

2019/2020 copy

Science Eight

Unit One:

Mix & Flow of Matter

Name:

Date Received:

Date In:

Unit A: Mix and Flow of Matter

Outcome #1- Investigate and describe fluids used in technological devices and everyday materials

Essential Outcomes (Ideas I must understand)	My Understanding
<ul style="list-style-type: none"> investigate and identify examples of fluids in household materials, technological devices, living things and natural environments 	1 2 3 4
<ul style="list-style-type: none"> explain the Workplace Hazardous Materials Information System (WHMIS) symbols for labeling substances; and describe the safety precautions to follow when handling, storing and disposing of substances at home and in the laboratory 	1 2 3 4
<ul style="list-style-type: none"> describe examples in which materials are prepared as fluids in order to facilitate transport, processing or use (<i>e.g., converting mineral ores to liquids or slurries to facilitate transport, use of paint solvents to facilitate mixing and application of pigments, use of soapy water to carry away unwanted particles of material</i>) 	1 2 3 4
<ul style="list-style-type: none"> identify properties of fluids that are important in their selection and use (<i>e.g., lubricant properties of oils, compressibility of gases used in tires</i>) 	1 2 3 4

Outcome # 2- Investigate and describe the composition of fluids, and interpret the behavior of materials in solution

Essential Outcomes (Ideas I must understand)	My Understanding
<ul style="list-style-type: none"> distinguish among pure substances, mixtures and solutions, using common examples (<i>e.g., identify examples found in households</i>) 	1 2 3 4
<ul style="list-style-type: none"> investigate the solubility of different materials, and describe their concentration (<i>e.g., describe concentration in grams of solute per 100 mL of solution</i>) 	1 2 3 4
<ul style="list-style-type: none"> investigate and identify factors that affect solubility and the rate of dissolving a solute in a solvent (<i>e.g., identify the effect of temperature on solubility; identify the effect of particle size and agitation on rate of dissolving</i>) 	1 2 3 4
<ul style="list-style-type: none"> relate the properties of mixtures and solutions to the particle model of matter (<i>e.g., recognize that the attraction between particles of solute and particles of solvent helps keep materials in solution</i>) 	1 2 3 4

Outcome # 3- Investigate and compare the properties of gases and liquids; and relate variations in their viscosity, density, buoyancy and compressibility to the particle model of matter

Essential Outcomes (Ideas I must understand)	My Understanding			
<ul style="list-style-type: none"> investigate and compare fluids, based on their viscosity and flow rate, and describe the effects of temperature change on liquid flow 	1	2	3	4
<ul style="list-style-type: none"> observe the mass and volume of a liquid, and calculate its density using the formula $d = m/v$ [Note: This outcome does not require students to perform formula manipulations or solve for unknown terms other than the density.] 	1	2	3	4
<ul style="list-style-type: none"> compare densities of materials; and explain differences in the density of solids, liquids and gases, using the particle model of matter 	1	2	3	4
<ul style="list-style-type: none"> describe methods of altering the density of a fluid, and identify and interpret related practical applications (e.g., describe changes in buoyancy resulting from increasing the concentration of salt in water; observe and describe density currents) 	1	2	3	4
<ul style="list-style-type: none"> describe pressure as a force per unit area, and describe applications of pressure in fluids and everyday situations (e.g., describe pressure exerted by water in hoses, air in tires, carbon dioxide in fire extinguishers; explain the effects of flat heels and stiletto heels, using the concept of pressure) 	1	2	3	4
<ul style="list-style-type: none"> investigate and compare the compressibility of liquids and gases 	1	2	3	4

Outcome # 4- Identify, interpret and apply technologies based on properties of fluids

Essential Outcomes (Ideas I must understand)	My Understanding			
<ul style="list-style-type: none"> describe technologies based on the solubility of materials (e.g., mining salt or potash by dissolving) 	1	2	3	4
<ul style="list-style-type: none"> describe and interpret technologies based on flow rate and viscosity (e.g., heavy oil extraction from tar sands, development of motor oils for different seasons, ketchup/mustard squeeze bottles) 	1	2	3	4
<ul style="list-style-type: none"> describe and interpret technologies for moving fluids from one place to another (e.g., intravenous lines, pumps and valves, oil and gas pipelines) 	1	2	3	4
<ul style="list-style-type: none"> construct a device that uses the transfer of fluids to apply a force or to control motion (e.g., construct a model hydraulic lift; construct a submersible that can be made to sink or float by transfer of a fluid; construct a model of a pump) 	1	2	3	4

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TOPIC 2
REINFORCEMENT

BLM 1-7

Understanding WHMIS Symbols

Goal • Review your understanding of WHMIS symbols and their purpose.

What to Do

Answer the following questions in the space provided.

1. Answer each question with a full sentence.

(a) What does the acronym WHMIS stand for?

(b) Why is it important for everyone in the world to adopt the same method for warning people about hazardous chemicals?

2. Write the meaning of each WHMIS symbol.

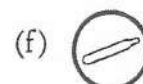












Name: _____

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Science Eight
Module One
Mix and Flow of Matter WS 1

1. There are three different states of matter. Describe each below:

2. Draw out the example of the three states of matter as seen on page 7 of your textbook. Be sure to label each diagram.

3. Read pages 8-10 of your textbook. Under each of the following heading, write down some of the important/unique characteristics of each state of matter:

Solids:

Name: _____

Date: _____

Liquids:

Gasses:

4. There are five keys to understanding the particle model of matter. Write these five keys below.

Name: _____

Date: _____

8. Use the particle model to explain why ice cubes form in your freezer.

9. As you know, water can change from ice – water – gas. Using the particle model, explain how this happens.

DATE:

NAME:

CLASS:

TOPIC 1
REINFORCEMENT

The Particle Model

BLM 1-1

Goal • Demonstrate your understanding of the particle model and changes of state.

What to Do

Answer the following questions in the space provided.

1. Turn to page 32 of your textbook. Read the five points that summarize the particle model of matter. Use the points to complete the statements below.

(a) Solids have a definite shape because

(b) Fluids (liquids and gases) flow because

(c) Gases do not have a definite shape because

2. You have learned about the following changes of state:

- sublimation (solid to gas, or gas to solid)
- condensation
- vaporization
- melting (fusion)
- freezing (solidification)

Identify each change of state described below.

(a) Ice is left out on a counter. _____

(b) Frost forms on a window on a cold day. _____

(c) Water is left in a freezer. _____

(d) Clothes are left outdoors to dry. _____

(e) Dry ice is used to create fogs. _____

(f) A bathroom mirror fogs up after a shower. _____

(g) A pond gets shallower at the end of a long hot summer. _____

(h) Your hair was wet when you left the house, but it dries by the time you get to school. _____

Name: _____

Date: _____

- b) Which class or classes of mixtures cannot be separated by using a paper filter? Explain your answer by using the particle model.

7. Read page 17, in regards to dissolving:

In your own words, explain why sugar dissolves when placed into a glass of hot water.

8. When salt is mined, water is added to salt deposits deep underground. The addition of water makes a saltwater solution called brine. Give a reason why water is added to the underground salt deposits.

Name: _____

Date: _____

9. Which of the following factors affects the solubility of a substance?

- a) the amount of stirring
- b) the surface area of the solvent
- c) temperature
- d) shaking

Use the following information to answer the remaining questions:

A group of students tested the solubility of solute X. The students found that they could dissolve a maximum of 50 g of solute x in 25 mL of 20°C water. When they repeated the experiment using water with a temperature of 0°C, they found that they could only dissolve a maximum of 8g of solute x in 25 mL of water.

10. Determine the solubility of solute x at 0°C. Express the solubility in g/100 mL.

11. Determine the solubility of solute x at 20°C. Express the solubility in g/100mL

Name: _____

Date: _____

12. For this question, refer to table 1.2 on page 20 of the textbook. Circle the letter of the best response:

The identity of solute x is most likely:

- a) Alum
 - b) Sugar
 - c) Baking soda
 - d) Copper (II) sulfate
13. What effect does decreasing the temperature of the water have on the solubility of solute x? Explain this effect using the particle model of matter. You will receive one mark for describing the effect and one mark for giving a factor responsible for this effect.

Heterogeneous or Homogeneous?

Goal • Review your understanding of heterogeneous and homogeneous mixtures.

What to Do

Answer the following questions in the space provided.

1. Identify each mixture as homogenous or heterogeneous.

- (a) dirt _____
- (b) sterling silver bracelet _____
- (c) sample of pond water _____
- (d) recycled paper _____

2. Answer each question with a full sentence.

- (a) To the unaided eye, a mixture appears to be a white liquid with no visible substances floating around. Can this mixture be classified as homogeneous? Explain why or why not.

- (b) Air can be classified as heterogeneous or homogenous. Explain why this statement is true.

3. Read the descriptions below. In the space provided, indicate whether each mixture is a mechanical mixture (M) or a solution (S).

- ___ (a) The different substances in this mixture can be distinguished from each other with the unaided eye or a magnifying glass.
- ___ (b) The substances in this mixture cannot be separated by filtering.
- ___ (c) When this mixture is left to stand undisturbed, the substances do not separate by floating to the top or settling to the bottom.
- ___ (d) This mixture appears cloudy or opaque. You cannot see through it clearly.

Name: _____

Date: _____

Science Eight
Module One
Mix and Flow of Matter WS 3

1. Define the term "solute":

2. Define the term "solvent":

3. Explain the difference between a "saturated solution" and an "unsaturated solution".

4. Imagine a glass of kool-aid. This is a SATURATED SOLUTION. What would happen if you added on more pack of kool-aid crystals?

Name: _____

Date: _____

5. The Dead Sea is much saltier than ocean water. How could you determine if water from the Dead Sea is saturated or unsaturated?

6. Define the term "insoluble":

7. Read page 24, and explain why water and oils do not mix together.

DATE:

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TOPIC 2
SKILL BUILDER

Solubility and Concentration

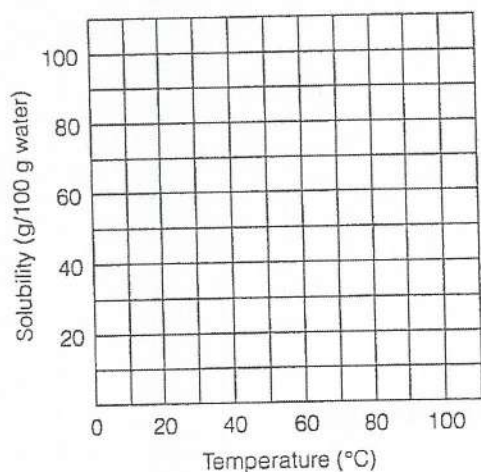
BLM 1-4

Goal • Practise your graphing skills, and demonstrate your understanding of solubility.

What to Do

Answer the following questions in the space provided.

1. Make a line graph using the data in the table below. Give your graph a title. Provide a legend to identify the three substances represented by the three lines.



Legend

<input type="checkbox"/>	_____
<input type="circle"/>	_____
<input type="radio"/>	_____

Substance	Solubility (g/100 g water) at					
	0°C	20°C	40°C	60°C	80°C	100°C
copper sulfate	15	20	30	40	55	79
lithium sulfate	35	35	33	31	30	29
ammonium chloride	30	38	45	55	65	78

2. Answer the following questions using the data in the graph and the table.

(a) Which substance has the greatest solubility at 0°C? _____

(b) Which substance has the greatest solubility at 100°C? _____

(c) Which substance decreases in solubility as its temperature increases? _____

(d) Which solutions are saturated at 60°C, with 40 g dissolved in 100 g of water?

(e) Which solution is the least saturated at 0°C, with only 2 g dissolved?

Goal • Show your understanding of the scientific terms you learned in Topics 1-3.

What to Do

Match each description in column A with the correct term in column B. Place the letter for the term on the line beside the description.

Mixing and Changing

A	B
___ 1. air	(a) sublimation
___ 2. change of state from a gas to a liquid	(b) fluid
___ 3. a lot of solute	(c) soluble
___ 4. change of state from a solid to a gas	(d) supersaturated
___ 5. term that means "able to dissolve"	(e) condensation
___ 6. two or more types of particles that do not mix uniformly when put together	(f) pure substance
___ 7. substance with properties that are blended	(g) mechanical mixture
___ 8. tiny parts that make up matter	(h) particles
___ 9. substance that has only one type of particle	(i) model
___ 10. something that is useful for explaining observations	(j) solution
	(k) insoluble
	(l) solute

Extension: Separating Mixtures

Match the substance in column A with the process that can be used for its separation in column B.

A	B
___ 11. petroleum	(m) chromatography
___ 12. green ink	(n) filtration
___ 13. suspension	(o) magnetism
___ 14. iron particles	(p) fractional distillation
___ 15. gold particles	(q) density shaking
	(r) agitation

Name: _____

Date: _____

Science Eight
Module One
Mix and Flow of Matter WS 4

1. Define the term "viscosity":

2. Which has a faster FLOW RATE... warm syrup or cold syrup?

Do you think viscosity and flow rate are related to each other? EXPLAIN...

Read page 48 to answer the following questions:

3. Complete the following statement:

*The viscosity of a liquid _____ as it is _____, and
_____ as it is _____.*

4. In regards to the first paragraph on page 48, how does FRICTION affect the viscosity of liquids?

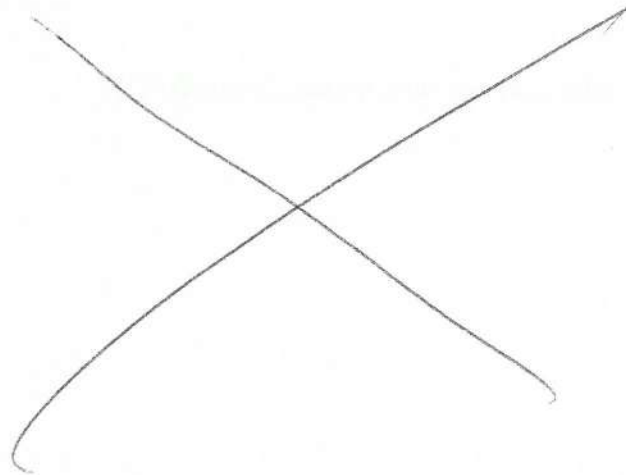
Name: _____

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5. In regards to the second paragraph on page 48, how do ATTRACTIVE FORCES affect the viscosity of liquids?

6. How can you test the viscosity of a liquid? (See Mr. Blum for help)

7. Asphalt is the black, sticky material that binds gravel in the pavement that covers streets and highways. Explain why paving is almost always done during the summer months?



Continue to the next page for the last part of this assignment

Name: _____

Date: _____

8. Use the following table to answer the following questions...

Substance	Flow Rate 10°C	Flow Rate 25°C	Flow Rate at 50°C
1	2.0	4.0	9.0
2	13.0	13.0	14.0
3	0.0	0.0	2.0
4	5.0	8.0	13.0
5	0.0	1.0	4.0

- Make a bar graph for the data in the table, with “flow rate” along the vertical axis, and “Temperature” along the horizontal axis. Attach graph(s) to this assignment.
- Which substance is the most viscous?
- Which substance is the least viscous?
- Which substance is a solid at room temperature (about 20°C)?

DATE:

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TOPIC 4
REINFORCEMENT

Viscosity at Work

BLM 1-11

Goal • Explore how viscosity can be used in various occupations.

What to Do *Pick 3 occupations*

Many occupations use of the principles you have studied in this topic. Look at the occupations in the table below. For each occupation, think of one way that a knowledge of viscosity could be used. You may want to research these occupations or ask people who work in them.

Occupation	How knowledge of viscosity is applied
candy maker	
glass blower	
beekeeper	
baker	
motor mechanic	
maple syrup manufacturer	
other	

DATE:

NAME:

CLASS:

TOPIC 4
ASSESSMENT

BLM 1-13

Viscosity Quiz

Goal • Show your understanding of concepts you have learned in Topic 4.

What to Do

Carefully read the instructions before answering each set of questions.

Matching

Match each description in column A with the correct term in column B. Place the letter for the term on the line beside the description.

A	B
___ 1. what happens to the viscosity of a liquid as it is heated	(a) superfluid
___ 2. substance that has no internal resistance to flow	(b) change of state
___ 3. what happens to the viscosity of a liquid as it is cooled	(c) internal friction
___ 4. substance that reduces friction between moving parts	(d) flow rate
___ 5. change of temperature that causes the viscosity of a gas to increase	(e) fluid
___ 6. change of temperature that causes the viscosity of a gas to decrease	(f) lubricant
___ 7. resistance to flow	(g) liquid
___ 8. how fast a fluid "runs"	(h) increases
___ 9. any substance that flows	(i) decreases
	(j) heating
	(k) cooling

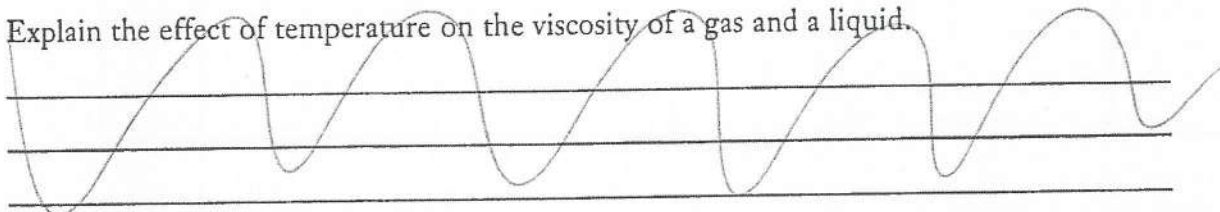
Short answers

Answer the following questions in the space provided.

10. List two fluids that have a high viscosity. _____

11. List two fluids that have a low viscosity. _____

12. Explain the effect of temperature on the viscosity of a gas and a liquid.



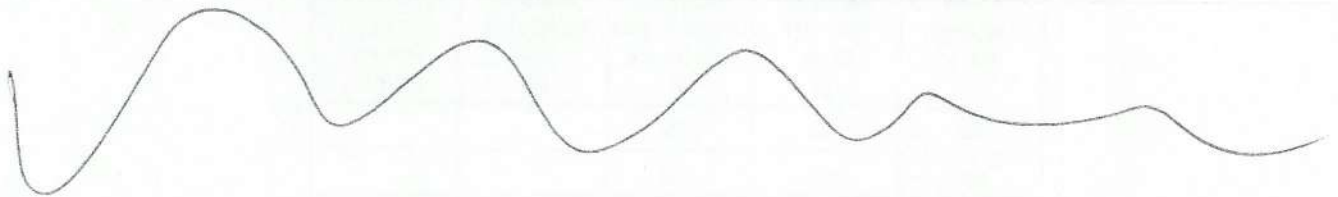
Name: _____

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Science Eight
Module One
Mix and Flow of Matter WS 5

1. Define Density:

2. Define Density in your own words and provide a common example.



3. Read Page 50-51 of your text:

• Which has a higher density, water or foot?

• Explain why you cannot walk on water, as described in your textbook

• In which of the following states are particles more attracted to each other, liquids or solids?

• If you try to run through waist high water, you will become tired quickly. Using information from your textbook, why is it more difficult to run through a liquid as compared to air?

Name: _____

Date: _____

Investigation 1H Determining Density

Refer to the "Inquiry Investigation" on pages 54 to 56 of the textbook. Read all of the investigation. You will need graph paper to complete this investigation.

Instead of physically doing the investigation, you will be using the data supplied in the following tables.

Substance Tested: Water				
A	B	C	D	E
Volume (mL)	Mass of Cylinder Only (g)	Mass of Cylinder and Substance (g)	Mass of Substance Only (g)	Ratio of Mass to Volume (g/mL)
50	105	155		
100	105	205		
150	105	255		
200	105	305		
250	105	355		

Substance Tested: Corn Oil				
A	B	C	D	E
Volume (mL)	Mass of Cylinder Only (g)	Mass of Cylinder and Substance (g)	Mass of Substance Only (g)	Ratio of Mass to Volume (g/mL)
50	105	151		
100	105	197		
150	105	243		
200	105	289		
250	105	335		

Name: _____

Date: _____

Substance Tested: Glycerol				
A	B	C	D	E
Volume (mL)	Mass of Cylinder Only (g)	Mass of Cylinder and Substance (g)	Mass of Substance Only (g)	Ratio of Mass to Volume (g/mL)
50	105	168		
100	105	231		
150	105	294		
200	105	357		
250	105	420		

Substance Tested: Molasses				
A	B	C	D	E
Volume (mL)	Mass of Cylinder Only (g)	Mass of Cylinder and Substance (g)	Mass of Substance Only (g)	Ratio of Mass to Volume (g/mL)
50	105	180		
100	105	255		
150	105	330		
200	105	405		
250	105	480		

Substance Tested: Sand				
A	B	C	D	E
Volume (mL)	Mass of Cylinder Only (g)	Mass of Cylinder and Substance (g)	Mass of Substance Only (g)	Ratio of Mass to Volume (g/mL)
50	105	195		
100	105	285		
150	105	375		
200	105	465		
250	105	550		

Name: _____

Date: _____

4. What is the formula for density?

5. An object has a mass of 98 grams, and occupies a volume of 674 mL. Determine the density of the object.

6. See Mr. Blum to carry some online experiments in regards to density.

7. Circle the letter of the best response.

Based on the particle model of matter, which answer best describes the densest substance?

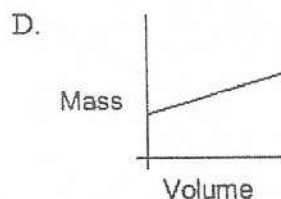
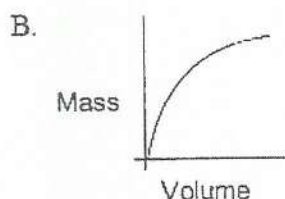
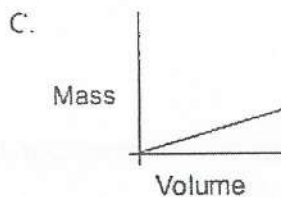
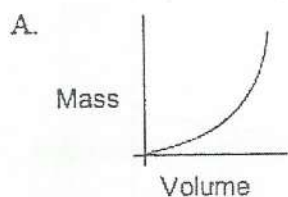
- A. There are 100 particles in a volume of 2 cm^3 .
- B. There are 1000 particles in a volume of 2 cm^3 .
- C. There are 100 particles in a volume of 1 cm^3 .
- D. There are 1000 particles in a volume of 1 cm^3 .

Name: _____

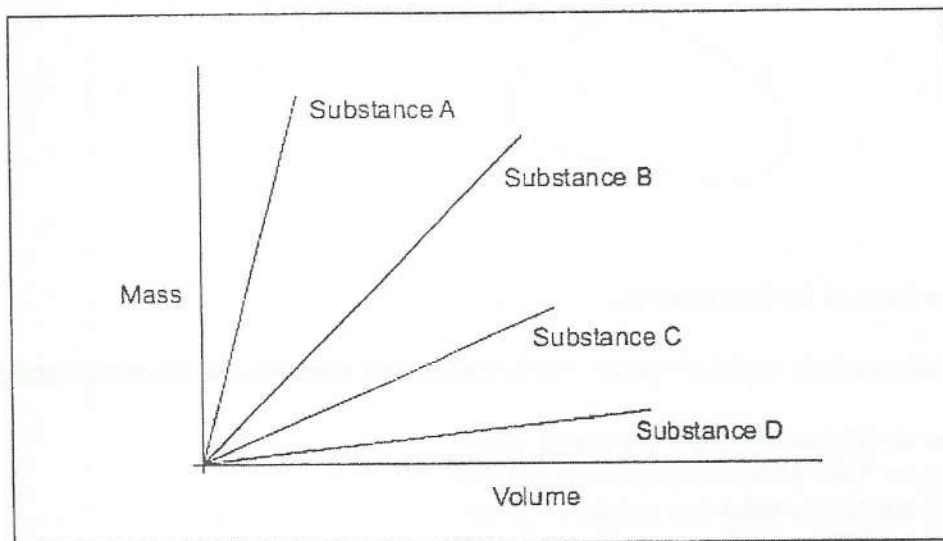
Date: _____

Circle the letter of the best response.

Which graph sketch shows a correct relationship between mass and volume for a substance?



Refer to the following graph to complete question 18. Each line shows the relationship between mass and volume for different substances.



18. Circle the letter of the best response.

Which substance has the lowest density?

- A. Substance A
- B. Substance B
- C. Substance C
- D. Substance D

TOPIC 5

PROBLEM SOLVING

Density Calculations

BLM 1-14

Goal • Compare densities, and calculate the mass and volume of different substances.

What to Do

Use the table at the right and the formula below for density to answer the following questions. Show your calculations.

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}}$$

1. Calculate the mass of 550 mL of air.

2. Calculate the mass of 50 cm³ of copper.

3. What is the volume of a 2 g piece of gold? _____

4. How much space does 1 kg of air occupy? _____

5. In an experiment, two students find that 500 g of water occupies a space of 50 mL. Is this accurate? Why?

Fluid	Density (g/mL)	Solid	Density (g/cm ³)
hydrogen	0.00009	Styrofoam™	0.005
helium	0.0002	cork	0.24
air	0.0013	oak	0.70
oxygen	0.0014	sugar	1.59
carbon dioxide	0.002	salt	2.16
ethyl alcohol	0.79	aluminum	2.70
machine oil	0.90	iron	7.87
water	1.00	nickel	8.90
seawater	1.03	copper	8.92
glycerol	1.26	lead	11.34
mercury	13.55	gold	19.32

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TOPIC 5
PROBLEM SOLVING

BLM 1-14

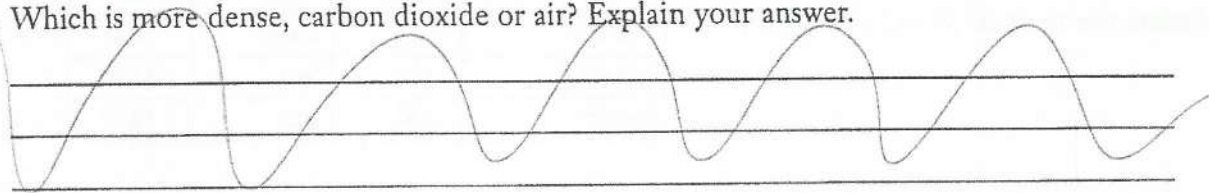
Density Calculations

(continued)

6. Two other students in the same class find that a piece of wood, with a mass of 70 g, has a volume of 103 cm^3 . They conclude that the wood is oak. Is this accurate? Why?

7. Suppose that you drop three objects into a glass of water: a piece of StyrofoamTM, a piece of oak, and a gold ring. Which float, and which sink?

8. Which is more dense, carbon dioxide or air? Explain your answer.



9. Suppose that you find a white granular substance in a jar in your cupboard. You suspect that it is either sugar or salt. How can you find out, without tasting the substance?

Name: _____

Date: _____

Science Eight
Module One
Mix and Flow of Matter WS 7

1. Define Buoyancy:

2. In your own words, describe how a "buoyant force" allows objects to float on water without sinking.

3. When an object floats, there is "tug-of-war" between two forces. What are these two forces, and which one is stronger?

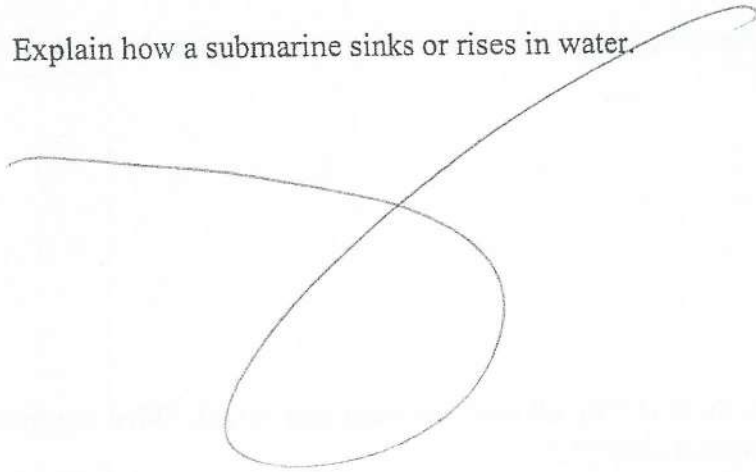
4. Read the top of page 61.
Explain why objects with higher densities than water can float on water.

Name: _____

Date: _____

5. How does a fish use the concept of “average density” to help it raise to the top of the water, or sink below it?

6. Explain how a submarine sinks or rises in water.



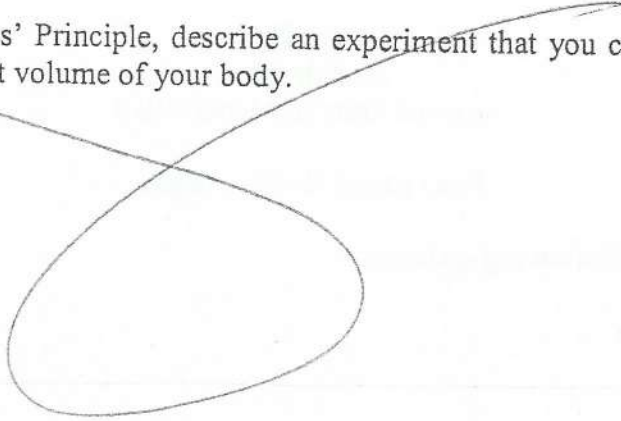
7. Read pages 64&65. Describe Archimedes' Principle:

8. When Archimedes' stood on the boat, why did he not sink?

Name: _____

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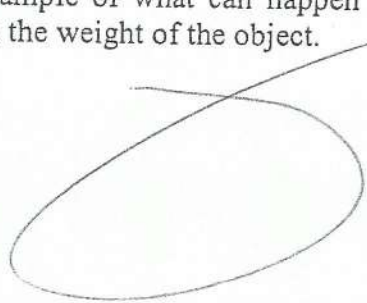
9. Using Archimedes' Principle, describe an experiment that you could conduct to calculate the exact volume of your body.



10. If the buoyant force is less than the weight of an object immersed in a fluid, what will happen to the object?

11. If the buoyant force equals the object's weight, what will happen to the object?

12. Give an example of what can happen when the buoyant force on an object is greater than the weight of the object.



Name: _____

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Science Eight
Module One
Mix and Flow of Matter WS 8

Read pages 71-74 to begin.

1. Complete the following sentence:

“Pressure is a

2. Define pressure:

3. What is the formula for calculating pressure?

4. What are two different units used to communicate pressure?

5. What are the three properties of gasses that allow them to compress?

Name: _____

Date: _____

6. How does compression of gasses compare to solids and liquids? (Hint: Read last half of page 73)

7. Define Incompressible:

8. If a force is applied to a liquid or solid, what happens to the force?

9. List some advantages of compression.

Name: _____

Date: _____

10. A tire on a car has an area of 1.05 cm^2 . The force applied to the tire as it moves is 45.6 N . Determine the pressure on the tire.

11. A piece of construction equipment is exposed to a pressure of 6005 Pa . The area of the equipment is 63 m^2 . Determine the force on the equipment.

12.

What instrument is used to measure air pressure?

- A. a barometer
- B. a hydrometer
- C. a hygrometer
- D. a thermometer

13.

Which of the following substances is compressible?

- A. a glass prism
- B. an ice cube
- C. nitrogen gas in an automobile airbag
- D. water in a plastic bag

DATE:

NAME:

CLASS:

TOPIC 7

SKILL BUILDER

Fluid Pressure Review

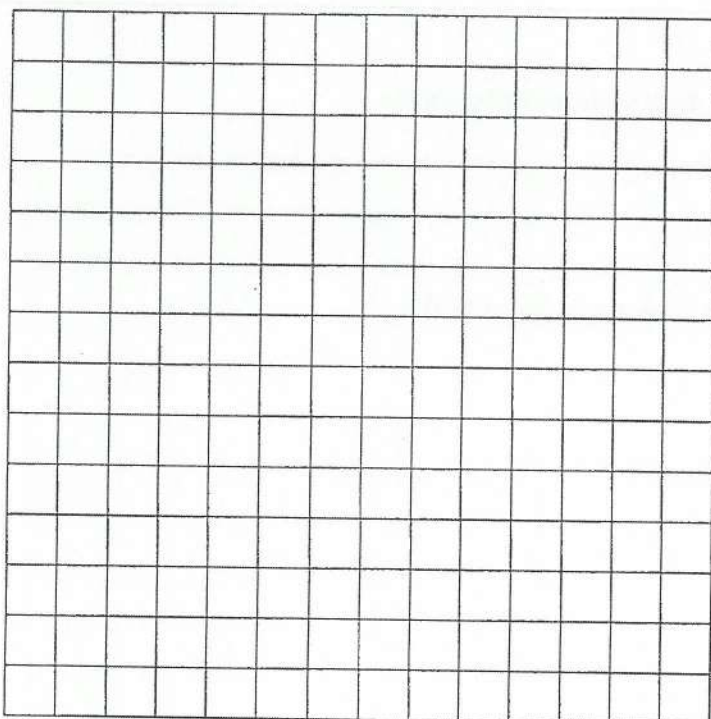
BLM 1-18

Goal • Practise drawing and reading a line graph.

What to Do

Answer the following questions in the space provided.

1. Draw a line graph to show the data in the table below. Remember to include the scales and labels for each axis. Give your graph a title.



Temperature of water (°C)	Mass of oxygen (mg)
0	72
10	56
20	44
30	39
40	34
50	30
60	25
70	19
80	12
90	5

2. What does your graph tell you about the cause-and-effect relationship between the temperature of water and the amount of oxygen dissolved in the water?

3. (a) According to your graph, how many milligrams of oxygen are dissolved in 1 L of water at 5°C? _____
 (b) What is the temperature of the water if it contains 15 mg of dissolved oxygen? _____

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4. A student pours 1 L of water, at 10°C, into a shallow dish and places the dish outside in the Sun. After 2 h, the water has reached a temperature of 30°C.
- (a) Calculate the effect of the temperature change on the amount of oxygen gas dissolved in the water.

- (b) Using the particle model, explain what happened to the oxygen.

- (c) Draw three diagrams to illustrate your answers in (a) and (b).

Goal • Check your understanding of terms and concepts in Topics 4, 5, and 6.

What to Do

Carefully read the instructions before answering each set of questions.

Fill in the Blanks

Use the terms below to complete the sentences that follow.

density

gravity

neutral buoyancy

mass

mass-to-volume ratio

Archimedes' principle

volume

floating

attractive forces

weight

average density

flow rate

force

displace

resistance to flow

1. Although your _____ would be the same on Earth as on the Moon, your _____ would be different.
2. _____ is stated as follows: The buoyant force acting on an object that is submerged in a fluid equals the weight of the fluid that is displaced by the object.
3. _____ creates internal friction.
4. _____ is a measurement of the amount of space that is occupied by a substance.
5. The time it takes for a fluid to flow from one point to another point is its _____.
6. _____ is achieved when an object neither rises nor sinks in a fluid. This allows fish to stay at a constant depth in water.
7. A simple definition of a _____ is a push or pull, or anything that causes a change in the motion of an object.
8. _____ is the amount of mass in a certain volume of a substance.

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**TOPICS 4-6
ASSESSMENT**

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Topics 4-6 Test

(continued)

Short Answers

Answer the following questions in full sentences.

9. "Solids are more dense than liquids." Is this statement correct? Explain your answer.

10. Someone decides to dump machine oil into a pond, thinking that the oil will mix with the water and "disappear." Explain what will actually happen to the oil and the water.

A hand-drawn sine wave is drawn across the lined paper. The wave starts at a midline, goes down to a trough, up to a peak, down to a trough, up to a peak, down to a trough, up to a peak, and finally down to a trough. The peaks and troughs are roughly aligned with the horizontal lines.

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**TOPICS 7-8
ASSESSMENT**

Topics 7-8 Test

BLM 1-20

Goal • Check your understanding of terms and concepts in Topics 7 and 8.

What to Do

Carefully read the instructions before answering each set of questions.

Matching

Match each description in column A with the correct term in column B. Place the letter for the correct term on the line beside the description.

A	B
___ 1. force that is exerted on an object by a fluid when the fluid is not moving	(a) compressibility
___ 2. unit for pressure	(b) flow pressure
___ 3. term that means "release from pressure"	(c) volume
___ 4. device for measuring air pressure	(d) hydraulics
___ 5. amount of surface	(e) valves
___ 6. study of pressure in gases	(f) incompressibility
___ 7. devices that regulate the flow of a liquid in a hydraulic system	(g) pressure
___ 8. ability to be squeezed into a smaller volume	(h) pneumatics
___ 9. inability to be squeezed into a smaller volume	(i) area
___ 10. pressure that is caused by a moving fluid	(j) barometer
___ 11. force that acts perpendicular to a certain surface area	(k) decompress
___ 12. study of pressure in liquids	(l) pascal
	(m) static pressure

Short Answers

Answer the following questions in the space provided.

13. Explain the difference between hydraulics and pneumatics.

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(continued)

14. ^{two} List four devices that use either pneumatics or hydraulics.

Long Answer

15. Describe an experiment that you could do to prove the existence of air pressure. Include a labelled diagram with your answer in the space below.

