Name: _____ Group: _____ Date: _____

THE RESPIRATORY AND CIRCULATORY SYSTEMS

STUDENT BOOK | Ch. 6, pp. 172–176

Respiratory and circulatory systems

1. Solve the following syllable riddles.

a) My first sounds like navel. _____

My second makes the dentist unhappy. _____

My whole filters air with its hairs. _____

b) My first is at a great distance away. _____

My second is a wild cat with pointy ears, with the first letter removed. _____

My whole is the passageway of food to the esophagus. _____

c) My first is used to carry food. _____

My second is a Swedish furniture store with the first letter removed. _____

My whole looks like an upside down tree. _____

2. Match each respiratory system structure with a component in the right column.

Respiratory system structure	Component
a) Lungs	1. Hair
b) Bronchi	2. Epiglottis
c) Larynx	3. Cilia
d) Nasal cavity	4. Alveoli
e) Trachea	5. Vocal cords
f) Pharynx	6. Cartilage rings

3. Circle the action in the following statements that applies to exhalation.

a) The lungs increase or decrease in volume.

b) Carbon-dioxide filled air is propelled inside or propelled outside the lungs.

c) The diaphragm is pulled up or pulled down, and the ribs are pulled up or pulled down.

d) Air pressure increases or decreases in the lungs.

e) The intercostal muscles contract or expand.

Name: _____ Group: _____ Date: _____

THE RESPIRATORY AND CIRCULATORY SYSTEMS (*continued*)

Functions of blood constituents, compatibility of blood types

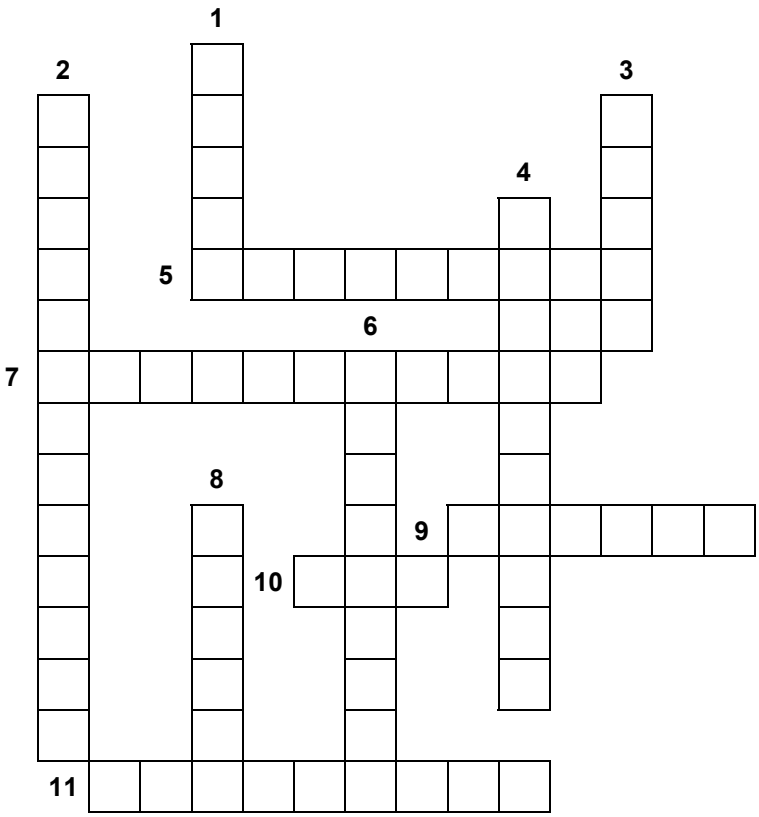
1. Complete the crossword puzzle below with the answers to the following definitions.

Across

5. Person that receives blood.
7. Blood _____ is the injection of blood into a person.
9. Lower part resulting from the separation of blood constituents during centrifugation is composed of _____ elements.
10. We play an important part in the transport of CO_2: _____ blood cells.
11. Blood elements that make coagulation possible: _____.

Down

1. Person that is necessary to the process of blood transfusion.
2. When a person can receive blood from another person, he/she has blood _____.
3. A blood constituent that plays a part in defending the organism: _____ blood cells.
4. Protein important in the transport of oxygen.
6. A person whose blood can be given to people of all blood types is a _____ donor.
8. I transport many substances to cells, such as nutrients and antibodies.



Name: _____ Group: _____ Date: _____

Functions of blood constituents, compatibility of blood types (*continued*)

2. What is the rhesus factor? Circle the answer that does not apply.

a) Substance from the blood of a rhesus monkey
b) Constituent found in the blood of universal donors
c) One of the substances in the blood carried by the membrane of red cells
d) Blood factor discovered in 1941
e) Substance present in 85 percent of individuals in Québec

3. In the following table, place a check mark in each box that matches a donor to an appropriate recipient.

Donor / Recipient	AB^-	A^-	B^-	B^+	O^-	AB^+
O^+	☐	☐	☐	☐	☐	☐
AB^-	☐	☐	☐	☐	☐	☐
A^+	☐	☐	☐	☐	☐	☐
O^-	☐	☐	☐	☐	☐	☐
B^-	☐	☐	☐	☐	☐	☐
AB^+	☐	☐	☐	☐	☐	☐

4. True or false? If false, provide the correct answer.

a) The rarest blood type found in Québec's population is type B^+.

_____

_____

b) Type O^- is the blood type of universal donors.

_____

_____

c) A universal recipient is a person who can receive blood from all over the world.

_____

_____

d) People with type O^- do not possess substances A, B and the Rh factor on the membrane of their red cells.

_____

_____

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THE RESPIRATORY AND CIRCULATORY SYSTEMS (*continued*)

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Cardiovascular (circulatory) system

1. Place the different types of blood vessels in ascending order from smallest to biggest.

Veins	Capillaries	Arteries

_____ < _____ < _____

2. Complete the sentences below with the following terms. One term may be used more than once.

intense	venules	arteries	vessels	blood
arterioles	lower	thick	valves	heart
capillaries		veins		contracting

a) For _____ to circulate in the body, the cardiovascular system is made up of a transport network that includes blood _____, blood and the _____, which is the pump that makes the system work by _____.

b) _____ are blood vessels that carry blood from the _____ to other parts of the body. Thanks to their _____ walls, these _____ can resist _____ pressure exerted by blood.

c) Blood vessels that carry blood back to the _____ are _____. These vessels are equipped with _____ that prevent _____ from returning to the _____ part of the body.

d) Gas exchanges between blood and organ cells occur in _____. They are connected to arteries by _____ and to veins by _____.

Name: _____ Group: _____ Date: _____

Cardiovascular (circulatory) system (*continued*)

3. The following descriptions refer to the cardiovascular system.

A. Cavities used by blood to exit the heart
B. Path of circulation in which the right side of the heart is the pump
C. Blood vessels connected to the right ventricle
D. Artery that carries blood ejected from the left ventricle
E. Cavities used by blood to enter the heart
F. Longest circulatory path
G. Vessels that carry deoxygenated, CO_2-rich blood to the heart
H. Vessels that carry oxygenated, O_2-rich blood to the heart

Match the descriptions above to the terms below.

Pulmonary circulation:	_____	Systemic circulation:	_____
Pulmonary arteries:	_____	Aorta:	_____
Ventricles:	_____	Atriums:	_____
Vena cava:	_____	Pulmonary veins:	_____

4. Place a check mark in the appropriate column next to each statement to indicate if it refers to blood rich in oxygen (O_2) or in carbon dioxide (CO_2).

	O_2-rich	CO_2-rich
a) Blood exiting the heart and going toward the lungs	☐	☐
b) Blood circulating in the aorta	☐	☐
c) Blood travelling up the leg	☐	☐
d) Blood circulating in the brain	☐	☐
e) Blood in an artery where pulsations from the heart are felt	☐	☐
f) Blood circulating from capillaries to venules	☐	☐

5. Circle the answer corresponding to the number of heartbeats per minute of the general population.

a) 40 **b)** 75 **c)** 90 **d)** 120

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THE RESPIRATORY AND CIRCULATORY SYSTEMS (*continued*)

Lymphatic system

1. True of false?

a) Substances exchanged during blood circulation do not circulate directly from blood to cells. _____

b) The intracellular liquid contains white and red blood cells. _____

c) White blood cells can escape blood capillaries through their pores. _____

d) The intracellular liquid carrying cell waste is called lymph once it enters lymphatic vessels. _____

e) Lymph can circulate in lymphatic vessels thanks to muscle contractions. _____

2. Match the definitions to the corresponding event.

Event

A. Phagocytosis	
B. Diapedesis	
C. Production of antibodies	
D. Secretion of substances by lysosomes	

Definitions

1. Destruction of invaders inside white blood cells
2. Mechanism that helps white blood cells ingest and destroy certain microorganisms
3. Deformation of white blood cells that helps them to cross through the membrane of capillaries.
4. Mechanism that can be triggered by the presence of antibodies.

3. Circle the statements that refer to the defence of our organism.

a) White blood cells are found in higher concentration in the lymph nodes.

b) Intracellular liquid contains water and plasma elements.

c) Antibodies neutralize viruses and bacteria that attack our organisms.

d) White blood cells produce antibodies.

e) Cellular waste is dumped into intracellular liquid.

f) White blood cells remember how to produce antibodies.