

The Human Body

Teacher's notes

Level:	Upper Intermediate (and above)
Topic:	The Human Body
Subject(s):	Science
Time (approx):	30 minutes +
Preparation:	One set of questions and one set of information sheets, cut up.

Procedure:

Activity

- 1 Cut out the information sheets and post them around the room on the walls.
- 2 Cut up the question sheet and divide the questions into sets – one for each group of students.
- 3 Divide your class into small groups. Tell each group they will need paper and pens.
- 4 Explain that you have questions about the human body. Each group will send one person to you to collect a question. They should return to the group and write down the question.
- 5 The answers to the questions are somewhere in the information sheets posted around the room.
- 6 Once the students have written down the question they should get up and try to find the answer.
- 7 As soon as they have found the answer they should rejoin as a group and write down the answer.
- 8 Once they have done this they should return the question to you and tell you the answer. If they are correct, you can give them the next question.
- 9 If one group is faster than the other groups, you can add questions to their set from the ones the other groups have completed. In this way you can ensure that everyone finishes the activity at about the same time.
- 10 Once all the questions have been answered, make new groups with one person from each of the original groups.
- 11 Tell them to exchange information as they have answered different questions.
- 12 Finally, go through the questions and answers explaining any information, or any vocabulary, the students didn't understand.

Note: If you want to add an extra dimension to the activity, you can cut each question up into individual words and put these in envelopes. You then hand the groups envelopes containing the cut up questions and their first task is to put the words together to make the questions.

Key

- 1 The trunk
- 2 Thorax
- 3 The big toe only has two phalanges, the other toes have three.
- 4 In the chest cavity

- 5 Taste and smell
- 6 Bile
- 7 Because they have to support your weight and help you balance.
- 8 When you exercise or when you are frightened or excited.
- 9 Your legs and feet
- 10 They join (fuse) together.
- 11 Melanin
- 12 Oxygen and food
- 13 Six litres
- 14 The skin
- 15 Twenty-six
- 16 Phalanx (phalanges)
- 17 Because they make your blood clot and stop you bleeding to death.
- 18 Liver
- 19 Epidermis and dermis
- 20 The abdomen (trunk)
- 21 The pupil
- 22 Four (sweet, sour, salt and bitter)
- 23 Four months
- 24 Epidermis is made up of dying or dead skin cells, while the cells in the dermis are living.
- 25 A protein (which collects oxygen from the lungs)
- 26 Fourteen
- 27 The lower trunk
- 28 Twenty-two
- 29 In the hair
- 30 A combination of taste and smell
- 31 One (the mandible or lower jaw)
- 32 45%
- 33 In the eye
- 34 Protect your body from infection
- 35 Twenty-eight (three in each finger and two in each thumb)
- 36 Senses
- 37 The ribcage
- 38 Heart
- 39 Liver
- 40 Lower jaw

Useful websites

<http://www.bbc.co.uk/science/humanbody/>

One of the most detailed sites you could ever hope to find on this topic. It includes some fantastic interactive games.

Information Sheets

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Regions of the Body

The human body is divided into five regions. These are; the head, the neck, the trunk, the upper extremities (the arms and hands) and the lower extremities (the legs and feet). The head, of course, is where you find the brain which is protected by the skull. The bones of the skull also support and shape the face. The trunk is the central part of the body and contains all the vital organs apart from the brain. The trunk is divided into two halves; the top half which is called the thorax or chest, and the bottom half which called the abdomen. The heart and lungs are found in the thorax and are protected by the ribcage. The kidneys and most of the digestive system are in the abdomen and are protected by muscles rather than bones.

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The Skull

The skull is made up of twenty-two bones in total and is divided into two sets – the cranial bones and the facial bones. The cranium is extremely strong and is made up of eight bones that link together. When you are young these bones are not joined together, but as you grow older they fuse, or join, together. The other skull bones are part of the facial set. All of the bones in the skull are fixed, that is they cannot move, apart from one – the mandible or lower jaw. This bone is attached to the rest of the skull by two joints and can move up and down and from side to side.

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Hands and Feet

Your hands are the most flexible part of your body. They can cope with lots of different tasks from lifting heavy objects to doing very delicate tasks. There are twenty-seven bones in each hand which is one more than in each foot. Each finger has three bones and each bone is called the phalax as well as three knuckles (these are where the finger bends and are not separate bones). The thumb only has two phalanges (the plural of phalanx) and two knuckles. Feet also contain phalanges in the toes. Just as in the hand, each toe contains three phalanges apart from the big toe which is like the thumb in the hand. The bones in the foot are extremely strong and have to do a lot of work. They have to support the weight of your body and also help you balance.

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Heart, Lungs and Liver

Your heart is the motor of your body. Its function is to pump the blood around your body. In an average lifetime your heart will beat more than two billion times! The speed at which your heart beats will depend on how much oxygen your body needs. When you are resting you need less oxygen than when you are exercising. Your heart rate can also increase when you are frightened or excited. Your lungs are located in your chest cavity and are protected by the ribcage. They are an important part of the respiratory system – breathing system. Their main function is to extract oxygen from the air you breathe and deliver it into the blood and to remove carbon dioxide from the blood. The liver is the largest of all the internal organs and, in adults, can weigh as much as 1.4 kg. The main function of the liver is to clean the blood and adjust the chemical content before the blood flows around the rest of the body. The liver also produces a substance called bile which is used to digest fats.

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Hair and Skin

Although we might not think of it as an organ that is exactly what skin is! In fact, it is the largest organ in the body with an area of about 2 square metres in an adult! Not only does it help protect the rest of the body from physical damage, from micro organisms that might cause infection and from sunlight, but it also acts as a waterproof barrier and stops the body drying out. The skin has many layers but it is divided into two parts; the epidermis (outer layers) which is made up of dying or dead skin cells and the dermis which contains only living cells. The colour of a person's skin is determined by a brownish-black substance called melanin. The more melanin someone has the darker their skin. Melanin is found in the epidermis as well as in hair. Hair grows over almost all the body and helps protect the skin. The strange thing about hair is that it is made of dead cells containing a substance called keratin.

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Blood

Blood is liquid life. It keeps the body supplied with oxygen and food and also carries away any waste products. Blood is made up of three types of cells and plasma. Plasma is the watery part and makes up about 55% of your blood. An adult has about six litres of blood in their body. There are millions of cells in each drop of blood – ninety-nine per cent of these are red blood cells. Red blood cells contain haemoglobin, a protein, which collects oxygen from the lungs and transports it to the rest of the body. These red blood cells live for about four months before being replaced by new ones made by the red marrow contained in your bones. The white blood cells are, in fact, a collection of three types of cells. Together these white cells protect your body from infection. Finally, the third set of cells are called platelets which help your blood clot (that is they help your blood become thick and stop flowing). This is important when you cut yourself because without these platelets you would bleed to death!

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Senses

There are five main senses which are usually associated with particular parts of the body. These are; vision, or sight, connected to the eyes; hearing, connected to the ears; taste, connected to the tongue; touch, connected to the skin and in particular the fingers; and smell, connected to the nose. Two of these – taste and smell – are closely linked together. The tongue can only actually distinguish between four different tastes – sweet, sour, salt and bitter! When we talk about the flavour of food we are talking about a combination of taste and smell. Smell works by detecting chemicals in the air. That's why we might sniff when we are trying to smell something. Vision is often regarded as the most important of the senses and the eyes are very complicated. At the front of the eye is the cornea which is transparent and protects the front of the eye. Then comes the iris which is a ring of muscle which alters the size of the pupil (the black circle in the centre of the eye) to adjust the amount of light that gets in.



Questions

1 What is the central part of your body called?	2 What is another name for the chest?
3 What is one of the differences between the big toe and the other toes?	4 Where in your body are your lungs?
5 Which of the five senses are connected?	6 What is the name of the substance that digests fat?
7 Why are the bones in your feet very strong?	8 When does your heart beat faster?
9 What are your lower extremities?	10 What happens to the cranial bones as you get older?
11 What substance determines the colour of your skin and hair?	12 What does your blood supply your body with?
13 How much blood does an average adult have?	14 Which is the largest organ?
15 How many bones are there in one foot?	16 What are the bones in the fingers called?
17 Why are platelets important?	18 Which organ cleans your blood: your lungs or your liver?
19 What are the two sets of layers of skin called?	20 In which region of the body are your kidneys?
21 What is the name of the little black circle in the centre of your eye?	22 How many different 'tastes' are there?
23 How long do red blood cells live?	24 What is the difference between the epidermis and the dermis?
25 What is haemoglobin?	26 How many facial bones are there?
27 What part of your body is the abdomen?	28 How many bones are there in your skull?
29 Where in the body would you find keratin?	30 What is flavour?
31 How many bones in the skull can move?	32 How much of your blood is made up of cells?
33 Where in the body would you find the cornea?	34 What do your white blood cells do?
35 How many knuckles in your hands do you have in total?	36 What is the name given to vision, hearing, touch, smell and taste?
37 What protects your lungs?	38 Which organ pumps blood

	around your body?
39 Which is the largest internal organ?	40 What is another name for the mandible?