

Goal • Check your use of vocabulary for fluids and states of matter.

What to Do

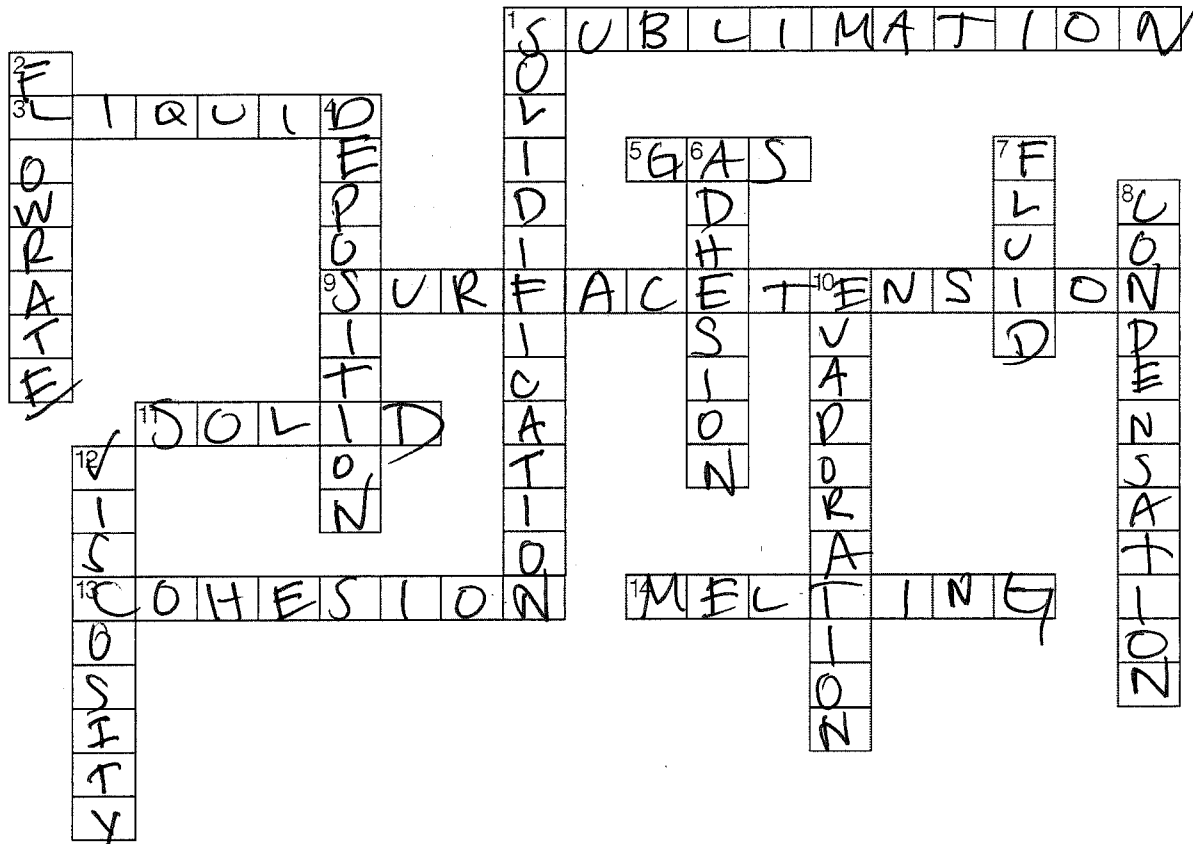
Match the definitions below with the correct terms in the list on the right. Write the letter of the matching term in the space at the end of each definition. You do not have to use all the terms.

Definition	Terms
1. the change of state from liquid to a gas <u>evaporation</u>	(a) condensation
2. the change of state from a solid to a gas <u>sublimation</u>	(b) change of state
3. the state of matter that has a definite volume <u>solid liquid</u>	(c) internal friction
4. the change of state from liquid to solid <u>solidification</u>	(d) flow rate
5. the transformation of a physical state of a substance into a different physical state _____	(e) fluid
6. the change of state from a gas to a solid <u>deposition</u>	(f) evaporation
7. the change of state from solid to liquid <u>melting</u>	(g) liquid
8. the change of state from gas to liquid <u>condensation</u>	(h) viscosity
9. resistance to flow <u>viscosity</u>	(i) melting
10. the state of matter of a substance that has a definite shape and volume <u>solid</u>	(j) solid
11. how fast a fluid "runs" <u>flow rate</u>	(k) gas
12. the state of matter of a substance that has neither definite shape nor a definite volume <u>gas</u>	(l) solidification
13. any substance that flows <u>fluid</u>	(m) sublimation
	(n) deposition

Goal • Check your understanding of the terms related to fluids.

What to Do

Read the clues and complete the following crossword puzzle with the correct terms.



Crossword Clues

Across

- the change of state directly from a solid to a gas *Sublimation*
- the state of matter of a substance that has a definite volume and takes the shape of its container *LIQUID*
- the state of matter of a substance that has neither definite shape nor definite volume *gas*
- liquid surface acts like a thin skin *surface tension*
- the state of matter of a substance that has a definite shape and volume *Solid*
- particles of a fluid attract each other *cohesion*
- the change of state from solid to liquid *melting*

Down

- the change of state from liquid to solid *Solidification*
- how fast a fluid "runs" *flow rate*
- the change of state directly from gas to solid *deposition*
- attraction of two fluids to each other *Adhesion*
- any substance that flows *fluid*
- the change of state from gas to liquid *Condensation*
- the change of state from liquid to gas *evap.*
- resistance to flow *viscosity*

CHAPTER 8 Quiz

BLM 3-35

BLM 3-35
continued

Goal • Check your understanding of Chapter 8.

What to Do

Circle the letter of the best answer.

1. Which of the following represents an action-at-a-distance force?

- A. tension
- B. elastic
- C. magnetic
- D. friction

2. Which of the following is an example of a contact force?

- A. friction
- B. gravitation
- C. electrostatic
- D. magnetic

3. Which of the following forces can change the mass of an object?

- A. gravity
- B. electrostatic force
- C. static electricity
- D. forces cannot change the mass of an object

4. A bathroom scale measures

- A. mass
- B. acceleration
- C. temperature
- D. force due to gravity

5. Unbalanced forces

- A. will change the motion of an object
- B. will not change the motion of an object
- C. must be contact forces
- D. must be action-at-a-distance forces

6. Mass and weight

- A. are inversely proportional
- B. are exactly the same thing
- C. are directly proportional
- D. are the same on Earth, but not on the Moon

7. When balanced forces are applied to an object, it

- A. will not change its motion
- B. will slow down going backward
- C. will speed up going forward
- D. will slow down going forward

8. Which of the following forces are in action as you lift an object?

- A. pulling force of gravity that the object exerts on Earth
- B. pulling force that the object exerts on your hand
- C. pulling force that your hand exerts on the object
- D. all of the above

9. Which is state of matter is the easiest to compress?

- A. liquid
- B. solid
- C. gas
- D. Solids, liquids, and gases are equally easy to compress.

10. Which of the following best describes viscosity?

- A. the resistance of a fluid to flow
- B. the faster the flow, the greater the viscosity
- C. the change in particle distance with temperature
- D. the speed at which particles move

Match the Term on the left with the best Descriptor on the right.
Each Descriptor may be used only once.

Term	Descriptor
F 11. electrostatic force	A. constant motion
G 12. newton gauge	B. decrease in volume
A 13. forces in balance	C. attraction of particles of different types
B 14. compression	D. attraction of particles for each other
D 15. cohesion	E. contact force
C 16. adhesion	F. action-at-a-distance force
	G. force meter

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Short Answer Questions

17. Solve the following pressure problems.

- (a) A trailer truck loaded with logs exerts 46 000 N of force on a roadside truck weigh scale. If the scale measures 4.0 m by 8.0 m, what pressure results on the scale platform?

$$P = \frac{F}{A} = \frac{46000}{(4 \times 8)} = 1437.5 \text{ Pa}$$

- (b) A street performer stands motionless on a column that measures 0.5 m by 0.5 m. If the performer weighs 900 N, what pressure does the performer exert on the pavement below?

$$3600 \text{ Pa}$$

- (c) House builders unload a large crate of bricks onto the bed of a truck. The bottom of the crate measures 1.0 m by 2.0 m, and the crate weighs 38 000 N. What pressure does the crate exert on the bed of the truck?

$$19000 \text{ Pa.}$$

18. Starting a vehicle on a cold Canadian morning can be difficult. One solution to this is to use a block heater, which is a heating element that plugs into the engine and warms it. Explain why a block heater allows an engine to start more easily. Make sure you include the word viscosity in your answer.

Cold weather = cold engine oil, causing oil to ↑ in viscosity.
 block heater keeps oil particles in motion, which
 decreases its viscosity

19. (a) How do contact forces differ from forces that act on an object at a distance?

contact = touching
 @ a distance = do not touch!

- (b) Name two examples of each type of force:

contact force: tension, friction, elastic
 action-at-a-distance force: gravitational, electrostatic, magnetic

Show work
 for
 ALL ☺