



## Year 3 - The Human Body Reading Booklet

### Lesson Series:

1. The Muscular System
2. The Skeletal System
3. The Nervous System
4. Preparing to Eat
5. The Digestive System
6. Assessment

Name: \_\_\_\_\_

Class: \_\_\_\_\_

## **Lesson 1 - The Muscular System**

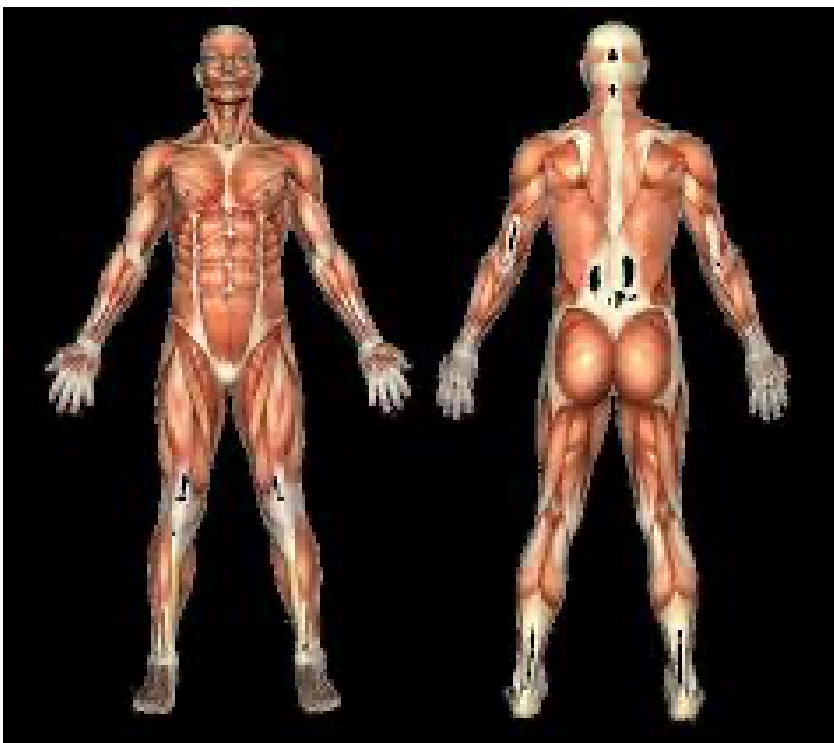
Muscles are how we move and live. All movement in the body is controlled by muscles. Some muscles work without us thinking, like our heart beating, while other muscles are controlled by our thoughts and allow us to do stuff and move around. All of our muscles together make up the body's muscular system.



There are over 650 muscles in the human body. They are under our skin and cover our bones. Muscles often work together to help us move. We don't really have to think about moving each individual muscle. For example, we just think of running and our body does the rest.

### **How Muscles Work**

Muscles work by contracting and relaxing. Muscles have long, thin cells that are grouped into bundles. When a muscle fiber gets a signal from its nerve, proteins and chemicals release energy to either contract the muscle or relax it. When the muscle contracts, this pulls the bones it's connected to closer together. Many of our muscles come in pairs. An example of this is the biceps and triceps in our arms. When the biceps contract the triceps will relax, this allows our arm to bend. When we want to straighten our arm back out, the biceps will relax and the triceps will contract. Muscle pairs allow us to move back and forth.



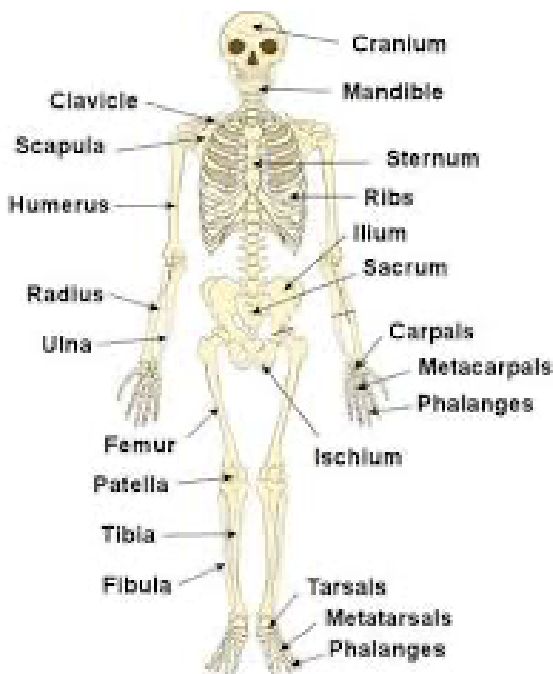
## Lesson 2 - The Skeletal System

All the bones in the human body together are called the skeletal system. The skeletal system provides strength and rigidity to our body so we don't just flop around like jellyfish. We have 206 bones in our body. Each bone has a function. Some bones offer protection to softer, more fragile parts of the body. For example, the skull protects the brain and the rib cage protects our heart and lungs. Other bones, like bones in our legs and arms, help us to move around by providing support for our muscles. The skeletal system includes more than just bones. It also includes tendons, ligaments, and cartilage. Tendons attach our bones to muscles so we can move around. Ligaments attach bones to other bones.



### **What are bones made of?**

Around 70 percent of your bones are not living tissue, but hard minerals like calcium. The outside of the bone is called the cortical bone. It's hard, smooth, and solid. Inside the cortical bone is a porous, spongy bone material called the trabecular or cancellous bone. This bone is lighter allowing for the bone itself to be lighter and easier for us to move around. It also allows room for blood vessels and makes our bones slightly bendable. This way our bones won't break so easily. At the center of bones is a softer substance called marrow.



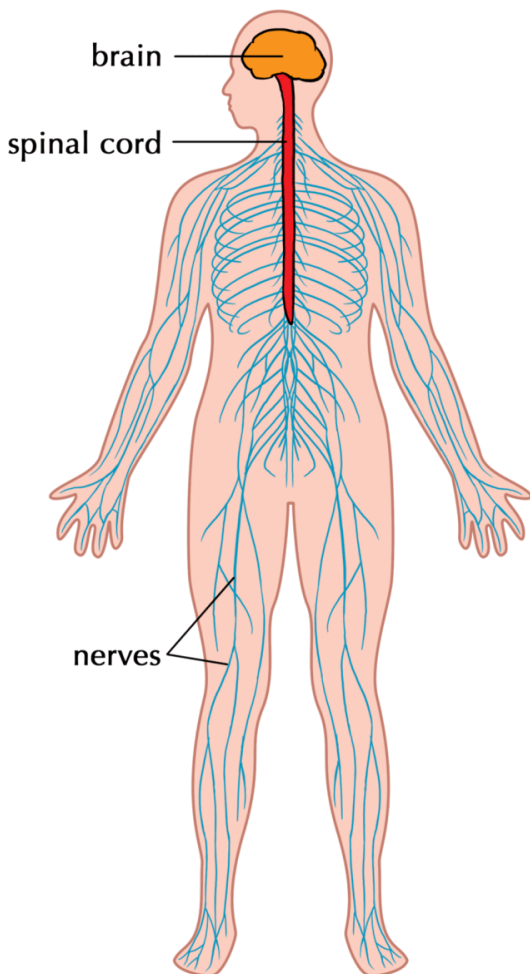
## Lesson 3 - The Nervous System

Read this

The nervous system is made up of the brain, the spinal cord, and a large network of nerves that covers all parts of the body. Together the nervous system helps different parts of our body communicate and allows our brain to control what is going on. Without the nervous system our brain would be mush. It wouldn't know anything that was going on in the outside world and wouldn't be able to control our body. The brain and the spinal cord make up what is called the central nervous system. The rest of the nerves together are called the peripheral nervous system.

### **Nerves**

Peripheral Nervous System Nerves are sort of like wires that carry communication signals or impulses around the body. Inside each nerve is a bundle of nerve fibers. Some nerves are really long, like the ones that go all the way from your feet to your spinal cord. Nerve cells are called neurons.



## Lesson 4 - Preparing To Eat

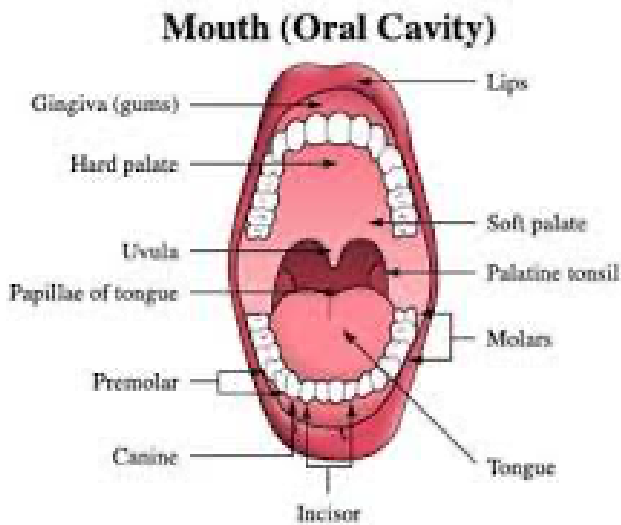
### The Mouth Starts Everything Moving

Your **digestive system** started working even before you took the first bite of your pizza. And the digestive system will be busy at work on your chewed-up lunch for the next few hours — or sometimes days, depending upon what you've eaten. This process, called **digestion**, allows your body to get the nutrients and energy it needs from the food you eat. So let's find out what's happening to that pizza, orange, and milk.

Read this

Even before you eat, when you smell a tasty food, see it, or think about it, digestion begins. **Saliva**, or **spit**, begins to form in your mouth.

When you do eat, the saliva breaks down the chemicals in the food a bit, which helps make the food mushy and easy to swallow. Your tongue helps out, pushing the food around while you chew with your teeth. When you're ready to swallow, the tongue pushes a tiny bit of mashed-up food called a **bolus** toward the back of your throat and into the opening of your oesophagus, the second part of the digestive tract.



## Lesson 5 -The digestive system

Read this

- The human digestive system is a **complex series of organs and glands that processes food**. In order to use the food we eat as **energy**, our body has to break the food down into smaller molecules that it can process; it also has to excrete (or get rid of) **waste**.
- Most of the digestive organs (like the **stomach** and **intestines**) are tube-like and contain the food as it makes its way through the body. The digestive system is essentially a long, twisting tube that runs from the mouth to the anus, plus a few other organs (like the **liver** and **pancreas**) that produce or store digestive chemicals. Without the digestive system, our bodies would not be able to get nutrients from the food we eat or get rid of the waste products that food makes and we would soon become ill!

The digestive system

