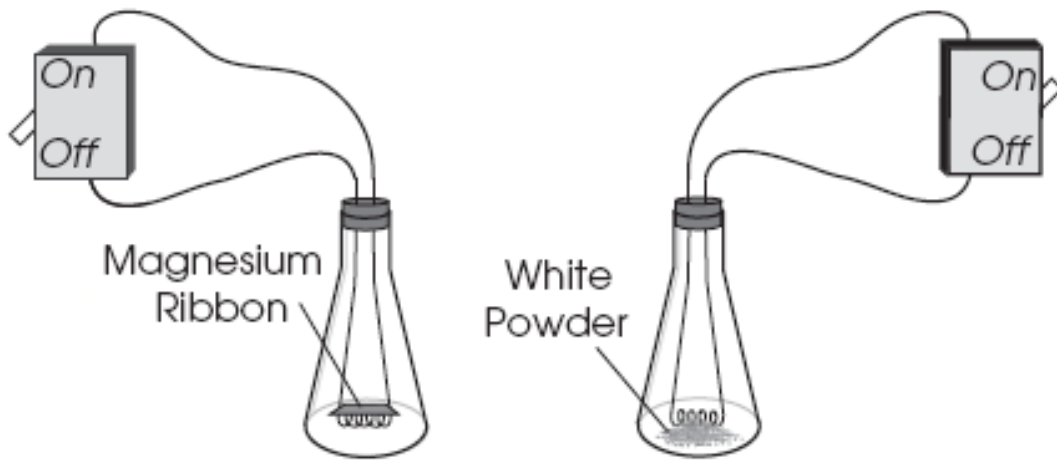


# 7th Grade Science Practice Test

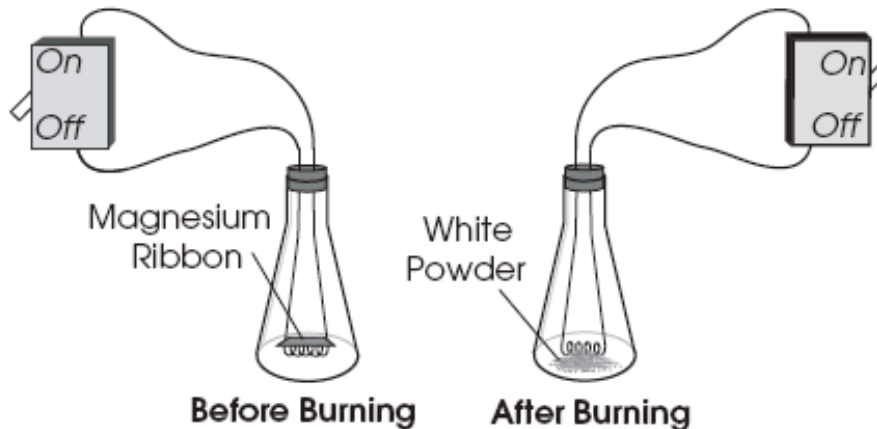


**This page  
is intentionally  
left blank in  
order to print  
front to back  
test booklet  
style**

## 7<sup>th</sup> Grade Science Practice Test

### Question 1.

A teacher places a ribbon of magnesium on a wire and suspends it in a flask. She then seals the flask and runs electricity through the wire to ignite the magnesium. After the magnesium is completely burned, a student notices a white powder in the bottom of the flask. The mass of the flask system (the flask and its contents) is determined before and after the magnesium is ignited.



Which statement correctly compares the mass of the flask system before the magnesium burned with the mass of the flask system after the magnesium burned?

- A. The mass of the flask system before burning is greater than the mass of the flask system after burning.
- B. The mass of the flask system before burning is less than the mass of the flask system after burning.
- C. The mass of the flask system before burning is the same as the mass of the flask system after burning.
- D. The mass of the flask system before burning is not related to the mass of the flask system after burning.

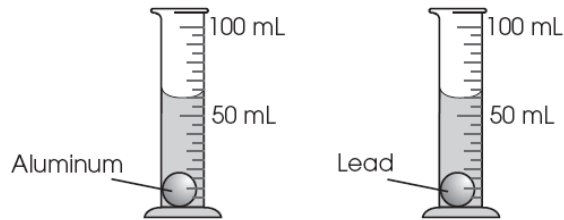
### Question 2.

What interaction between organisms would be described as parasitic?

- A. a mosquito feeding on the blood of a dog
- B. a bee gathering nectar and pollen from a flower
- C. a cleaner shrimp picking dead skin off a large fish
- D. a nonpoisonous snake mimicking a poisonous snake

Question 3.

The two graduated cylinders pictured can hold the same amount of water and use the same scale. A student measures the masses of two metal balls. One ball is made of aluminum and the other ball is made of lead. The student adds 50 mL of water to each graduated cylinder and then drops one metal ball into each graduated cylinder.



The student includes the sentence below in the write-up of this investigation.

The lead ball has a measured mass of 113 grams.

Which kind of scientific statement is this sentence?

- A. inference
- B. prediction
- C. explanation
- D. observation

Question 4.

The teacher asks the student to use the information she collected to compare the density of the two metal balls. The mass of the lead ball is 113 grams and the mass of the aluminum ball is 27 grams.

What can the student infer about the density of these metal balls based on this investigation?

- A. The density of both metal balls is the same.
- B. The density of both metal balls is less than the density of the water.
- C. The density of the lead ball is less than the density of the aluminum ball.
- D. The density of the lead ball is greater than the density of the aluminum ball.

Question 5.

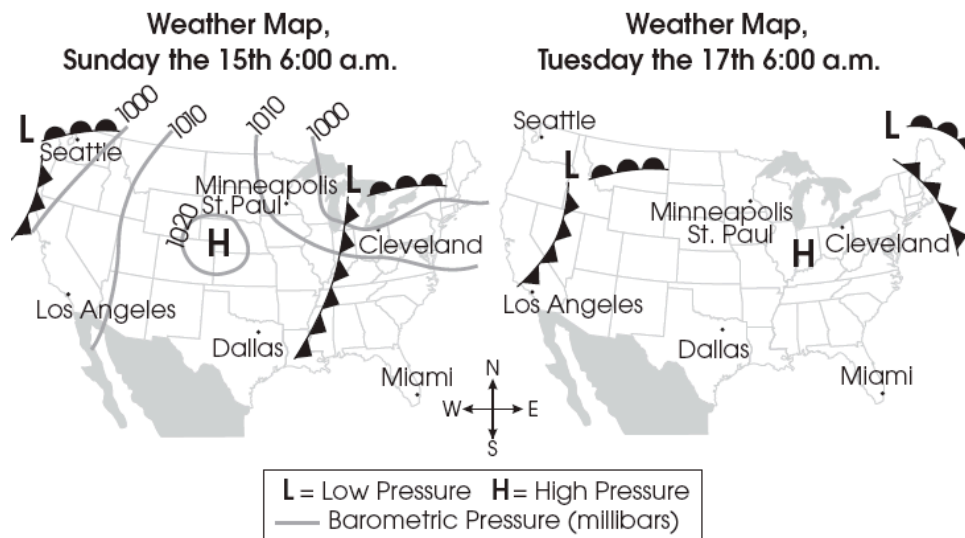
In repeating the investigation, the student accidentally drops and steps on the lead ball. This action changes its shape from a sphere to an egg-shaped solid. The lead ball is placed back into the graduated cylinder.

Predict what effect, if any, this change has on the amount of water displaced by the lead ball. Explain your prediction. (2 points)

## Question 6

The weather information shown below was reported on Sunday, the 15<sup>th</sup> of the month, and two days later on Tuesday, the 17<sup>th</sup> of the month. The table include conditions for Sunday only, whereas the maps report early morning conditions for both Sunday and Tuesday.

Weather Conditions for Sunday at 6:00 a.m. and for Previous 24 Hours				
City	Previous 24 Hour Temperatures		Barometric Pressure 6:00 a.m. (millibars)	Relative Humidity 6:00 a.m. (percent)
	High (Fahrenheit)	Low (Fahrenheit)		
Cleveland	65	53	?	88
Dallas	75	50	1017	65
Los Angeles	68	50	1007	58
Miami	80	64	1016	60
Minneapolis	54	39	1007	65
Seattle	64	57	998	100



According to the weather map for Sunday, which is the approximate barometric pressure reading at

Cleveland, Ohio, on Sunday at 6:00 a.m.?

- A. 990 millibars
- B. 995 millibars
- C. 1000 millibars
- D. 1010 millibars

## Question 7

Look at the weather map and the table for Sunday at 6:00 a.m. Fog was reported for one city on Sunday morning at 6:00 a.m. Which city was it?

- A. Dallas
- B. Miami
- C. Minneapolis
- D. Seattle

Question 8

You live in Ohio and want to paint the outside of your house. You need fair weather for at least two days for two coats of paint to dry completely.

According to the weather maps, on which day should you start painting?

- A. Saturday, the 14th of the month
- B. Sunday, the 15th of the month
- C. Monday, the 16th of the month
- D. Thursday, the 19th of the month

Question 9

Using the two weather maps and the table of weather data on page 4, predict the likelihood of precipitation and probable sky conditions (cloud cover) at Cleveland, Ohio, for Sunday and for the following Tuesday.

Give reasons for your predictions for each day. (4 points)

## Question 10

Coal is usually found underground, compressed in a layer between other types of rock. Coal is produced by what rock-forming process?

- A. crystallization from melted rock
- B. formation of sediment from weathering
- C. deposition and burial of dead plant matter
- D. eruption of volcanic ash followed by settling in a layer

## Question 11

Most electric power is generated by burning fossil fuels. A family living in central Ohio uses electric appliances for cooking and air conditioning. They use fuel oil for heating.

What change could this family make to conserve fossil fuels?

- A. convert to natural gas as a fuel for cooking
- B. switch to the use of less expensive coal for heat
- C. lower the temperature setting on the air conditioner
- D. install solar roof panels to generate additional electricity

## Question 12

A park is home to a large number of robins, squirrels and rabbits. The robins and squirrels live in the park's trees. The robins feed on earthworms and insects that live on the ground. The squirrels eat the acorns produced by the park's oak trees. The rabbits hide in the bushes and feed on the grass.

Which factor would directly limit the number of rabbits that could live in this park?

- A. number of robins
- B. number of bushes
- C. number of acorns
- D. number of squirrels

## Question 13

The table below lists the densities of several materials.

Which material will float in water?

Material	Density (g/mL)
Limestone	2.70
Magnesium	1.74
Sulfur	2.07
Water	1.00
Wax	0.95

- A. limestone
- B. magnesium
- C. sulfur
- D. wax

Question 14

What is the major process of surface rock formation on volcanoes?

- A. Rock cools quickly from melted rock.
- B. Rock is recrystallized by extreme pressure.
- C. Rock solidifies slowly deep underground.
- D. Rock is formed from deposited sediment.

Question 15

Which cell structure carries out a function for a cell that is similar to the function that bark carries out for a tree?

- A. cell wall
- B. nucleus
- C. chloroplast
- D. mitochondrion

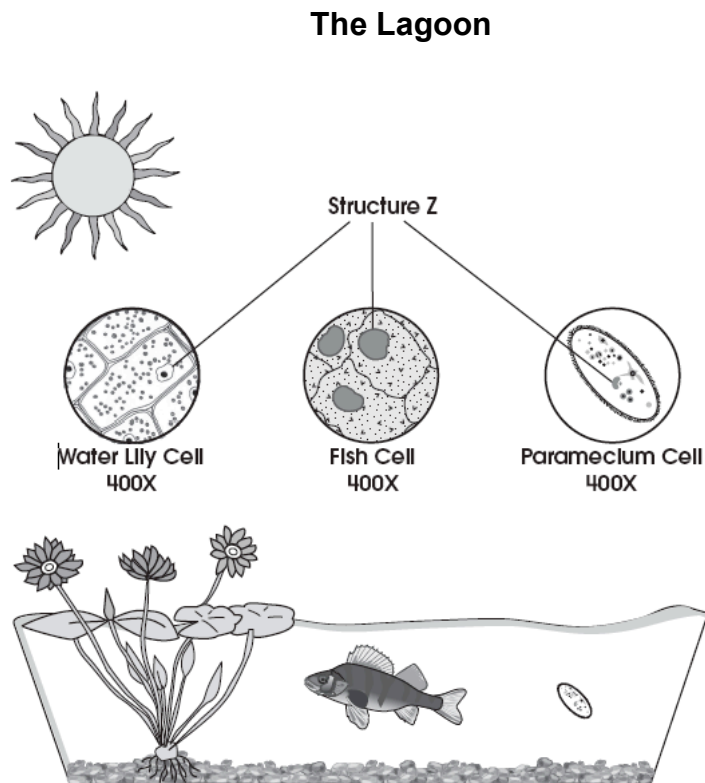
Question 16

Why is coal considered to be a nonrenewable energy source?

- A. Sunlight is the original source of energy for coal.
- B. The burning of coal could cause environmental pollution.
- C. Once coal is mined, it can take millions of years to be replaced.
- D. Coal is abundant, but it is very expensive to mine from underground.

## Question 17

The diagram below represents a cross section of a lagoon and some of its aquatic organisms. A magnified view (400X magnification) of each organism is shown.



Choose one of the organisms in the diagram.

Identify two nonliving resources the organism needs to live.

Explain how the organism uses each of the two nonliving resources. (2 points)

## Question 18

Structure Z serves the same function in each of the organisms.

What is the function of structure Z in the water lily, fish and paramecium cells?

- A. to move the cells
- B. to control cellular activities
- C. to carry out photosynthesis
- D. to allow nutrients to enter and exit the cells

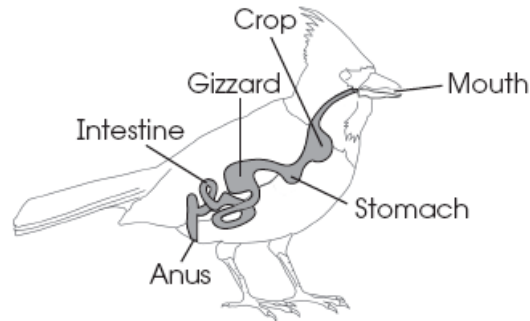
Question 19

The diagrams below show the digestive systems of an earthworm and a bird.

**Digestive System of a Worm**



**Digestive System of a Bird**



Earthworms and birds have strong muscular gizzards. The gizzard grinds food into small bits before it passes on to the intestine. Mammals, in contrast, do not have gizzards.

Why do earthworms and birds need to have gizzards but mammals do not?

- A. Earthworms and birds are not equipped to chew food.
- B. Earthworms and birds eat food that is difficult to digest.
- C. Earthworms and birds have intestines that work inefficiently.
- D. Earthworms and birds do not have stomachs to mix moistened food.

Question 20

Which is an example of a group of cells with a common structure and function?

- A. stomach
- B. muscle tissue
- C. mitochondria
- D. digestive system

Question 21

Electricity is produced in a hydroelectric plant when moving water turns a turbine.

Which describes this energy transformation from the turning turbine to electricity?

- A. kinetic energy into electric energy
- B. nuclear energy into electric energy
- C. thermal energy into electric energy
- D. chemical energy into electric energy

