KEY

3

Review

(7-2-13 to 7-2-18, 7-2-19, 7-2-20, 7-2-21)

cientific Method

1) Write the letter of the correct word on the blank beside the word.

a) independent (manipulated) variable
b) fair test
c) theory
d) variable
e) dependent (responding) variable
f) controlled variable

c An explanation based on gathered observations

f Variable that is kept the same to ensure a fair test

a Variable that you change on purpose (Science Pirates called this the CAUSE)

e Variable that changes because of the variable you changed on purpose

b Keeping all variables constant and only changing one variable so you can observe its effect

d Anything that can affect the outcome of an experiment

Simran

2) In an experiment about which brand of pop tastes better, Nikki blindfolded students and asked them to taste each sample of pop. To keep it a fair test, she ensured that each pop sample had the same amount of pop, the same type of glass and the same temperature.

The independent variable was brand of pop (changed on purpose)
The dependent variable preferred taste (changed because of what you changed on purpose)
One controlled variable was same temperature for all samples of pop.

3) List 3 criteria you should check to make sure you have designed a fair test.

a) Only 1 variable changed at a time
example: only change the brand of pop (not the brand and the temperature)
b) Keep all other variables constant (controlled)
example: to be fair, keep the amount of pop + the temperature the same
c) Tests are repeated. Check many people's preferred tastes of pop.

Ola

Classifying Matter (7-2-13,14,15)

1) Classify each numbered description under the appropriate headings in the chart. Certain letters can be classified under more than one heading.
Highlight in YELLOW each homogeneous mixture that is further classified as a solution.
The first blank is for you to write reminders to yourself.

Nikki	Sean	Tadgh	Jada
Pure substance	**Heterogeneous Mixture**	**Homogeneous Mixture**	**A form of energy (not matter)**
			
a	e k	d (if all crystals are dissolved) k	g
b	i		h
c	p	q (if shaken so all parts are evenly spread)	f
	s		x
v) water	v) clay in water		
m	t	w (homogenized milk)	
	u		
	s	j	
	q) if there is a layer of oil, for example		

a) nickel b) copper c) gold d) Kool-Aid drink
e) dry soup mix f) heat g) nuclear h) mechanical
i) a combination of two or more substances that are not dissolved together
j) one substance dissolves into another ← called a solution (all solutions are homogeneous,
k) individual properties of each substance are kept even though they are mixed
l) tiny bits that make up matter
m) material containing only one kind of particle
n) one substance dissolved in another
o) sugar water p) rice and styrofoam q) salad dressing
r) iodine in alcohol s) chicken noodle soup t) trail mix
u) salt and pepper v) clay in water w) homogenized milk
v) water w) orange juice with pulp in it
w) trail mix (a mix of raisins, peanuts, etc)
x) heat (thermal)

~~This one is called~~ a TINCTURE (because the solvent is alcohol)

Check this one can be both - it depends if it has been shaken or not!

Why is k) under both categories?

In sugar water (a solution) (a homogeneous mixture) the sugar is still sweet and the water is still water (the properties of the substances are the same even though they are made into a homogeneous solution). In sugar + pepper mixtures (for example
salt is still salt and the pepper still makes us sneeze (heterogeneous mixtu

2) Fill in the concept map with the following words/phrases

we can see separate parts, we cannot see separate parts, mixtures, homogeneous, heterogeneous, pure substance

ALL MATTER IN THE UNIVERSE

- mixture
  - heterogeneous
    - Can see separate parts "not evenly mixed"
  - homogeneous
    - can't see separate parts "evenly mixed"
- pure substance
  - Example: water

Sean

Separating Mixtures (7-2-18)

1) Name 3 (physical) properties of matter that can be used to separate a mixture:

State (we could separate a solid and a liquid by flotation or sifting)

density (we could separate something less dense from something more dense by floating them in water)

Color

Maddie

2) Name a PROCESS and a piece of APPARATUS (tool/equipment) would you most likely use to separate a mixture based on the following properties:

	Process (method)	Tools (apparatus)
our Ex. blue chips + red chips	observing with the eyes	eyes, fingers
ss Ex. balloon + ball	measuring	scale (measure the mass of each item)
e Ex: solid water + liquid water	flotation or selving	liquid, container or selve/sifter/colander
lting point Ex: dry ice + ice cube	heating	heat source like a hot plate
sity Ex: styrofoam + staplers	flotation	liquid, container
ce Ex: pebbles + sand	seiving or sifting	seive /sifter/colander
allic/nonmetallic Ex: paper clips + salt	magnetism	magnet

Jatin

Parts of A Solution (7-2-16)

(1) Use these words to fill in the blanks.

solute solvent solution two homogeneous heterogeneous

All solutions are made of ___two___ parts. They are ___Solute and solvent___
They can be classified as ___homogeneous___ mixtures.
The ___Solute___ is the substance that is dissolved in solvent. The ___Solvent___ is a substance that dissolves a solute into solution

Rame

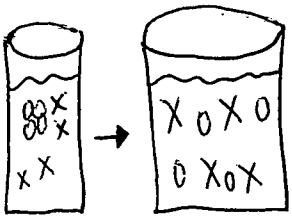
(2) Identify the solute and solvent in each of the following solutions:

	Solute	Solvent
a) Sugar water	Sugar	water
b) Pop with carbon dioxide bubbles in it	CO_2	water
c) Styrofoam in nail polish remover	Styrofoam	polish remover

Liam

Using the Particle Model to Explain Dissolving (7-2-17)

(1) Simran dissolved some iced tea crystals in water. The solute was ___iced tea crystals___ The solvent was ___water___. Describe what happened to the particles of iced tea and to the particles of water. Include the phrase FORCES OF ATTRACTION. X = water o = sugar
Include a properly labelled sketch to show what happened to the solute and the solvent.



The sugar particles are attracted to each other
The water particles attract the sugar particles as well.
Sugar "dissolves" because the water particles have a stronger force of attraction on the sugar particles and can pull them apart!

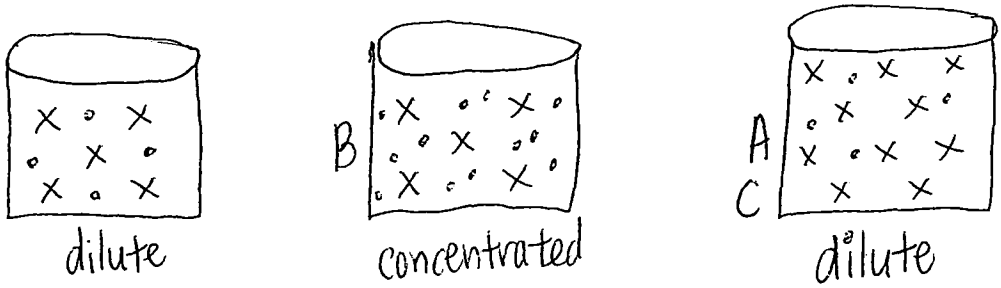
Rame

(2) Why is water is called the "universal solvent"? (see Chapter 6 if you did not get this the first time we did it) Water is the universal solvent because it dissolves many solutes.

Concentration of Solutions (7-2-22)

X = water particles ● = solute particles

el the following diagrams of solutions as concentrated solution or dilute solution.



bel the diagrams with the letter of the following words/phrases:

A) a solution that has a lot more solvent than solute
B) solution that has lots of solute
C) a solution that has a lot more solvent than solute

Gabe

Concentration of Solutions (7-2-21)

1) Beside each description, write the word unsaturated, saturated OR supersaturated.

uper saturated The solution that contains more solute than it can usually hold at a certain temperature.

aturated A crystal added to the solution will dissolve.

aturated The solution has dissolved as much solute as it can at that temperature.

turated A crystal added to the solution will not dissolve.

persaturated If a crystal is added to the solution, the extra solute immediately crystallizes.

Liam

2) Use the data tables in your TEXT p.148-150 to help you classify these solutions as unsaturated, saturated or supersaturated:

Bailey + Tito

) If Bailey stirred sugar into her hot chocolate until she saw sugar at the bottom of her cup, would her solution be saturated, unsaturated or supersaturated? solution is saturated

) If Meixuan opened a successful carbonated beverage business (pop), and dissolved as MUCH carbon dioxide as she could into her drinks, would she be making a saturated, unsaturated or supersaturated solution? Saturated

If Jada made a solution out of 30 g of alum in 100g of water, did she make a CONCENTRATED solution or a DILUTE solution? Concentrated (strong) Did she make a supersaturated solution? no, she didn't heat it!

d) Sean made a solution of 35.7 g of salt in 100 g of water. Was it unsaturated, saturated or supersaturated? Saturated (it is holding as much solute as it can)

e) Who would have made the most concentrated solution if Jatin dissolved 6.9 g of baking soda in 50 g of water and Mason dissolved 6.9 g of baking soda in 100g of water? Jatin Whose solution would be unsaturated? neither one saturated? Mason supersaturated? none, they did not heat it to force it to hold more than 6.9g/100g of water

f) The amount of solute (in grams) that a solvent (in grams) can hold is called the Solubility (fill in a word)

Bailey (cont.) +

Using the Particle Model to Explain Rate of Dissolving (7-2-20)

1) Use the particle model to describe why stirring (AGITATION) speeds up the RATE of dissolving.

Agitation speeds up the rate of dissolving because the particles bump into eachother more often. This means faster dissolving because the more particles bump into eachother, the more solute gets dissolved. Agitation provides energy to the solvent particles.

Reesa

2) Use the particle model to describe why increasing surface area speeds up the rate of dissolving.

Increasing the surface area of the solute allows the solvent to have more surface to pull solute particles apart. The more surface that is exposed to the solvent, the more dissolving can be done.

Taylor

3) Use the particle model to describe why adding heat energy speeds up the rate of dissolving.

Add heat energy allows the solvent particles to move more quickly. This means dissolving is faster because solvent particles bump into solute particles more often. Heat energy is added to the solvent particles.

Michael