



EMPIRIBOX

Primary School Science

Here at Empiribox, we combine keeping our bodies fit and healthy into learning about how they work. We see the two things running parallel and give children the chance to explore how to care for themselves at the same time as learning about their eyes, ears, organs and muscles work.

In this activity, children will learn about the main organs in the body and what they do.

Spectacular Science

Inside the Body

Do you know what each body part does?

Task: Find out what each of the body parts is responsible and where it is in the body

Activity 1

As a class, you will learn about the different organs in the body and where they are in the body using our fact sheets. The organs you will be learning about today are;

1. Brain
2. Heart
3. Lungs
4. Intestines
5. Kidneys
6. Liver

Using the fact sheets provided, learn together as a class what each organ is for, where it is in the body and some cool facts!

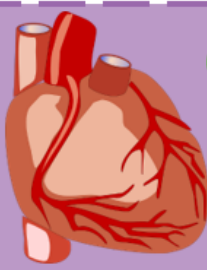
Activity 2

Using the cut outs provided, ask children to cut out each body part and can stick them in the right place on Frank.

Top Tips

For more advanced pupils, see if they can label the body parts and the function of each. Really advanced pupils can even write a paragraph on how all the body parts are connected.

★ THE HUMAN HEART ★





Key Facts

1. The Heart is responsible for pumping blood all around the body
2. Your heart is about the same size as your fist
3. The heart has two chambers; one for blood that has oxygen in and one for blood without oxygen


Where is it?
The heart is located on the upper left-hand side of your chest and if you place your hand here, you will be able to feel it beat; this is called your pulse or heart rate. You can feel your heart pumping blood in other places too, like your wrists and neck.

Your Heart Rate
Your heartrate will change depending on how much exercise you do. To count your heart rate, you count how many beats you feel in one minute. For example, someone may have a heart rate of 68 BPM (Beats Per Minute).
What happens to your heart rate when you skip for 2 minutes without stopping? Remember to record your BPM before and after you do your skipping!



 **EMPIRIBOX**
Primary School Science TEL: 01865 670 067 | EMAIL: info@empiribox.org | WEB: www.empiribox.org

★ THE HUMAN BRAIN ★





Key Facts

1. The brain works a lot like a computer and controls every single part of your body, transferring signals through things called nerves
2. Your uses about 20% of all your oxygen
3. There is no known limit to how much the brain can remember or new things it can learn

Where is it?
The brain is located in your head, also known as your skull. However, there are nerves that run from your brain all the way around your body to help with it sending signals to your fingers, feet, eyes and everywhere else! These signals help us to feel things, move and understand the world around us.

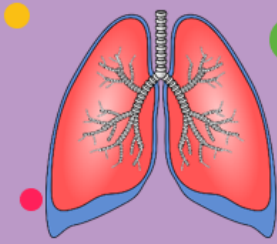
Brain Power
Your brain will not be able to work unless you fuel it and that means eating a balanced diet! The brain loves something called 'omega 3 fatty acids' and all types of fat, but not fat from chocolate bars, something we call "healthy" fats found in the below foods;
Avocado | Walnuts | Dark Chocolate (in small doses!) | Oily Fish | Olive Oil



 **EMPIRIBOX**
Primary School Science TEL: 01865 670 067 | EMAIL: info@empiribox.org | WEB: www.empiribox.org



THE HUMAN LUNGS



Key Facts

1. The lungs help us to take oxygen out of the air and pump it all around our bodies
2. The right lung is larger than the left lung to make room for the heart
3. If you laid out all the tissue in the lungs they would be the same size as a tennis court

Where is it?

The lungs are located in the chest. They are protected by the ribcage which moves out as they expand with air. The ribcage has lots of muscles in between each rib to help with breathing and below the lungs is a muscle called the diaphragm.

Lung Capacity

Lung capacity doesn't mean how big your lungs are or how much air you can fit in them, it is talking about how efficient your lungs are at getting oxygen out of the air and into your blood as then taking the carbon dioxide out your blood and back out into the air.

You can increase your lung capacity by doing more cardiovascular exercise like running, swimming or cycling.



THE HUMAN INTESTINES



Key Facts

1. The intestines are made up of two types; large and small named by how wide they are, not how long
2. Inside the intestines, there are lots of little hair like fibres called villi that help guide food through
3. Your intestines suck out all the nutrients from your food and break it down so it can be used in the body

Where is it?

The intestines are located in the lower part of you belly, right behind your belly button. They start at your stomach nearer the top and work their way down towards your bottom. When they have absorbed all the nutrients from food, they get rid of the waste and turn it into faeces or urine.

Flatulence

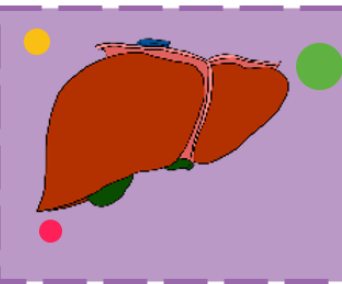
To help us break down food in the intestines and absorb all the nutrients, we need lots of friendly bacteria. When these bacteria are breaking food down, they release small amounts of air that get trapped in the digestive system. Most of this gas is absorbed into the blood stream, but some of it needs to come out another way! This is all totally normal, and people will 'pass gas' 5-15 times a day. Some foods cause people to pass more gas, like the below;

Beans | Lentils | Broccoli | Brussel Sprouts | Dairy





THE HUMAN LIVER



Key Facts

1. The liver is the largest internal organ
2. It is responsible for hundreds of different things, like fighting infections, filter your blood and balancing your hormones
3. It can hold up to 10% of all your blood at one time and pumps about 1.5 litres of blood through it every minute

Where is it?

The liver is in the upper right-hand side of your torso, running underneath the lungs and heart but above the stomach. When you are fully grown, it is about the same size as an American football.

Regeneration

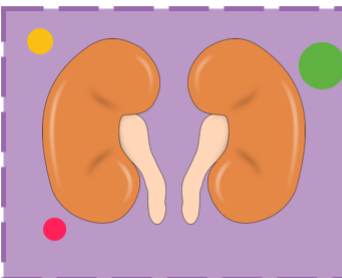
The liver is the only organ in the body that can completely re-grow, even if it is taken out of the body or 75% of it is removed! However, it is still very important to look after the liver because of how important it is to the body.

Here are some **Top Tips** for a healthy liver:

1. *Keep a healthy weight*
2. *Eat a balanced diet*
3. *Avoid toxins, even in skincare products as these get absorbed into the body and processed by the liver*



THE HUMAN KIDNEYS



Key Facts

1. The kidneys get rid of waste products in your body by catching the bad bits in tiny hair like fibres that coat the inside of them
2. They help to keep your blood pressure even
3. They help make red blood cells, which in turn carry oxygenated blood all around the body

Where are they?

The kidneys are found at the back of your body about mid-way up your back. They are protected by your ribs and are about 4-5 inches long each.

Keeping them healthy

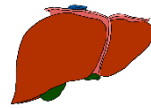
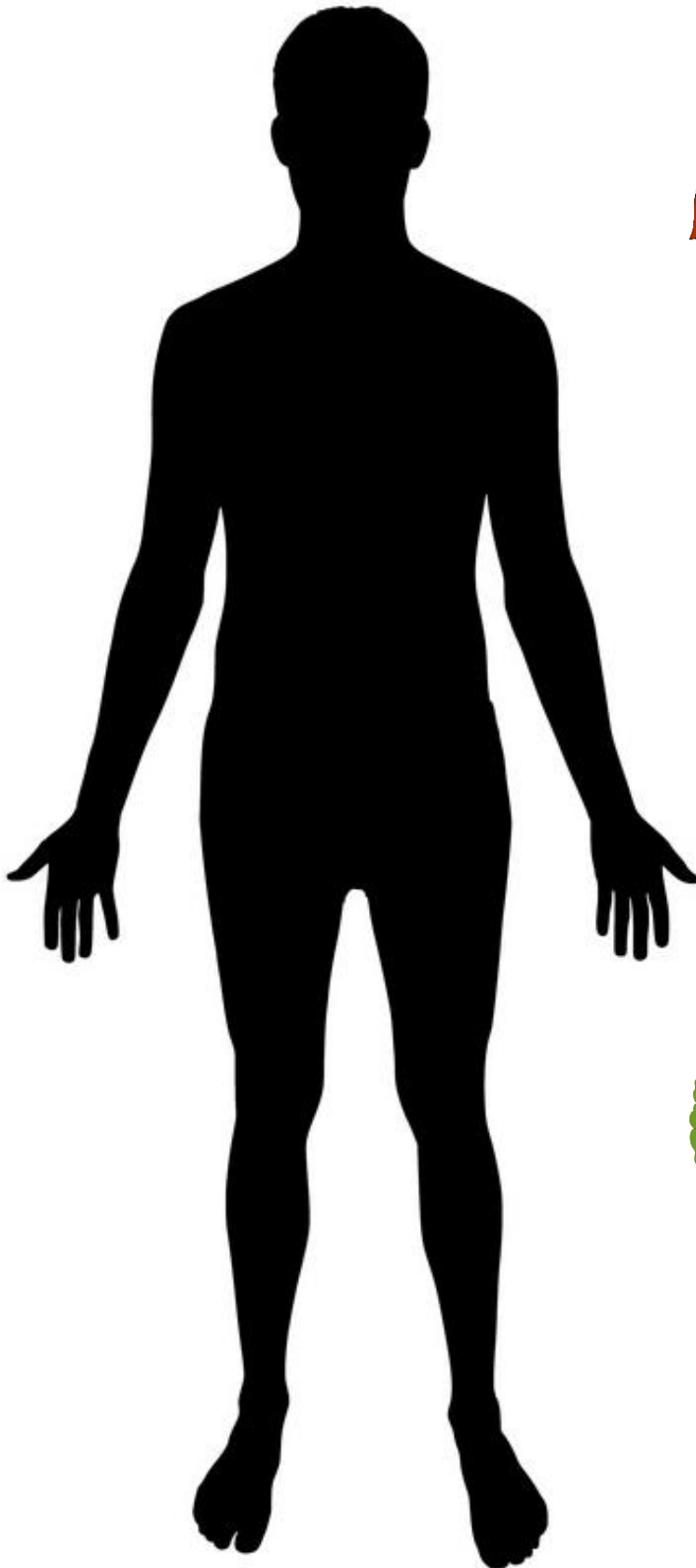
The kidneys come in pairs, but people can survive just as well with only one! It is very important to keep them healthy.

Top Tips

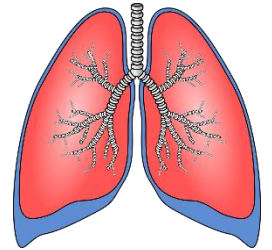
1. *Drink lots of water to keep blood pressure higher*
2. *Eat a balanced diet making sure you get lots vitamins and minerals*
3. *Stay away from drugs like alcohol or cigarettes*



**Can you put all of Frank's
organs back in his body?**



Liver



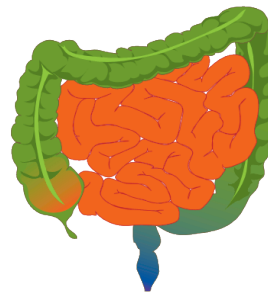
Lungs



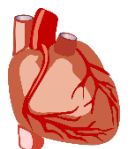
Kidneys



Brain



Intestines



Heart

Cut out each body part and
stick it onto Frank