

Basis of Science Review

<p>Which of these two chemicals is more hazardous to your health? <i>Chloroform (higher #)</i></p> <p>Which one is more flammable? <i>Acetone</i></p>	<p style="text-align: center;">At-a-Glance Acetone</p> <p>Health — 1 Flammability — 3 Reactivity — 2 Exposure — 1 Storage — 3</p>	<p style="text-align: center;">At-a-Glance Chloroform</p> <p>Health — 2 Flammability — 0 Reactivity — 1 Exposure — 2 Storage — 2</p>	<p>First Aid Measures—Chloroform</p> <p><i>Call a physician, seek medical attention for further treatment, observation and support after first aid.</i></p> <p>Inhalation: Remove to fresh air at once. If breathing has stopped give artificial respiration immediately.</p> <p>Eye: Immediately flush with fresh water for 15 minutes.</p> <p>External: Wash continuously with fresh water for 15 minutes.</p> <p>Internal: Induce vomiting. After vomiting, give mixture of 2 Tbs. of activated charcoal mixed with one cup of water. Call a physician or poison control at once.</p>
<p>What should you wear in the lab to protect against chemical spills? <i>apron</i></p> <p>What should you wear to protect your eyes against splashing chemicals? <i>goggles</i></p> <p>What should you wear to protect your feet from chemicals and falling objects? <i>closed-toed shoes</i></p>			<p><i>Use the MSDS information above to answer the following:</i></p> <p>Which section tells you what to do if someone breathed in chloroform? <i>Inhalation (think "inhale")</i></p> <p>Which section if someone drinks it? <i>Internal</i></p>

Can this statement be supported by the scientific method? "I chocolate chip is the best ice cream flavor." *No*

Why? *It is an opinion.*

Use the Scientific Method to figure out if a substance is a liquid or solid. (The first step is done for you.)

Step 1: Observe: *the substance changes shape.*

Step 2: *hypoth: the substance is a liq.*

Step 3: *Exp.: Does it change volume? Data: No*

Step 4: *Concl: substance must be a liquid.*

Liquid	Color	Burns?	Volume	Reacts with Baking Soda?
A	Clear	<u>No</u>	35 mL	<u>Yes</u>
B	Clear	Yes	12 mL	No
C	Clear	<u>No</u>	46 mL	<u>Yes</u>
D	Clear	No	88 mL	No

Make a reasonable conclusion from the above data table. *liquid A+C are probably the same, (volume doesn't matter.)*

Object A

Object B

Remember: 100cm = 1m so 1cm = .01m

How many millimeters is object A? <i>18 mm</i>	How many millimeters is object B? <i>28 mm</i>
How many centimeters is object A? <i>1.8 cm</i>	How many centimeters is object B? <i>2.8 cm</i>
How many meters is object A? <i>.018 m</i>	How many meters is object B? <i>.028 m</i>

How much mass is shown above? *34.7 g* (don't forget units!)

How many mL of water is there in the graduated cylinder? *2.1 mL*

What is the curve of water called? *meniscus*

remember to read it at the bottom.

Which of the two cylinders above is more precise? *The right one.*

Why? *each mark = 0.1 mL. The left one, each mark = 2 mL.*

<p>How is a solid different from a liquid? liquids change shapes, solids don't</p>	<p>How is a liquid similar to (like) a gas? Both liquids + gases can change shapes [take the shape of whatever container their in]</p>	<p>The temperature at which a solid turns to liquid is called: melting point</p>
<p>How is a solid similar to (like) a liquid? Both retain (keep) their volume,</p>	<p>What causes a substance to change phase? add or take away energy. Do this by changing temperature.</p>	<p>The temperature at which a liquid turns to a gas is called: boiling pnt</p>
<p>How is a liquid different from a gas? Gases take the volume of their container. (Think of tires: you can compress, <u>force</u> air into the tire.)</p>	<p>When a substance changes phase, is this a <u>physical</u> or chemical change? solid water (ice) is still H₂O → the same chemical substance.</p>	<p>The temperature at which a gas turns to liquid: condensation point</p>
		<p>The temperature at which a liquid turns to a solid: freezing point</p>
		<p>When a solid turns straight to a gas is called: sublimation.</p>
		<p>At what temperature does water melt? 0°C (32°F)</p>
		<p>At what temperature does water boil? 100°C (212°F)</p>

<p>Mixture (M) versus Substance (S) (non-mixture):</p> <p>Salt Water <u>M</u> Chicken Soup <u>M</u></p> <p>Water <u>S</u> Salt <u>S</u></p> <p>Silver <u>S</u> Chex Mix <u>M</u></p>	<p>1. Substance or non-mixture <u>f</u></p> <p>2. Mixture <u>a</u></p> <p>3. Heterogeneous Mixture <u>b</u></p> <p>4. Matter <u>g</u></p> <p>5. Element <u>d</u></p> <p>6. Homogeneous Mixture <u>c</u></p> <p>7. Compound <u>e</u></p>	<p>a. Made up of two types of matter that can be physically separated.</p> <p>b. Two samples might not be the same.</p> <p>c. Two samples will have the same makeup.</p> <p>d. Has only one kind of atom in the sample.</p> <p>e. Contains two kinds of atoms that <i>cannot</i> be physically separated.</p> <p>f. Cannot be separated by physical means.</p> <p>g. A classification of anything that has mass and takes up space.</p>
<p>Homogenous (Ho) versus Heterogenous (He)</p> <p>Salt Water <u>Ho</u> Chicken Soup <u>He</u></p> <p>Tomato Soup <u>Ho</u> Plain Jello <u>Ho</u></p> <p>Jello with Fruit <u>He</u> Chex Mix <u>He</u></p>		
<p>What do we call things that can be felt and seen, but we cannot touch and has no mass?</p> <p><u>energy</u></p>	<p>What do we call things that can be felt and seen, but we cannot touch and has no mass?</p> <p><u>energy (sorry - repeat)</u></p>	

<p>Draw the metric prefixes chart here:</p> <p>1,000,000 micro</p> <p>M X X K X X ^M X cm X X ^μ</p> <p>1,000,000</p>	<p>Convert the following</p> <p>3.2 kilometers = <u>3,200</u> meters</p> <p>0.23 centimeters = <u>2,300</u> micrometers</p> <p>0.12 liter = <u>120</u> milliliters</p> <p>2500 milliliters = <u>2.5</u> liters</p> <p>4500 grams = <u>4.5</u> kilograms</p> <p>9 kilograms = <u>9,000</u> grams</p> <p>54 megaliters = <u>5,400,000,000</u> centiliters</p>
<p>What is the correct order <u>shortest to longest</u>?</p> <p>Kilogram milligram Megagram gram centimeter microgram</p> <p><u>micro - milli - centi - gram kilo - Mega -</u></p>	<p>How Big Are They Really?</p> <p>A centimeter is the width of: <u>pinky</u></p> <p>The size of a liter is: <u>bigger than a quart</u></p> <p>A meter is how many feet? <u>3.3ft</u></p> <p>A gram is about: <u>a dollar bill</u></p> <p>A millimeter is the width of: <u>finger nail</u></p>
<p>Which is bigger?</p> <p><u>Mega</u> or kilo-?</p> <p><u>Centi</u> or milli-?</p> <p><u>Micro</u> or milli-?</p> <p><u>Centi</u> or micro-?</p> <p><u>Kilograms</u> or grams?</p>	