

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

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Vzdělávací oblast: Jazyk a jazyková komunikace
Vzdělávací obor: Anglický jazyk
Tematický okruh: odborná slovní zásoba a témata pro studenty oboru Aplikovaná chemie
Téma: Circulation
Klíčová slova: circulatory system, blood vessels, lymphatic system

Metodický list/anotace:

Materiál slouží k seznámení se základní odbornou slovní zásobou pro studenty oborů Aplikovaná chemie. Jedná se zejména o termíny z oblasti biologie a chemie.

Studenti odhadují na základě svých znalostí význam slov. V případě potřeby pracují se slovníkem. Důležité je pochopení obsahu a aktivní slovní zásoba. Studenti využívají svých znalostí z oboru chemie, biologie a mikrobiologie.

Připraví krátkou prezentaci se zajímavými informacemi.

Circulation

Circulatory system

Circulatory system

- The system permits blood and lymph circulation to transport nutrients (such as amino acids and electrolytes), oxygen, carbon dioxide, hormones, blood cells, etc. to and from cells to nourish it and help to fight diseases, stabilize body temperature and pH and to maintain homeostasis.
- There are two types of fluids: *blood* and *lymph*. Lymph is recycled blood plasma after it has been filtered from the blood cells and returned to the lymphatic system. The blood, heart, and blood vessels form the ***cardiovascular system***. The lymph, lymph nodes, and lymph vessels form the ***lymphatic system***. These systems together form ***circulatory system***.

Cardiovascular system

- Humans - and all other mammals - have a double circulatory system which comprises two separate circuits.
- The essential components of the human cardiovascular system are the heart, blood, and blood vessels. It includes: the *pulmonary circulation*, a "loop" through the lungs where blood is oxygenated; and the *systemic circulation*, a "loop" through the rest of the body to provide oxygenated blood.
- The blood in each circuit is kept separate. This is called double circulation and it is a very efficient way of delivering oxygen to the tissues.

Arteries, veins and capillaries

- *Arteries* are blood vessels that carry blood away from the heart. (It's easy to remember this – 'arteries away'.) They have thick, elastic walls which substances cannot pass through.
- *Veins* carry blood towards the heart. Veins have thinner walls because the blood they transport is under lower pressure. Veins contain one-way valves which prevent blood flowing backwards.
- *Capillaries* are very thin blood vessels which have walls that are only one cell thick. This means that substances such as glucose, oxygen, water and carbon dioxide can diffuse through between the blood and the tissues.

How does the circulatory system work?

- The left side of the heart pumps oxygenated blood from the lungs, through the aorta to the body tissues (excluding the lungs).
- Deoxygenated blood returns from the body tissues to the right side of the heart, via the vena cava.
- It is then pumped to the lungs, via the pulmonary artery where it is oxygenated.
- Blood returns to the left side of the heart, via the pulmonary vein and is pumped to the body tissues again.

See: <http://www.youtube.com/watch?v=ABTvNR59K5Q>

Literatura

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- PHILLIPS, Janet a kol. Oxford studijní slovník. Oxford: Oxford University Press, 2010, ISBN 978019 430655 3.