Magnus, Wade, Poppy	confuses what happens when materials are mixed with change of state.	2 (25%)
any other response		needs help to describe the three things that can happen when two materials are mixed.	1 (0%)
no attempt		needs help to describe the three things that can happen when two materials are mixed.	0 (0%)
		Missing Data	(0%)

NOTES:



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Teacher: test1

Concept IID: During chemical reactions, starting substances (reactants) change into new substances (products).

Item: 11 Any time you put two materials together, you have a _____.

Response	Students	Description	Code
G	Hetty, Dixie, Daisy, Erma, Penrod, Janet, Ike, Sitembile, Wade, Erline, Janelle, Whitford, Rewa, Ladd, Poppy, Duke	knows the definition of a mixture.	2 (80%)
F, H, J or M	Urmila, Magnus, Rogan, Whit	needs help with the definition of "mixture."	1 (20%)
no attempt		needs help with the definition of "mixture."	0 (0%)
		Missing Data	(0%)

NOTES:



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Teacher: test1

Concept IIID: Scientists collect, analyze, and interpret data.

Item: 1e The student wants to keep the water temperature the same all the time.

Response	Students	Description	Code
thermometer	Hetty, Dixie, Daisy, Erma, Penrod, Janet, Urmila, Magnus, Ike, Sitembile, Wade, Erline, Janelle, Whitford, Rewa, Rogan, Ladd, Whit, Duke	knows which tool is used to measure temperature.	2 (95%)
any other response	Poppy	needs help choosing the tool used to measure temperature.	1 (5%)
no attempt		needs help choosing the tool used to measure temperature.	0 (0%)
		Missing Data	(0%)

NOTES:

Item: 8 Look at the picture of the balance. The mass of the lemon must be _____.

Response	Students	Description	Code
F	Hetty, Dixie, Wade, Erline, Janelle, Rewa, Rogan, Ladd, Poppy, Duke	understands that the mass pieces on one side of a balance equal the mass of an object on the other side of the balance when the balance arm is level.	3 (50%)
G	Daisy, Penrod, Urmila, Magnus, Ike, Sitembile, Whit	probably understands how to measure mass, but in this case did not take into consideration that the balance arm is not level.	2 (35%)
H, J or M	Erma, Janet, Whitford	needs help with how to use a balance to measure mass.	1 (15%)
no attempt		needs help with how to use a balance to measure mass.	0 (0%)
		Missing Data	(0%)

NOTES:



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Teacher: test1

Item: 1h What metric unit should she use to record the mass?

Response	Students	Description	Code
gram		knows the unit used to measure mass of smaller objects.	3 (0%)
kilogram	Hetty, Dixie, Daisy, Magnus, Ike, Sitembile, Erline, Janelle, Whitford, Ladd, Whit, Duke	knows a kilogram is used to measure mass, but needs help with the unit used to measure smaller objects.	2 (60%)
any other response	Erma, Penrod, Janet, Urmila, Wade, Rewa, Rogan, Poppy	needs help choosing the metric unit used to measure the mass of smaller objects.	1 (40%)
no attempt		needs help choosing the metric unit used to measure the mass of smaller objects.	0 (0%)
		Missing Data	(0%)
NOTES:			

Item: 6 What is the volume of liquid shown in the graduated cylinder?

Response	Students	Description	Code
42 mL	Hetty, Janet, Sitembile, Wade, Janelle, Rewa, Rogan, Ladd, Poppy, Duke	can identify the volume of liquid in a graduated cylinder.	3 (50%)
42	Daisy, Erma, Urmila, Whitford	needs to remember to include the unit when recording measurements.	2 (20%)
any other response	Dixie, Penrod, Magnus, Ike, Erline, Whit	needs help to read and record the amount of liquid shown in a graduated cylinder.	1 (30%)
no attempt		needs help to read and record the amount of liquid shown in a graduated cylinder.	0 (0%)
		Missing Data	(0%)
NOTES:			



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Teacher: test1

Item: 2 How long is the hand span shown here?

Response	Students	Description	Code
10 cm	Hetty, Dixie, Ike, Janelle, Whitford, Ladd, Poppy, Duke	knows how to measure length when an object does not line up with zero on a meter tape.	4 (40%)
11 cm	Penrod, Sitembile, Erline, Rewa, Whit	needs help to measure length when an object does not line up with zero on a meter tape; appears to be counting marks rather than units.	3 (25%)
12 cm	Erma, Urmila	needs help to measure length when an object does not line up with zero on a meter tape; appears to be using the end boundary rather than counting units.	2 (10%)
any other response	Daisy, Janet, Magnus, Wade, Rogan	needs help to measure length when an object does not line up with zero on a meter tape.	1 (25%)
no attempt		needs help to measure length when an object does not line up with zero on a meter tape.	0 (0%)
		Missing Data	(0%)

NOTES:

Item: 1g What measuring tool should she use to measure the mass of the fish?

Response	Students	Description	Code
balance	Hetty, Dixie, Daisy, Penrod, Janet, Urmila, Magnus, Ike, Sitembile, Wade, Erline, Janelle, Whitford, Ladd, Whit, Duke	knows which tool is used to measure mass.	2 (80%)
any other response	Erma, Rewa, Rogan, Poppy	needs help choosing the tool used to measure mass.	1 (20%)
no attempt		needs help choosing the tool used to measure mass.	0 (0%)
		Missing Data	(0%)

NOTES:



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Teacher: test1

Item: 1b What metric unit should she use to record the measurement?

Response	Students	Description	Code
centimeter	Hetty, Dixie, Penrod, Magnus, Ike, Sitembile, Janelle, Rewa, Ladd, Duke	knows which metric unit is used to measure the length of objects less than a meter.	3 (50%)
meter	Daisy, Erline, Whitford	knows a meter is a unit for measuring length, but needs help with the unit used to measure objects less than a meter.	2 (15%)
any other response	Erma, Janet, Urmila, Wade, Rogan, Whit, Poppy	needs help choosing the metric unit used to measure smaller objects.	1 (35%)
no attempt		needs help choosing the metric unit used to measure smaller objects.	0 (0%)
		Missing Data	(0%)
NOTES:			

Item: 10a What is the temperature shown on the thermometer?

Response	Students	Description	Code
32°C	Hetty, Dixie, Penrod, Janet, Magnus, Ike, Wade, Rewa, Ladd, Poppy, Duke	can read a thermometer and record temperature accurately.	3 (55%)
32	Daisy, Sitembile, Erline, Janelle, Whitford	needs to remember to include appropriate units when recording temperature.	2 (25%)
any other response	Erma, Urmila, Rogan, Whit	needs help reading a thermometer and recording temperature.	1 (20%)
no attempt		needs help reading a thermometer and recording temperature.	0 (0%)
		Missing Data	(0%)
NOTES:			



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Teacher: test1

Item: 1f What metric unit should she use to record the temperature?

Response	Students	Description	Code
degrees C	Hetty, Daisy, Erma, Penrod, Ike, Sitembile, Wade, Janelle, Whitford, Rogan, Ladd, Duke	knows which unit scientists use to measure temperature.	3 (60%)
degrees F	Dixie, Erline, Rewa	knows the unit used to measure temperature in the U.S., but needs help with the unit used by scientists.	2 (15%)
any other response	Janet, Urmila, Magnus, Whit, Poppy	needs help choosing the unit scientists use to measure temperature.	1 (25%)
no attempt		needs help choosing the unit scientists use to measure temperature.	0 (0%)
		Missing Data	(0%)
NOTES:			

Item: 1d What metric unit should she use to record the volume?

Response	Students	Description	Code
milliliter	Hetty, Erma, Ike, Janelle, Rewa, Ladd	knows which metric unit is used to measure volume.	3 (30%)
liter	Dixie, Daisy, Penrod, Janet, Sitembile, Wade, Erline, Whitford, Duke	knows a liter is a unit for measuring volume, but needs help with the unit used to measure smaller volumes.	2 (45%)
any other response	Urmila, Magnus, Rogan, Whit, Poppy	needs help choosing the metric unit used to measure smaller volumes.	1 (25%)
no attempt		needs help choosing the metric unit used to measure smaller volumes.	0 (0%)
		Missing Data	(0%)
NOTES:			



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Teacher: test1

Item: 9 A spoon of baking soda is 5 g. A cup of vinegar is 50 g.

Response	Students	Description	Code
B	Hetty, Dixie, Erma, Penrod, Urmila, Magnus, Ike, Sitembile, Wade, Janelle, Whitford, Ladd, Poppy	understands a chemical reaction occurred in which gas bubbles were not captured, leading to an apparent loss of mass.	3 (65%)
A	Daisy, Erline, Rogan, Duke	probably understands conservation of mass, but in this case did not account for the mass of the gas that escaped.	2 (20%)
C or M	Janet, Rewa, Whit	needs help with the idea of conservation of mass when mixing two substances and what happens when a gas escapes.	1 (15%)
no attempt		needs help with the idea of conservation of mass when mixing two substances and what happens when a gas escapes.	0 (0%)
		Missing Data	(0%)

NOTES:

Item: 1a The student needs to find a table big enough to hold the fish tank.

Response	Students	Description	Code
meter tape	Hetty, Daisy, Janet, Urmila, Magnus, Ike, Sitembile, Wade, Erline, Janelle, Whitford, Rewa, Rogan, Ladd, Whit, Duke	knows which tool is used to measure length.	2 (80%)
any other response	Dixie, Erma, Penrod, Poppy	needs help choosing the measuring tool used to measure length.	1 (20%)
no attempt		needs help choosing the measuring tool used to measure length.	0 (0%)
		Missing Data	(0%)

NOTES:



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Item: 1c The student needs to add a small amount of liquid water conditioner.

Response	Students	Description	Code
graduated cylinder	Dixie, Janet, Urmila, Ike, Sitembile, Whitford, Rewa, Whit, Duke	knows which tool is used to measure a volume of liquid.	2 (45%)
any other response	Hetty, Daisy, Erma, Penrod, Magnus, Wade, Erline, Janelle, Rogan, Ladd, Poppy	needs help choosing a tool to measure the volume of a liquid.	1 (55%)
no attempt		needs help choosing a tool to measure the volume of a liquid.	0 (0%)
		Missing Data	(0%)

NOTES:

Item: 10b If a girl wants to go outside and play, should she wear a sweater?

Response	Students	Description	Code
no	Hetty, Dixie, Erma, Urmila, Ike, Sitembile, Wade, Erline, Janelle, Whitford, Rewa, Ladd, Poppy, Duke	can interpret temperatures in Celsius to decide whether or not to wear a jacket.	2 (70%)
any other response	Daisy, Penrod, Janet, Magnus, Rogan, Whit	needs help to interpret temperatures in Celsius and decide whether or not to wear a jacket.	1 (30%)
no response(X		needs help to interpret temperatures in Celsius and decide whether or not to wear a jacket.	0 (0%)
		Missing Data	(0%)

NOTES: