

# Knowledge Organiser – Animals Including Humans (Year 6)

## Key Vocabulary

### Circulatory System

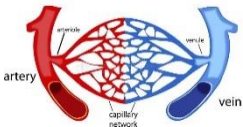
A system of organs that includes the **heart**, **blood vessels**, and **blood** which is circulated throughout the entire body.

### Heart



An organ which constantly pumps **blood** around the **circulatory system**.

### Blood Vessels



Blood vessels are channels that carry blood throughout your body. There are three types of blood vessels: veins, arteries and capillaries.

### Oxygenated Blood

Blood carrying **oxygen**. It is pumped from the **heart** to the rest of the body.

### Deoxygenated Blood

Blood where most of the **oxygen** has already been transferred to the rest of the body.

### Drugs



Any chemical substance that causes a change in an organism's physiology or psychology.

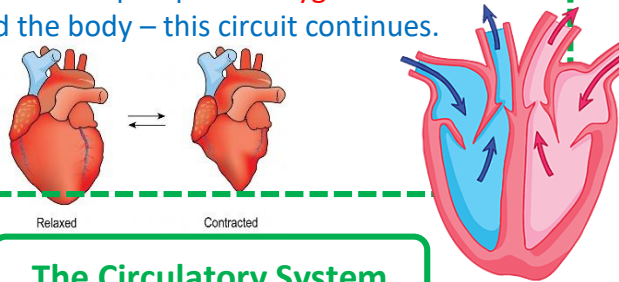
### Nutrients



Substances in food that our bodies process to enable it to function

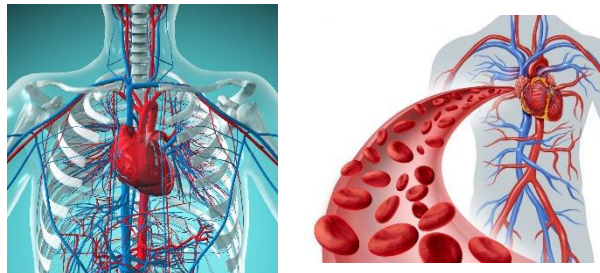
## The Heart

The **heart** is a powerful organ which has four chambers. It is situated between your lungs and protected by the ribcage. The main job of the heart is to **PUMP** blood around your body. The heart receives **deoxygenated blood**, which is pumped to the lungs to collect oxygen. This is now oxygenated and returns to the heart. The heart then pumps this **oxygenated blood** around the body – this circuit continues.



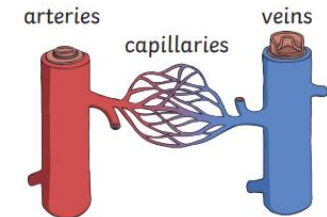
## The Circulatory System

Humans and many other animals depend on **blood** flowing through their bodies to keep them alive. The **blood** travels through a system that includes the **heart** and a network of blood vessels. This is called a **cardiovascular system**.



## Blood Vessels

This vast system of blood vessels - arteries, veins, and capillaries - is **over 60,000 miles** long. That's long enough to go around the world more than twice! Blood flows continuously through your body's blood vessels. Your heart is the pump that makes it all possible.



## Arteries

Arteries carry **oxygenated blood** out from the **heart** to the entire body.

## Veins

Veins return **deoxygenated blood** to the heart.

## Capillaries

Capillaries are tiny passages that connect the arteries and the veins to the body's tissues

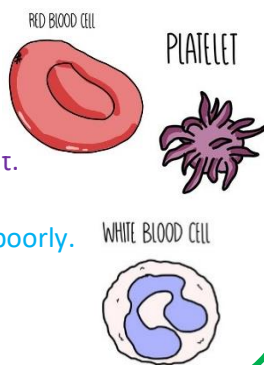
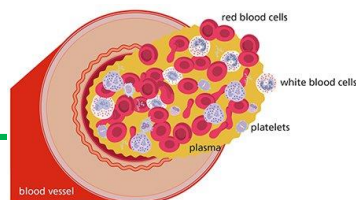
# Knowledge Organiser – Animals Including Humans (Year 6)



## What is in our blood?

Your blood is made up of liquid and solids. **The liquid part, called plasma, is made of water, salts, and protein.** Over half of your blood is plasma. The solid part of your blood contains red blood cells, white blood cells, and platelets.

- ✓ Red blood cells carry oxygen around our body.
- ✓ Platelets help stop bleeding when you have a cut.
- ✓ White blood cells fight infection when you are poorly.



## Exercise



Regular exercise is vitally important for both our physical and mental health. Doing **one hour** of exercise per day has a huge positive effect on your body and mind. Moving and being active every day is important and has many benefits:

Improved sleep

Stronger bones and muscles

Reduces stress

Reduces illness

Keeps your heart healthy

Energy levels

Improves brain power

Supports weight loss

Improves happiness



## Drugs and Alcohol

Alcohol is a drug produced from grains, fruits and vegetables when they are put through a process called fermentation.

**Legal drugs** - These drugs are prescribed by a doctor and appear on your medical record.

**Illegal drugs** - Recreational drugs are not used to treat illness or disease. They are taken by choice and are illegal to take, buy, sell or be in possession of. They have seriously negative effects on our body.



## Water

With **60%** of our body being made up of water it is important to drink water throughout the day. Children should aim to drink 6-8 cups of water every day. Adults should aim to drink 2L of water every day.



## Carbohydrates

### Carbohydrates



Carbohydrates provide us with energy and should make up one-third of our diet.

### Protein

### Protein



Protein builds, maintains and replaces the tissues in our body. Our muscles, organs and immune system are mostly made up of protein.

### Vitamins

### Vitamins



We need vitamins and minerals to help us grow, to see correctly, to form bones, muscles, skin and organs, as well as to help us battle infections.

### Dairy

### Dairy



Important minerals like calcium and phosphorus help children build strong bones and teeth.

### Sugar & Fat

### Sugar & Fat



We need enough fat in our diet to help the brain and nervous system develop normally. They also help absorb essential vitamins.



# Knowledge Organiser – Earthquakes and Tsunamis (Year 6)



## Key Vocabulary

**Amplitude** The **amplitude** is the size of the wiggles on an earthquake recording.

**Aftershock** **Aftershocks** are smaller earthquakes which occur after a large earthquake.

**Earthquake** An **earthquake** is any sudden shaking of the ground caused by the passage of seismic waves through Earth's rocks. Seismic waves are produced when some form of energy stored in the Earth's crust is suddenly released, usually when masses of rock straining against one another suddenly fracture or 'slip'.

**Intensity** **Intensity** is a measure of the size of an earthquake based on observation of the effects of the shock on the earth's surface.

**Location** A **location** is the place where something happens or is situated.

## Massive Quakes

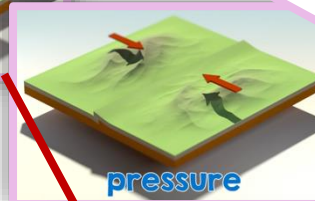
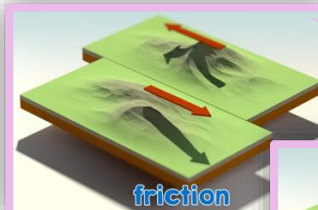
Indian Ocean: 26<sup>th</sup> December 2004 – 9.1-9.3 on the Richter scale

Haiti: 12<sup>th</sup> January 2010 – 7.0 on the Richter scale

Japan: 11<sup>th</sup> March 2011 – 8.9 on the Richter scale

Nepal: 25<sup>th</sup> April 2015 – 7.8 on the Richter scale

Amazingly, every 30 seconds there is an earthquake somewhere on Earth. However, most are minor.



When these forces, friction or pressure are released they produce a violent jolt that shakes the land: an earthquake.

The Earth's surface is made up of a number of plates that are almost always moving. Most earthquakes happen where these plates meet.

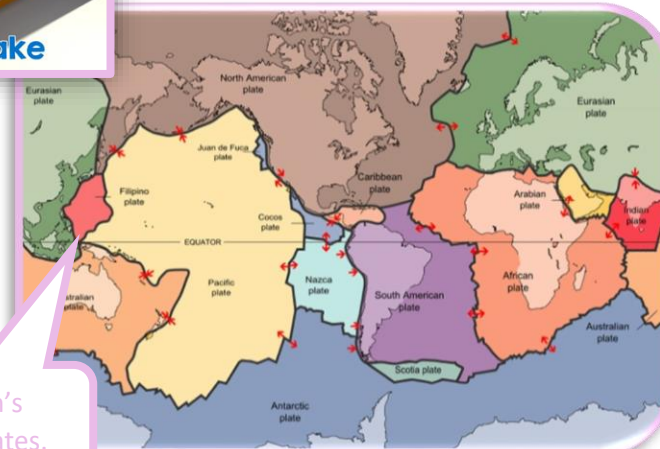
Some of the plates slide past each other, causing *friction* to build up.

While some move towards each other, causing a build-up of *pressure*.



Although most are minor, a major earthquake can cause a lot of destruction.

The Earth's tectonic plates.





## Key Vocabulary

### Magnitude

The **magnitude** is a measure of the size of an earthquake based on the quantity of energy released: specified on the Richter scale.

### Recurrence

If there is a **recurrence** of something, it happens again.

### Tectonic Plates

The Earth's crust and upper part of the mantle are broken into large pieces called **tectonic plates**.

### Tremors

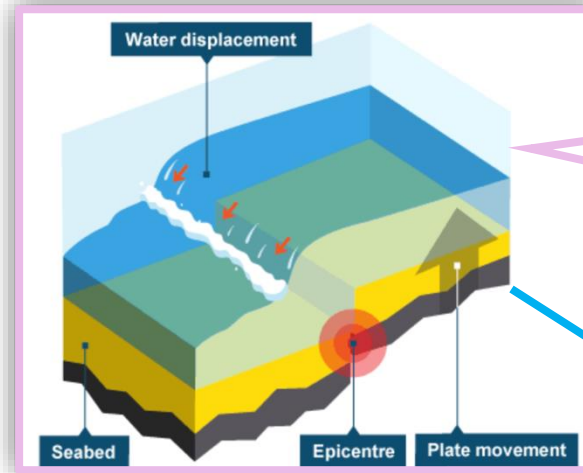
A **tremor** is a small earthquake.

### Tsunami

A **tsunami** is a very large wave, often caused by an earthquake, that flows onto the land and destroys things.

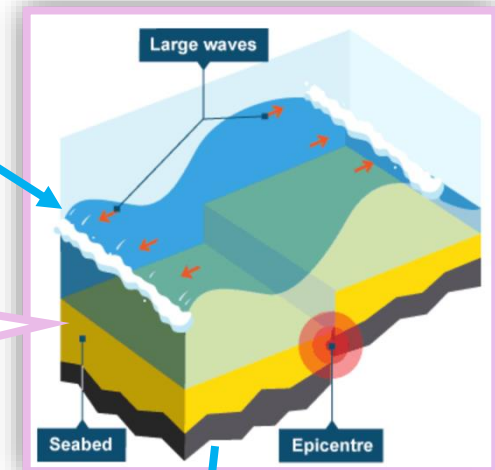
### Seismograph

A **seismograph** is an instrument for recording and measuring the strength of earthquakes.



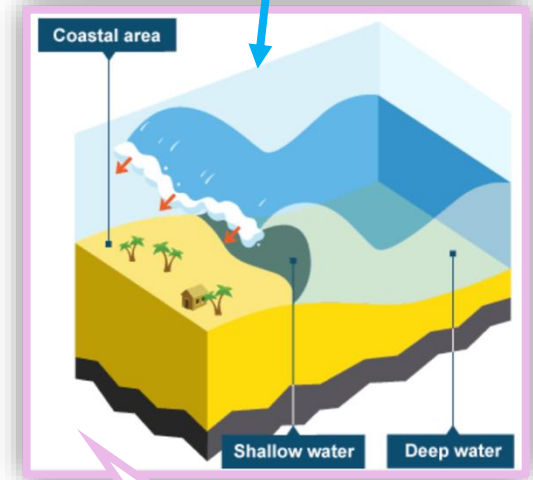
Earthquakes which occur under the water form a tsunami.

The water is displaced (moved from its usual position), creating a wave which spreads out. The wave moves through the ocean at speed.



## Boxing Day Tsunami

- A huge volume of water was shifted by the sudden rise of part of the sea bed along a 1,600km fault line. The waves raced across the Indian Ocean towards land.
- When they hit the coast, the tsunami waves (which were up to 30m high) caused widespread flooding of towns and villages.
- Indonesia was the worst affected, followed by Sri Lanka, India and Thailand.
- Altogether, more than 200,000 people were killed in 14 countries.



The tsunami slows as it reaches the shore but the waves increase in height.

The word tsunami means 'harbour wave' in Japanese.

