



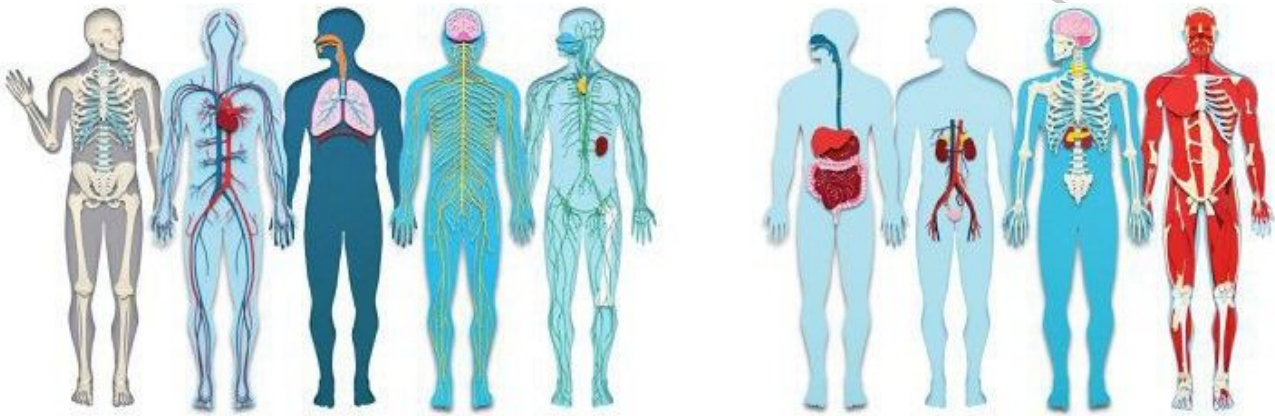
# SCIENCE PACK

## GRADE 9

Please watch the video and complete the worksheets for:

1. The last topic you were taught in class (as a review of this topic)  
**AD**(at least)
2. The next topic in the pack after your reviewed topic

## Human Body Systems



### Lesson Outline

This lesson will cover 4 systems in the human body: the Skeletal, Muscular, Circulatory, and Respiratory systems.

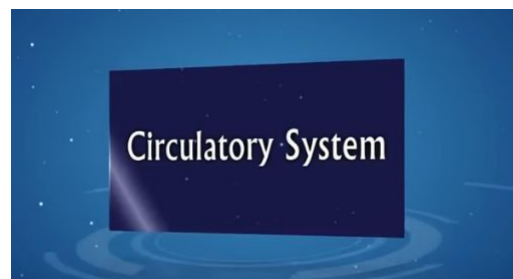
The muscular and skeletal systems, which work closely together, can be called the musculoskeletal system. Learn about them by watching this video:

<https://www.youtube.com/watch?v=ynVRDsDC-84>



The Circulatory (also known as the cardiovascular) System is composed of the heart and blood vessels. You can learn more about it here:

<https://www.youtube.com/watch?v=qmNCJxpsr0>




The respiratory system works with the circulatory system to bring oxygen in, and carbon dioxide out of your lungs. Watch this video to learn more about it:

<https://www.youtube.com/watch?v=8NUxvJS-0k>



# Question time

**CIRCLE** the following correct answers 

**1. True or False (1 Mark)**

Muscles elongate (become longer) and push against a bone to move your body parts

- A. True
- B. False

**2. Through the cells of which blood vessel does gas exchange occur? (1 Mark)**

- A. arteries
- B. veins
- C. capillaries

**3. What object are lungs similar to? (1 Mark)**

- A. a sponge
- B. a balloon
- C. a water bottle

**Answer the following in FULL sentences**

**4. What is one of the main functions of bones that is NOT mentioned in the video? (p 84-87 biology book) (2 Marks)**

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**5. What is the difference between a voluntary and involuntary muscle? (2 Marks)**

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**6. What is cellular respiration? What is breathing? (2 marks)**

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**7. List the 3 types of blood vessels and provide 3 ways in which they differ from one another.(p 74) (4 Marks)**

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**8. Describe how gas exchange occurs in the lungs and in the body tissues. (5 Marks)**

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EMG EDUCATION



## Nutrition & Digestion



### Lesson Outline

This lesson will cover the digestive system and different aspects related to nutrition of the human body.

How your digestive system works: <https://www.youtube.com/watch?v=Og5xAdC8EUl>

Basic Nutrition and Macro-nutrients: <https://www.youtube.com/watch?v=cKRf53I737E>

Micronutrition Pt 1 - Vitamins and Minerals: <https://www.youtube.com/watch?v=7WnpSB14nDM>

# Question time

**CIRCLE** the following correct answers

1. How many components is the digestive system made of? **(1 Mark)**

- A. 1
- B. 2
- C. 3
- D. 4

2. Circle the 2 types of nutrients known as *micro-nutrients*. **(1 Mark)**

- A. Minerals
- B. Fats
- C. Carbohydrates
- D. Vitamins
- E. Proteins

3. Which nutrient is not able to be digested? **(1 Mark)**

- A. Carbohydrates
- B. Protein
- C. Fibre
- D. Vitamins

**Answer the following in FULL sentences**

4. Which are healthier, simple carbohydrates or complex carbohydrates? Why? **(2 Marks)**

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5. What's the difference between fat soluble and water soluble vitamins? **(2 Marks)**

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**6. List 3 micro-nutrients and write their functions. (3 Marks)**

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**7. What are the 3 macro-nutrients and their functions? How many calories does one gram of each macro-nutrient provide? (4 Marks)**

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**8. What are the small projections in your small intestines called and what is their function? (4 Marks)**

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EMG EDUCATION



## Health & Lifestyle Choices



### Lesson Outline

This lesson will cover healthy living through the habits you have and choices you make. Specifically, we will focus on cardiovascular health and the negative effects of smoking. You can learn about these topics by watching the videos below:

How to feel your heart beat:

<https://www.youtube.com/watch?v=tF9-jLZNM10>



How do cigarettes affect the body?:

<https://www.youtube.com/watch?v=Y18Vz51Nkos>



Dangers of smoking:

<https://www.youtube.com/watch?v=XYLi9zCghd8>





# Question time

**CIRCLE** the following correct answers

1. How many times does the average heart beat per day? (1 Mark)

- A. 1,000 times
- B. 10,000 times
- C. 100,000 times
- D. 1,000,000 times

2. True or False (1 Mark)

The harmful effects of smoking are permanent.

- A. True
- B. False

3. What substance in cigarettes causes addiction in humans? (1 Mark)

- A. Nicotine
- B. Tar
- C. Carbon monoxide

**Answer the following in FULL sentences**

4. Why does your heart beat faster when you exercise? (2 marks)

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5. What is a pulse and how can you find it on your body? (2 marks)

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6. List 2 lifestyle changes that smokers can incorporate(add) into their lives to quit smoking. (2 marks)

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7. Name 3 harmful substances in cigarettes and explain how they damage the body. (5 marks)

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8. What is emphysema? What happens to someone's body if they get emphysema? (5 marks)

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EMG EDUCATION

## Earth and atmosphere - Earth



### Lesson outline:

This lesson will cover the formation of the three major rock types, igneous, metamorphic and sedimentary. It will also cover how we extract metals from ores.

The way that the three main rock types are formed.  
Learn about them by watching this video:

<https://www.youtube.com/watch?v=CeuYx-AbZdo>



The difference between minerals, and ores. How do we extract metals from ores? Learn about them by watching this video:

<https://www.youtube.com/watch?v=zPaYiSlW-FU>



Don't forget to turn the closed captions on!

# Question time

**CIRCLE** the following correct answers

1 Which type of rock is made from the changing of one type to another?

(Video 1) **(1 Mark)**

- A. Igneous
- B. Metamorphic
- C. Sedimentary

2. Which type of rock is made from molten matter in the Earth's core?

(Video 1) **(1 Mark)**

- A. Igneous
- B. Metamorphic
- C. Sedimentary

3. A native metal will form:

(Video 2) **(1 Mark)**

- A. Oxide compounds
- B. Carbonate compounds
- C. Sulfide compounds
- D. No compounds

**Answer the following in FULL sentences**

4. Explain how a sedimentary rock forms.

(Video 1) **(2 Marks)**

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5. Explain what is an ore and give one example (Video 2) **(2 Marks)**

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6. Why are types of carbon most commonly used to extract metals?  
(Video 2) **(2 Marks)**

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7. Explain how we extract a metal from its ore, use a common example in your answer (video 2) **(4 Marks)**

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## Earth and atmosphere - Atmosphere



### Lesson outline:

This lesson will cover where dangerous particulate matter comes from, how it affects our health, and how it affects the atmosphere.

The way that air pollutants affect our health, the atmosphere, and how we can reduce emissions. Learn about them by watching this video:  
<https://www.youtube.com/watch?v=TXSK7Qvmlps>



Don't forget to turn the closed captions on!

# Question time

**CIRCLE** the following correct answers

1. Where does particulate matter normally come from? (1 Mark)

- A. Human activity
- B. Natural causes

2. Which type of particulate matter is more dangerous to humans? (1 Mark)

- A. PM 10
- B. PM 2.5

3. What do excess levels of Carbon dioxide in the atmosphere cause? (1 Mark)

- A. Global dimming
- B. Global cooling
- C. Global warming

**Answer the following in FULL sentences**

4 What is one benefit and one problem with ozone? (2 Marks)

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5. What can we do to reduce emissions? (2 Marks)

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**6** Why are nitrogen oxides so bad and how are they formed? **(2 Marks)**

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**7** Why is particulate matter so dangerous to human health? Give an example of what harm it can cause **(3 Marks)**

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**8.** How is sulphur dioxide caused and why is it dangerous? **(4 Marks)**

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