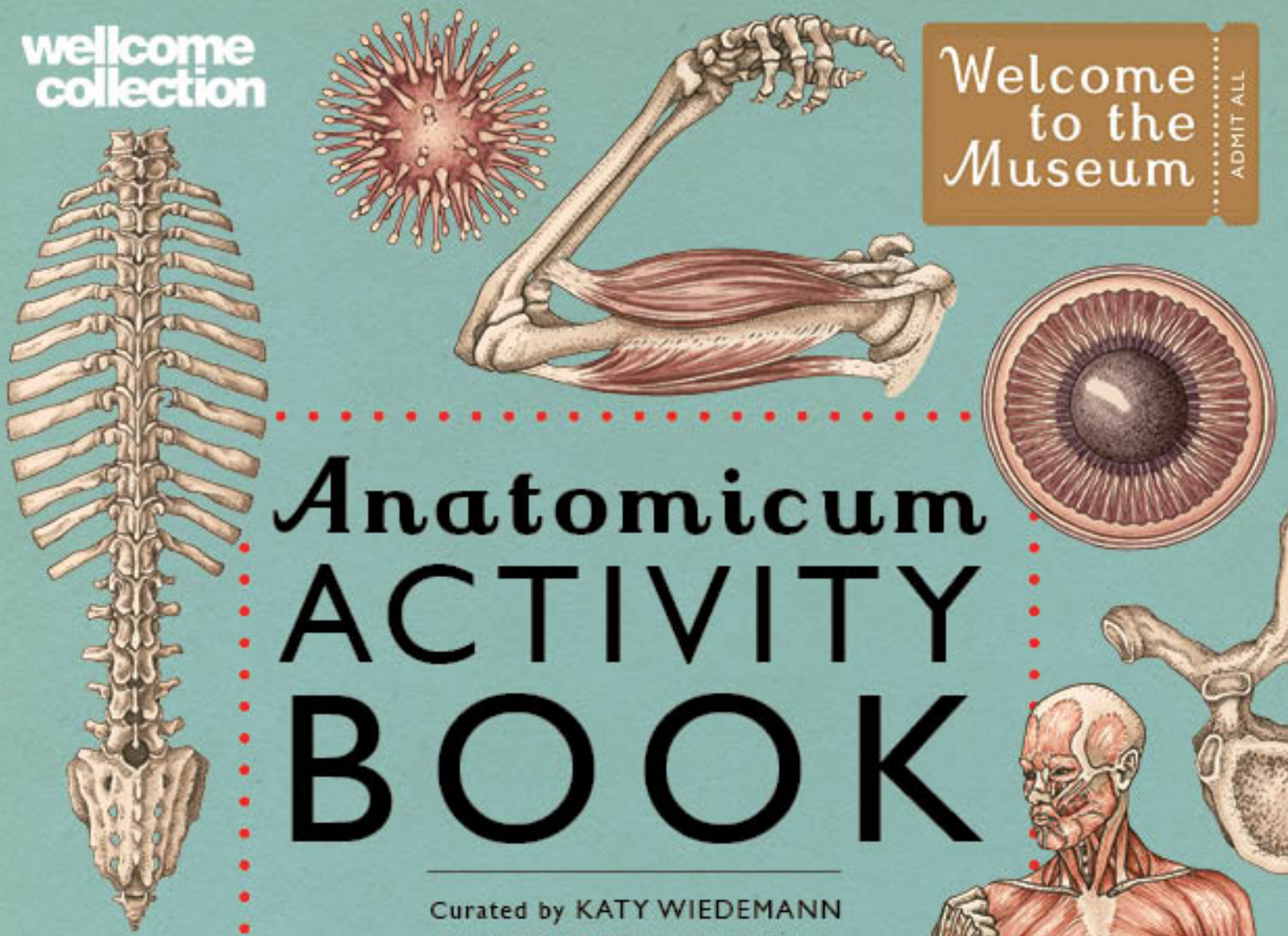
wellcome collection



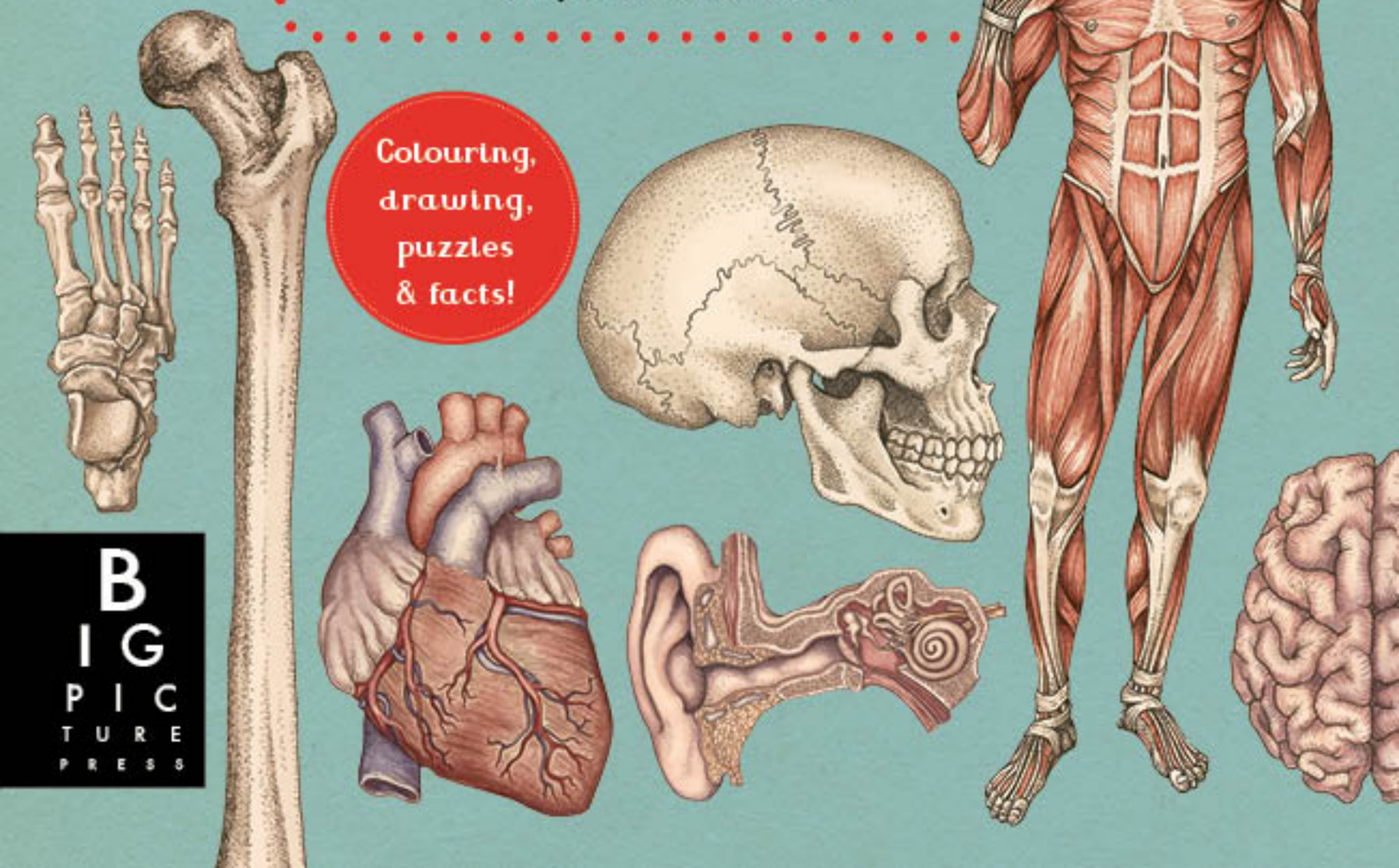
Welcome to the Museum

ADMIT ALL

Anatomicum ACTIVITY BOOK

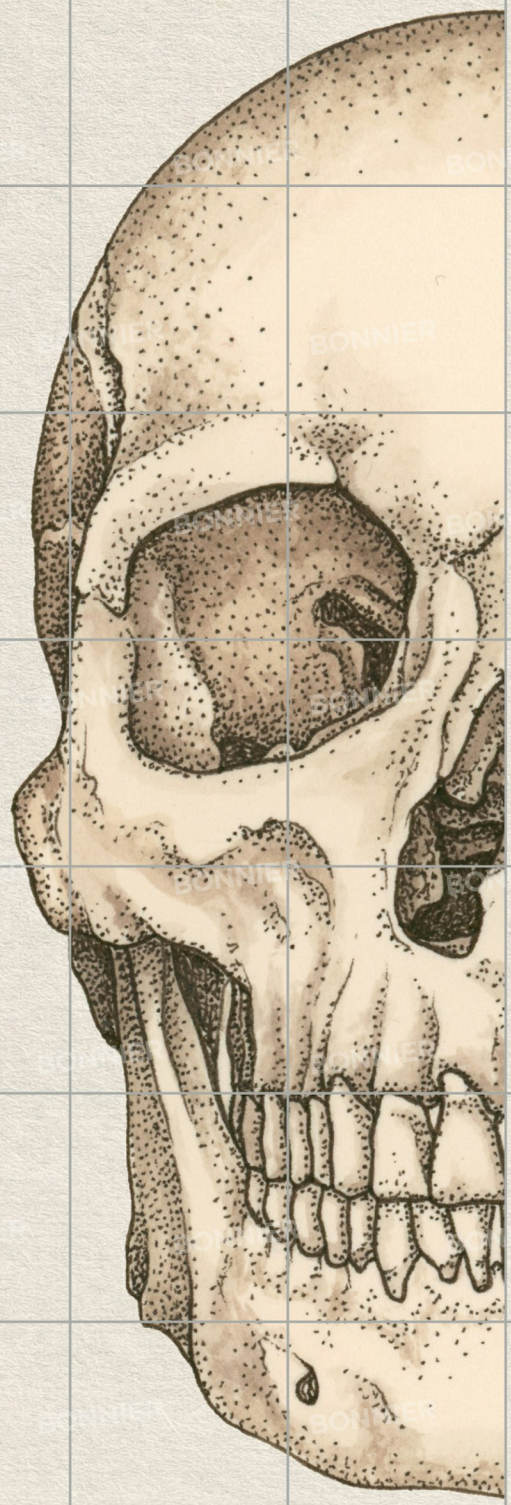
Curated by KATY WIEDEMANN and JENNIFER Z PAXTON

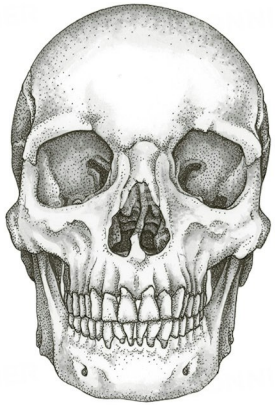
Colouring, drawing, puzzles & facts!



BIG PICTURE PRESS

Complete the other half of this skull, using the grid to help you



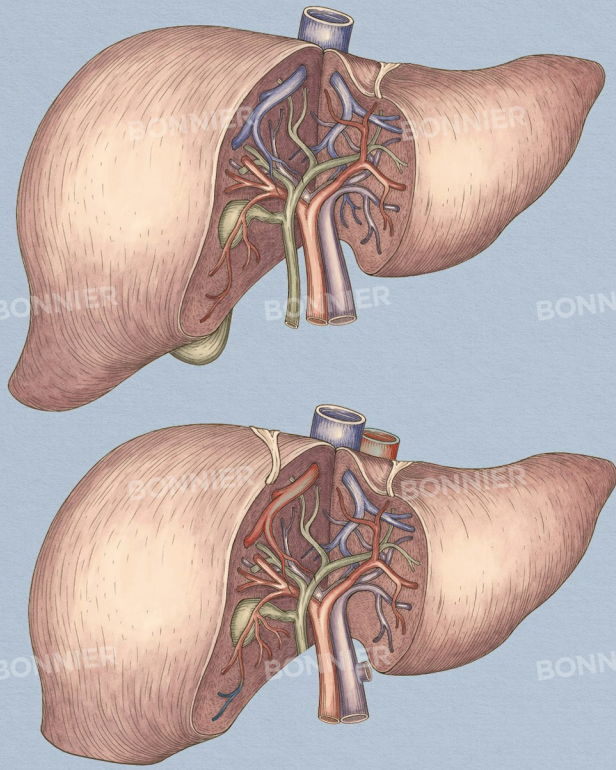


Skull

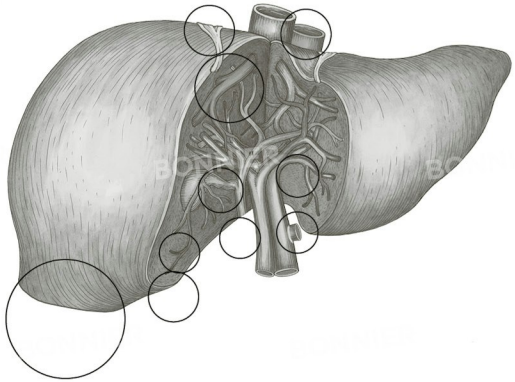
This is the front view of an adult skull. Although it appears to be a single bone, it is in fact formed of 22 individual bones. The top part, or vault, is formed of 8 bones and acts like a helmet, shielding the brain from injury. The other 14 bones provide shape for the face and jaw.

Spot the difference

(there are 10 differences to spot)



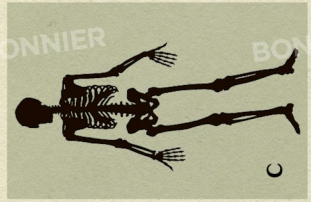
Answers

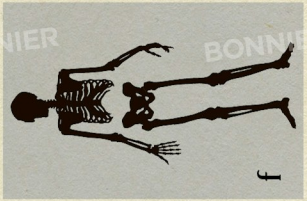


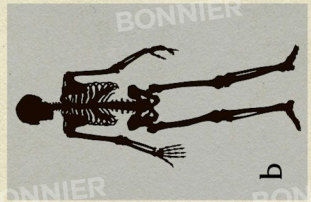
Liver

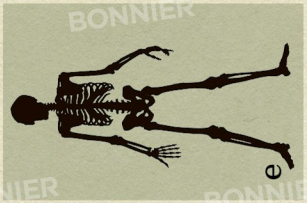
The liver carefully orchestrates hundreds of processes to keep the blood clean and the body healthy. It serves three major roles: cleaning the blood, producing bile (a thick, yellow-green liquid that helps the body digest fat) and storing energy.

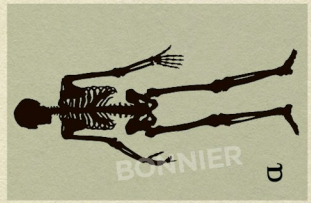
Which silhouette matches this skeleton?

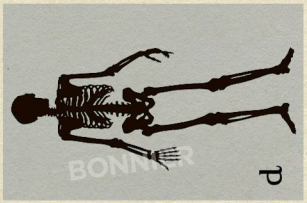


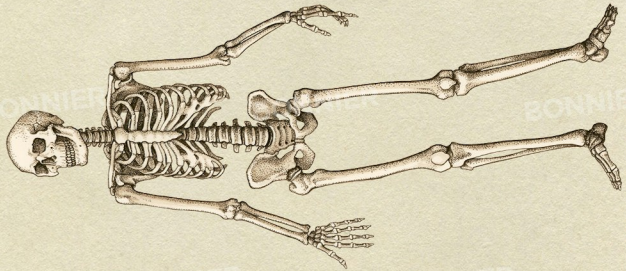




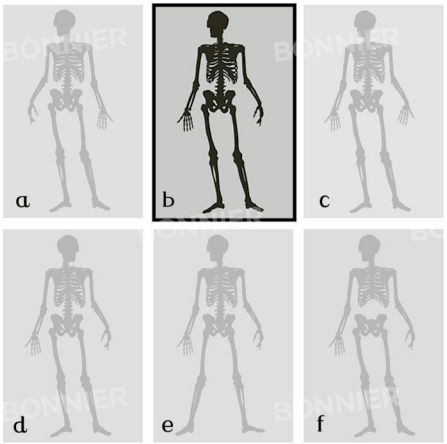








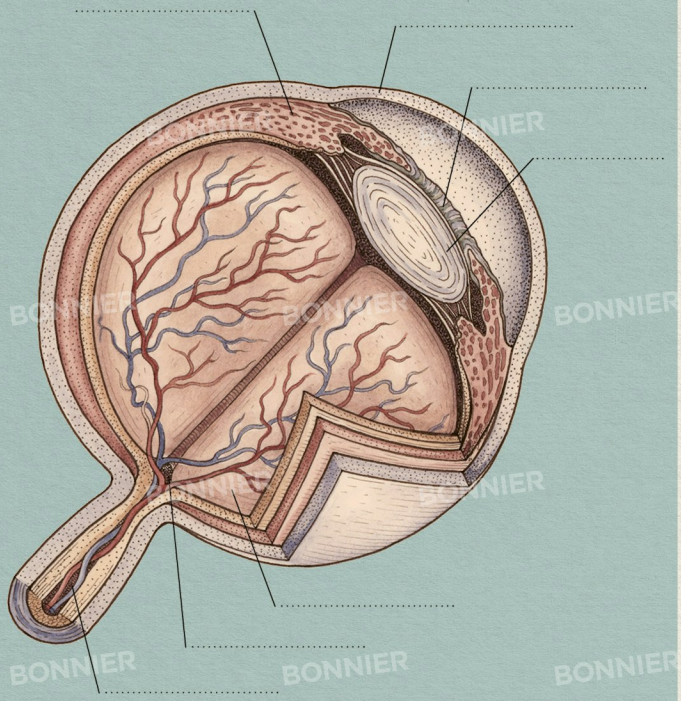
Answer



Skeleton

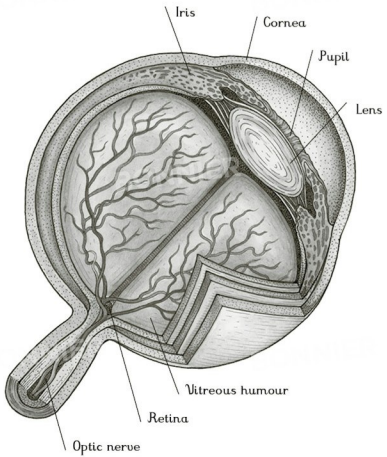
Providing the framework for the entire human body is the skeleton. This hard but flexible scaffold give us our overall shape, supports the muscles, protects the body's soft inner organs and constantly manufactures new blood cells.

Label the parts of the eye

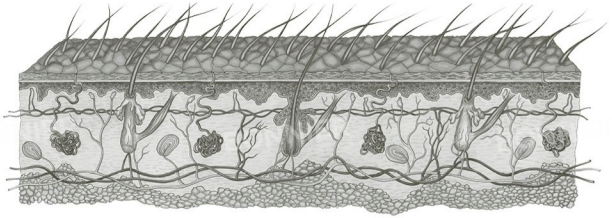


Retina
Cornea
Iris
Optic nerve
Lens
Pupil
Vitreous humour

Answers



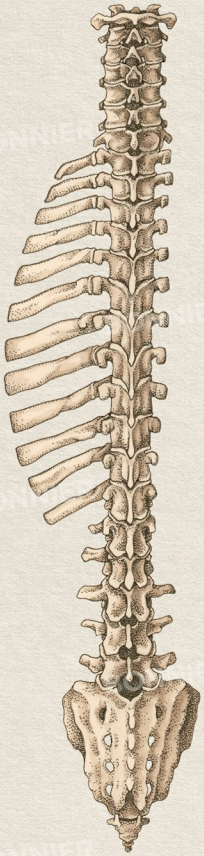
Complete this cross-section of skin and colour it in

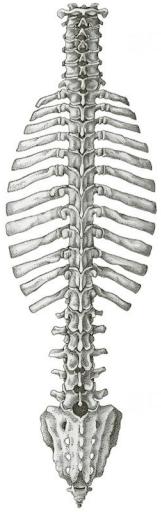


Skin

Forming our whole outer body covering, the skin is part of the integumentary system, a collection of structures including skin, hair and nails, that forms a flexible barrier between us and the outside world. The skin is the largest organ both by weight and surface area.

Draw in the missing ribs



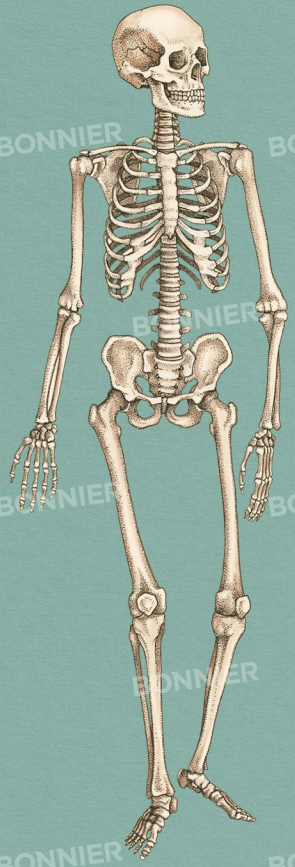


Vertebral column

The vertebral column, or spine, is made up of 33 individual vertebrae. Ribs join up with 12 of them to form the rib cage.

Do you know where these bones are?

(draw lines to show where they can be found on the skeleton)



Ulna

Sternum

Clavicle

Tibia

Fibula

Pelvis

Vertebrae

Metatarsals

Radius

Humerus

Phalanges (hands)

Femur

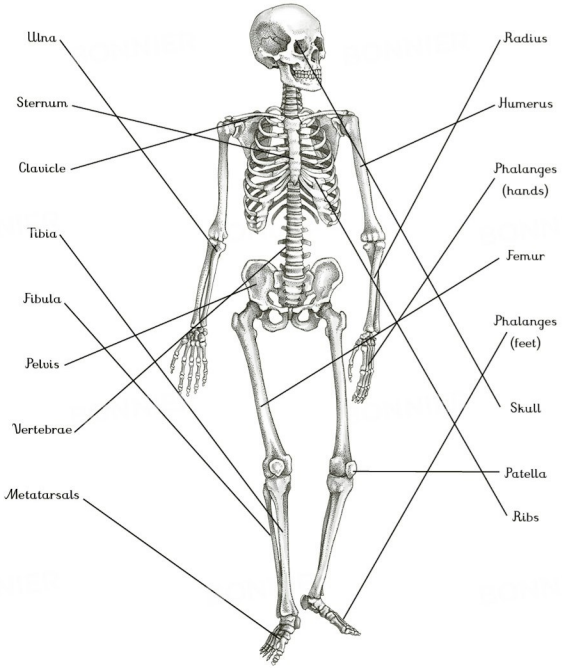
Phalanges (feet)

Skull

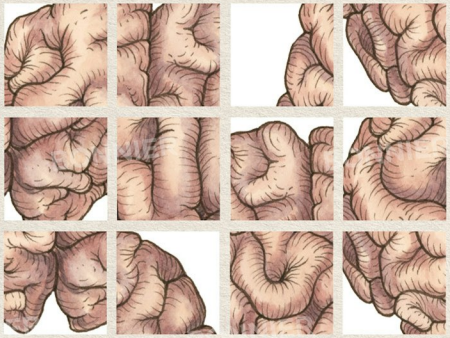
Patella

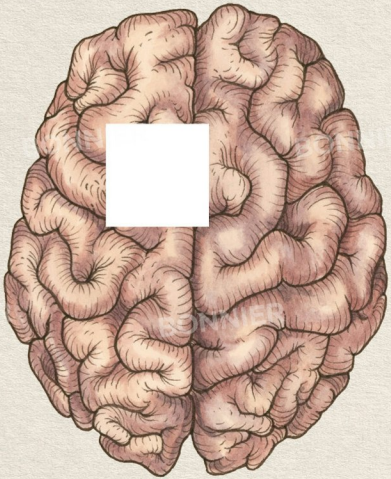
Ribs

Answers

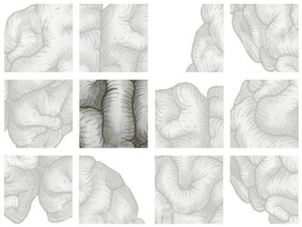


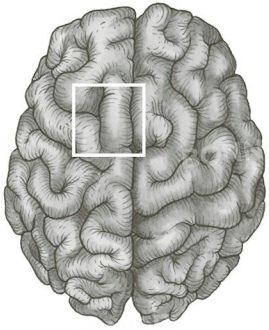
Find the missing square





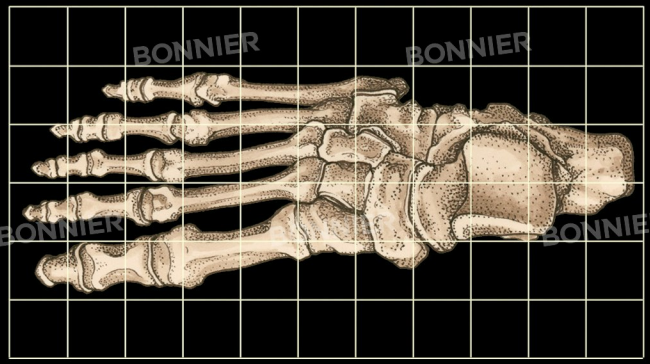
Answer





Draw the foot bones

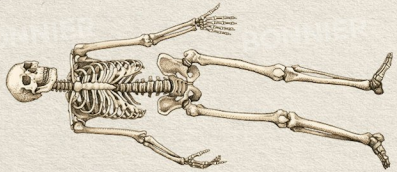
Foot bones



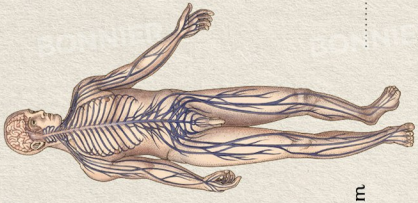
Foot bones

The 26 bones of the foot have a variety of shapes and sizes. The tarsal bones that make up the ankle region are short bones that fit together. They are roughly cube-shaped and support the joints.

Match the systems to their names



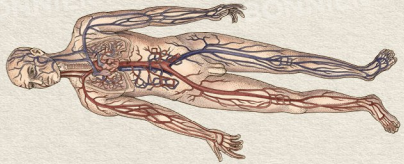
.....system



.....system

.....system

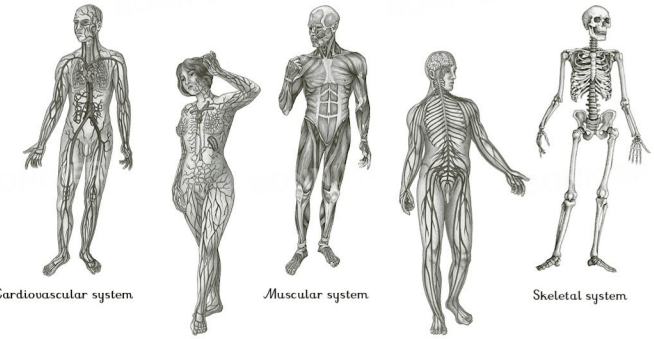
.....system



.....system

Skeletal Muscular Cardiovascular Nervous Lymphatic

Answers



Cardiovascular system

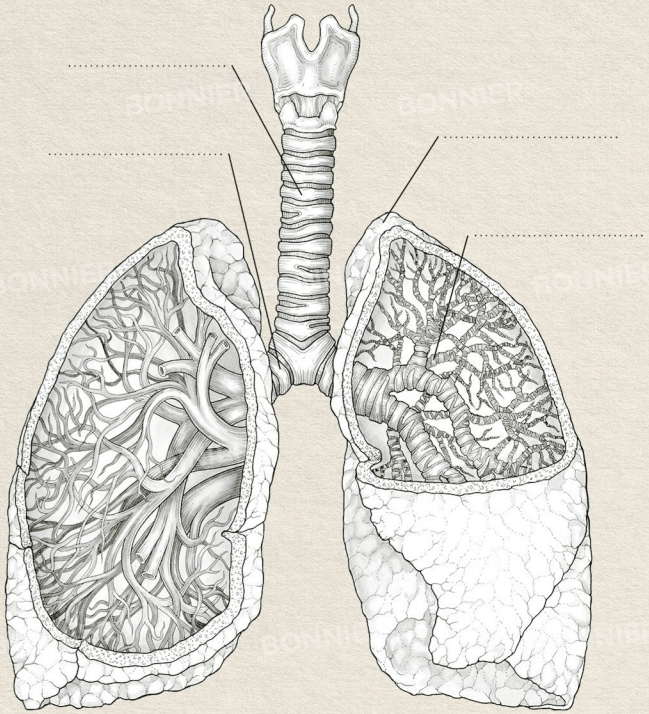
Lymphatic system

Muscular system

Nervous system

Skeletal system

Label the body parts, then colour in the lungs and airways



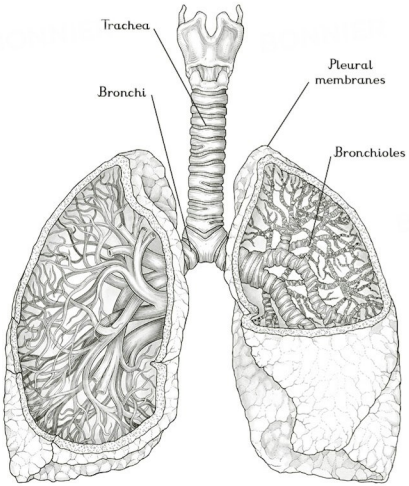
Bronchi

Bronchioles

Trachea

Pleural membranes

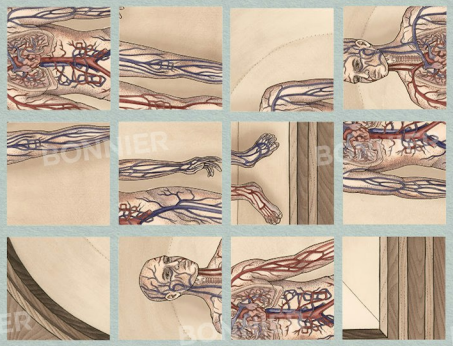
Answers

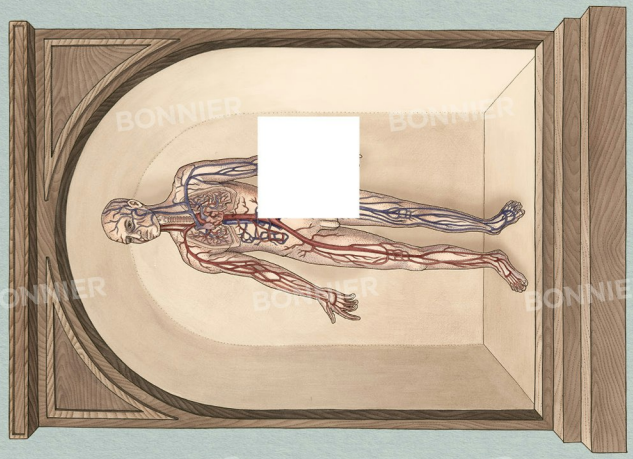


Lungs

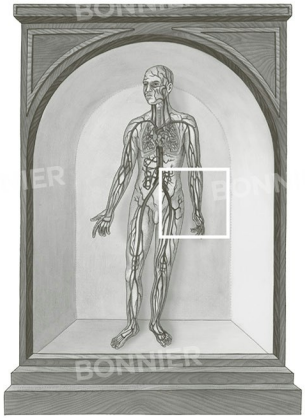
We breathe over 10,000 litres of air each day to keep our cells alive and healthy. Getting all of this air in and out of the body is the responsibility of the lungs.

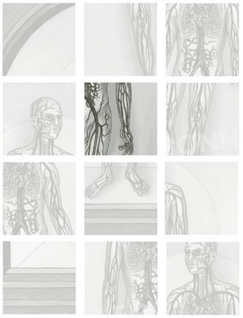
Find the missing square



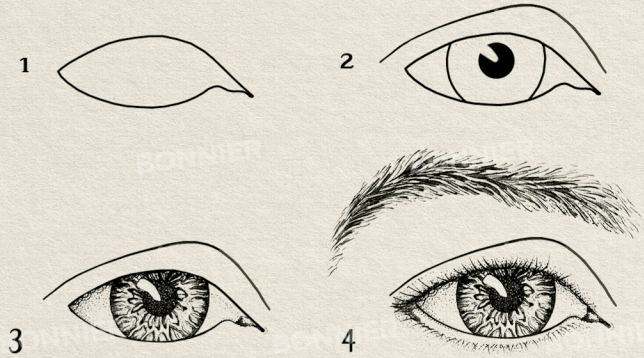


Answer

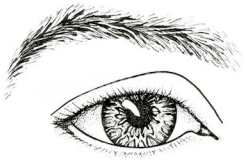




How to draw an eye



Try it yourself

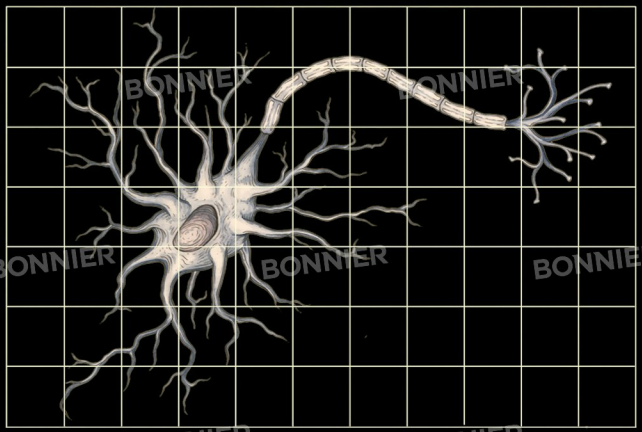


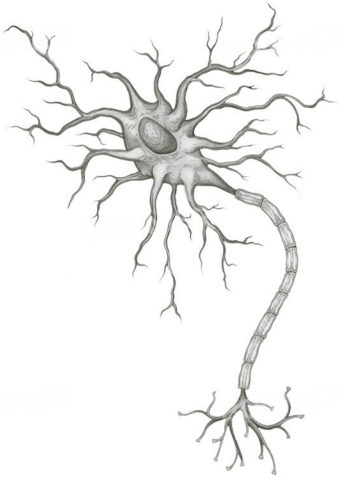
Eye

The eyes are a pair of ball-shaped organs, set within the skull in two spherical holes called orbits. Each eyeball is about the size of a ping-pong ball and their job is to receive light and turn this information into electrical signals that the brain can understand as images.

Draw the neuron

Neuron

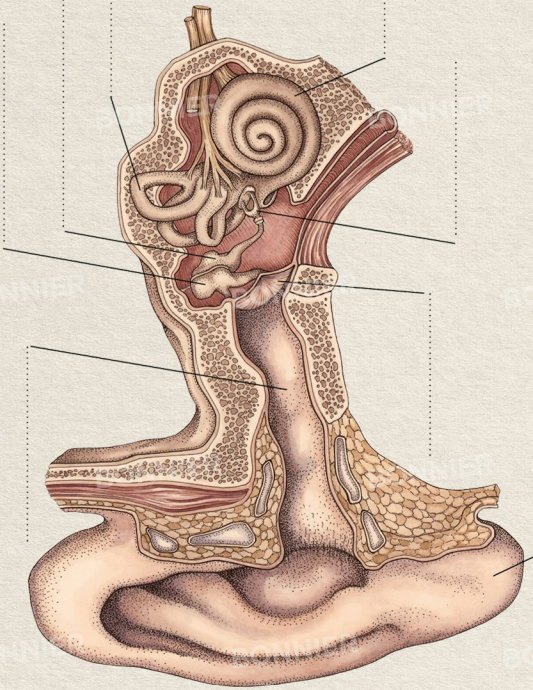




Neuron

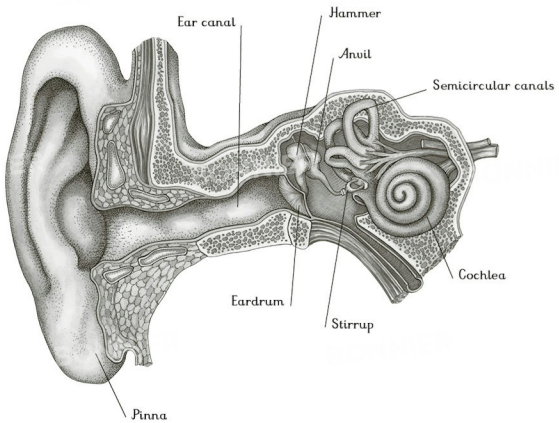
Individual nerves are made of bundles of thin nerve cells called neurons, which run through the body like electrical wires. At the top is the axon, the central part of the nerve along which electrical signals are sent. The myelin sheath, a fatty layer around the axon, acts as an insulating coating.

Label the parts of the ear



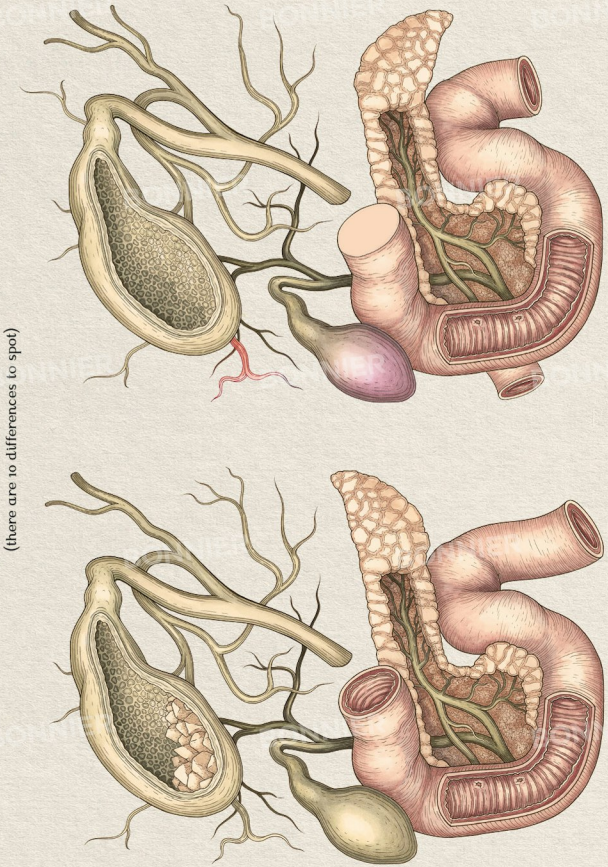
Hammer
Cochlea
Anvil
Eardrum
Stirrup
Pinna
Ear canal
Semicircular canals

Answers

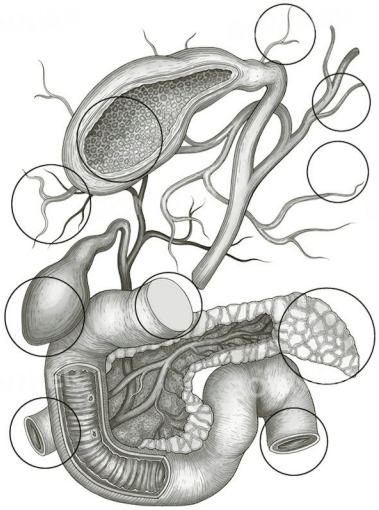


Spot the difference

(there are 10 differences to spot)



Answers



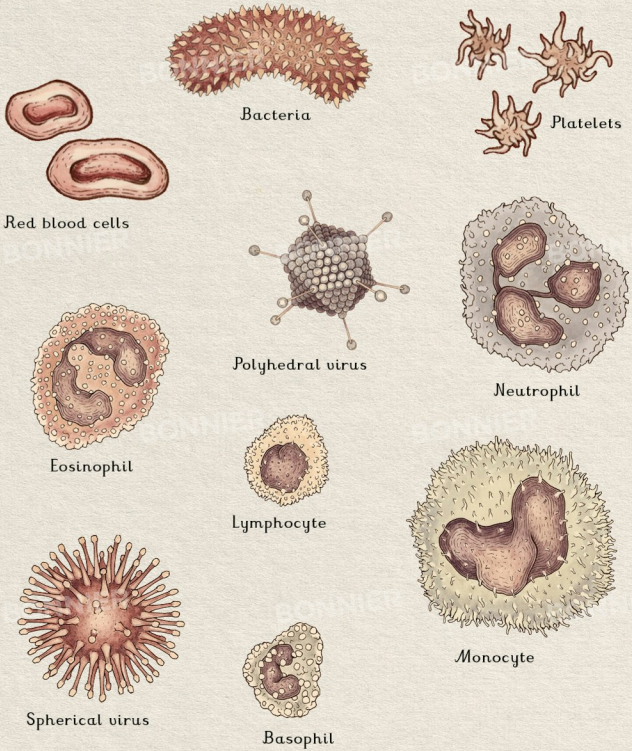
Pancreas and gallbladder

The pancreas releases pancreatic juice directly into the intestines, neutralising acidic chyme before it travels any further through the digestive system. It also releases chemicals such as insulin and glucagon directly into the blood.

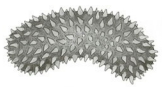
The gallbladder is a small muscular bag used to store bile. In some people, salts and fats in bile can stick together and form small stone-like deposits called gallstones.

Which of these are not a type of blood cell?

(circle the microbes)



Answers



Bacteria

Polyhedral virus

Spherical virus

Match the systems to their names

Male reproductive system

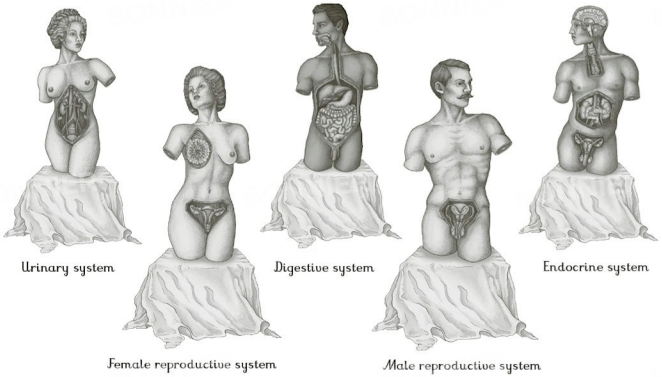
Endocrine system

Female reproductive system

Urinary system

Digestive system

Answers



Urinary system

Female reproductive system

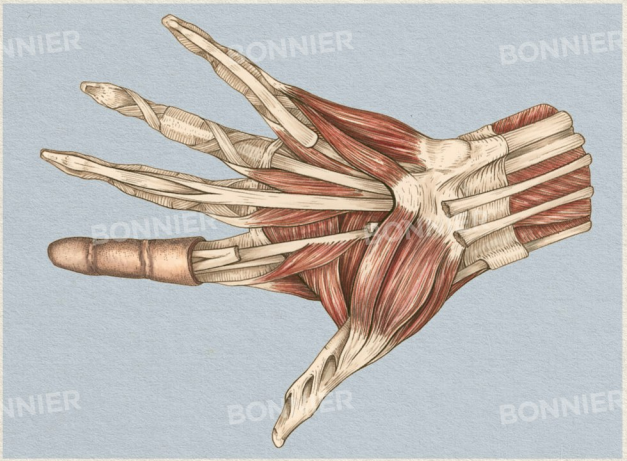
Digestive system

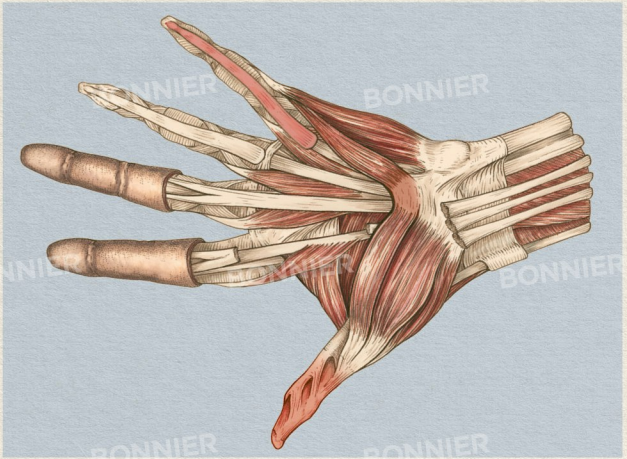
Male reproductive system

Endocrine system

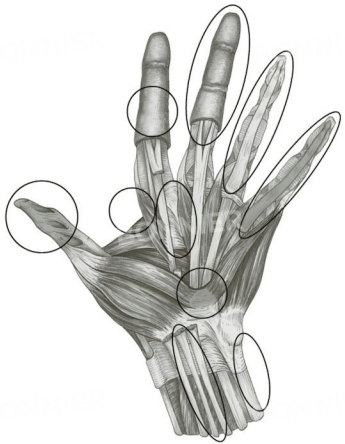
Spot the difference

(there are 10 differences to spot)





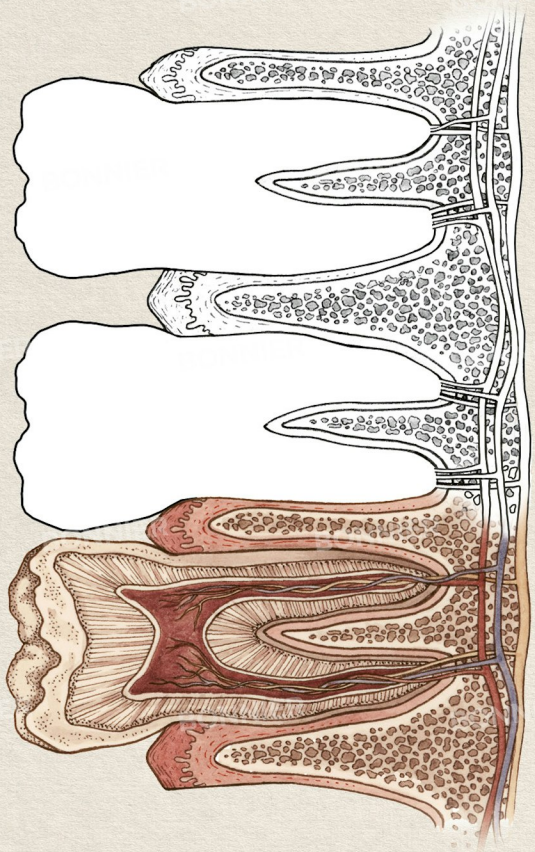
Answers

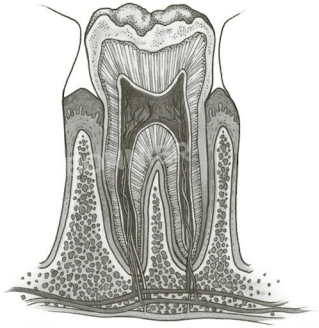


Hand

Muscles in the forearms have long tendons that reach down into the fingers to make our hands and fingers move. These tendons are held in place under little casings called sheaths that help the tendons glide smoothly during movements.

Complete this cross-section of teeth and then colour it in



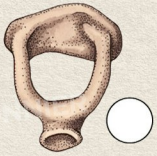


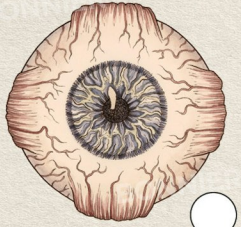
Tooth structure

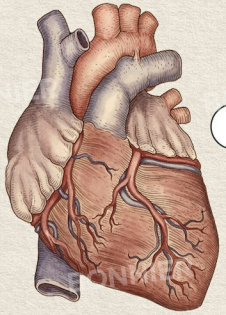
Each tooth is made up of several layers: enamel, the hard outer layer; dentine, which lies beneath the enamel and protects the pulp; dental pulp, containing blood vessels, cells and nerves; the root, which secures the tooth to the gums; and cementum, which secures the whole tooth to the jaw.

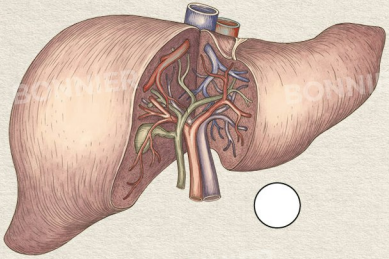
Arrange these body parts into size order

(1 being the smallest and 6 the largest)

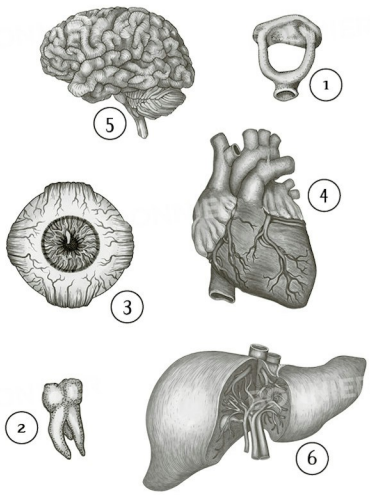








Answers



1. Stirrup
2. Tooth
3. Eye
4. Heart
5. Brain
6. Liver

Draw in the other half of the faces then match them to the actions

Kissing

Smiling and winking

Crying

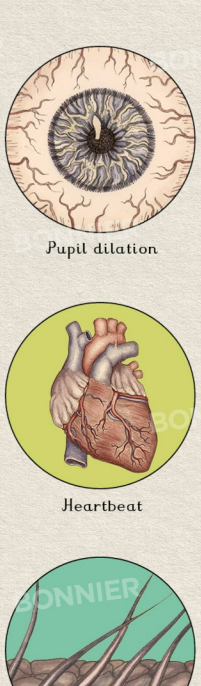
Answers

Crying

Kissing

Smiling and winking

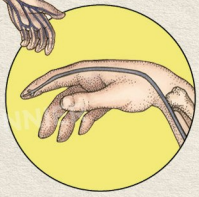
All these functions are controlled by the nervous system. Circle the one that is not controlled automatically



Pupil dilation

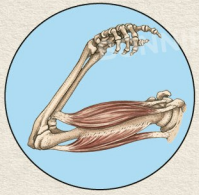
Hearing

Heartbeat



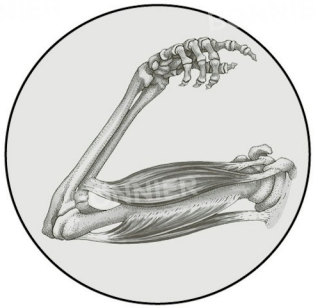
Touch

Goosebumps



Skeletal muscle movement

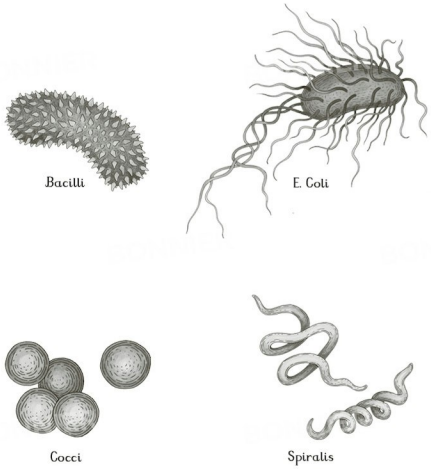
Answer



Skeletal muscle movement

Contraction of *biceps brachii* makes the upper limb bend at the elbow. Skeletal muscles like this one are under voluntary control, meaning we have to think in order to move them. Electrical signals are sent from the brain, via the spinal cord, to nerves within the muscle.

Draw your own bacteria based on these examples

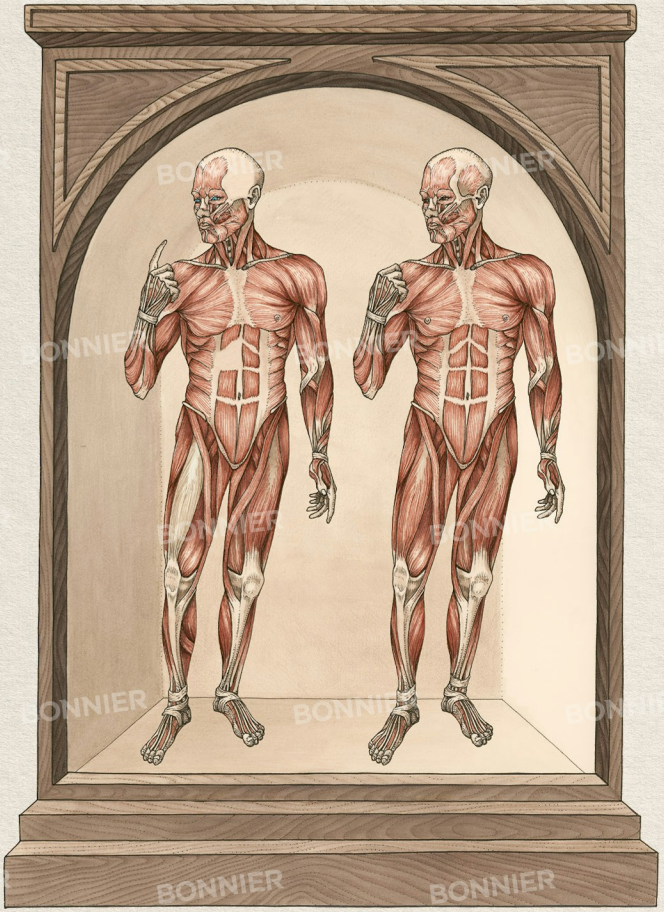


Bacteria

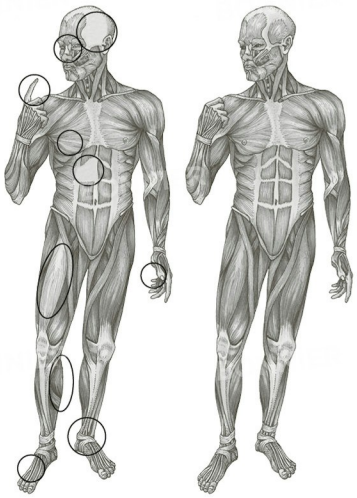
Bacteria are microorganisms; tiny living things too small for us to see with the naked eye. They can be found all around us, including in our bodies (*E. Coli*, for example, lives in the digestive tract). Some bacteria are helpful for processes such as digestion, but others are very harmful and need to be located and destroyed by white blood cells.

Spot the difference

(there are 10 differences to spot)

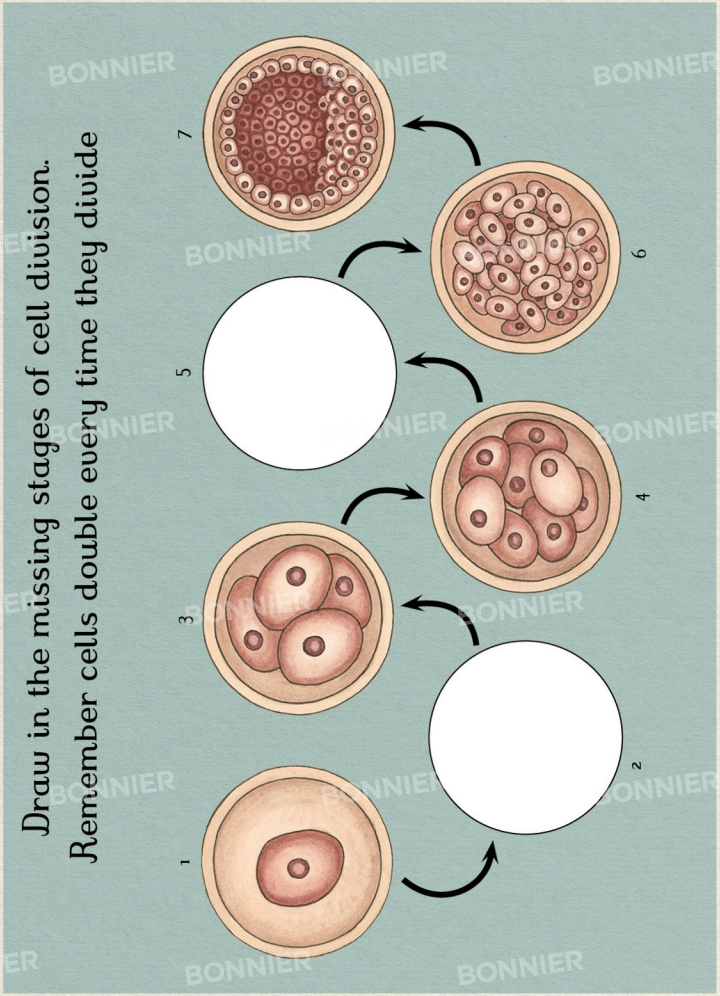


Answers

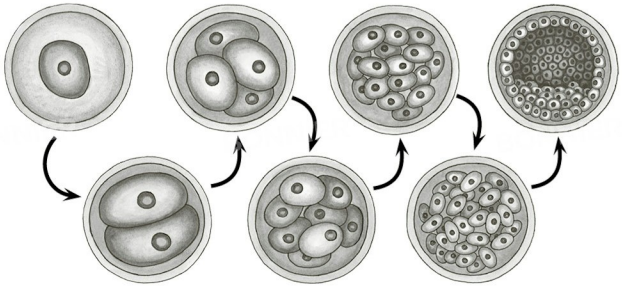


Muscular system

The muscular system is responsible for producing every possible kind of movement. Found throughout the body in three types – skeletal, cardiac and smooth – all muscle tissue shares one important feature: the ability to contract, making part of the body move.



Answers

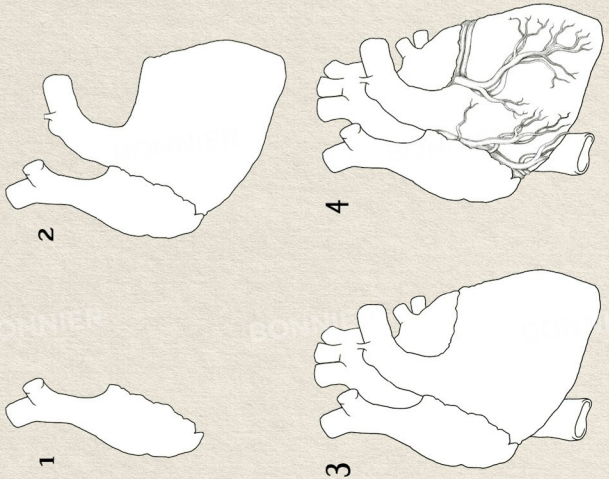


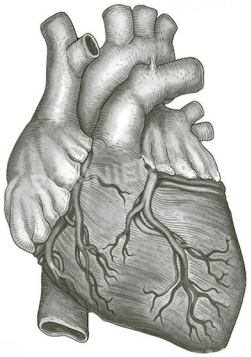
Cell division

Once an egg has been fertilised, it is called a zygote and will begin to divide into two cells. These cells keep dividing and dividing until a ball of cells is made.

Try it yourself

How to draw a heart



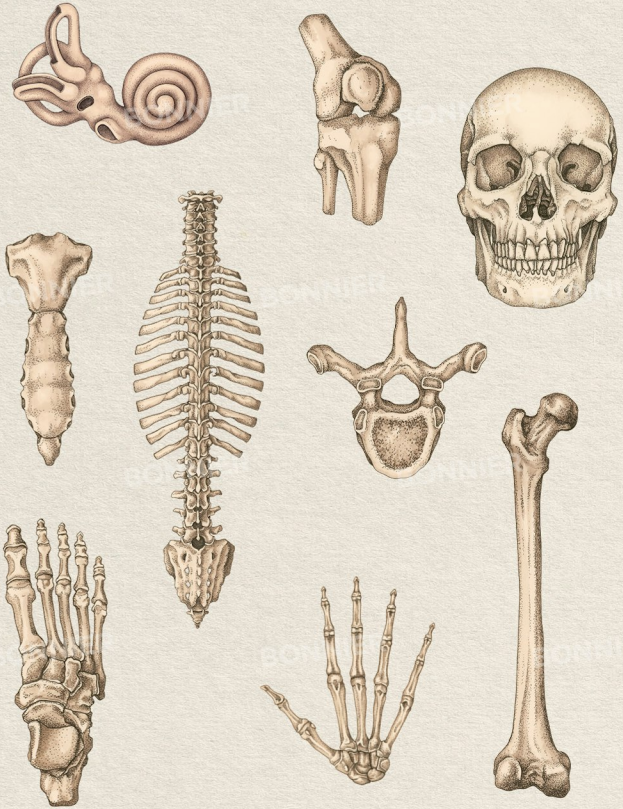


Heart

The hardest working muscle in the body is the heart, beating over 100,000 times every day of our lives to transport blood all the way round the body.

Which of these is not part of the skeleton?

(circle the odd one out)

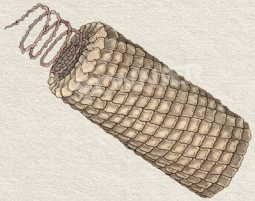


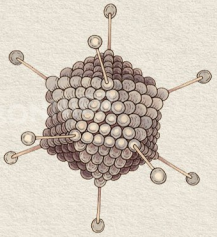
Answer

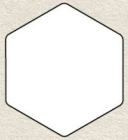
Inner ear

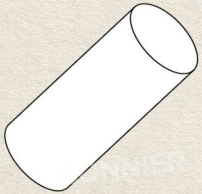
Our ears are split into three regions, the outer ear, the middle ear and the inner ear. The inner ear contains the cochlea, which turns sound waves into electrical impulses that are sent to the brain and de-coded as sounds. It also contains the semicircular canals, which assist our sense of balance.

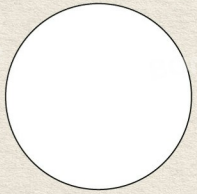
Draw your own viruses using these geometric shapes as a guide



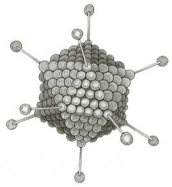




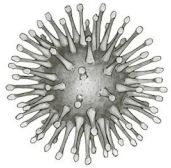




Helical virus



Polyhedral virus

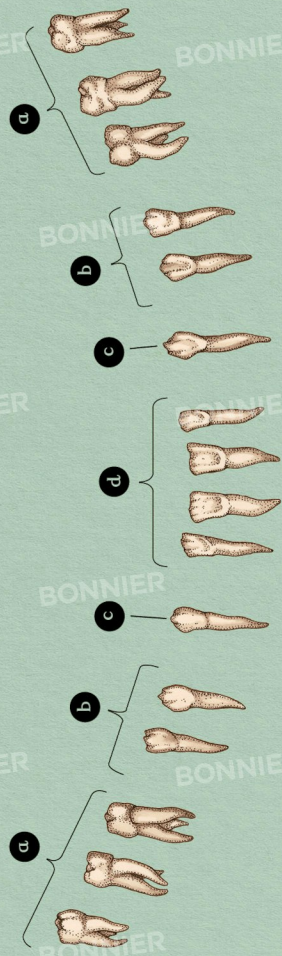


Spherical virus

Viruses

Viruses are a type of microbe – a tiny living thing that can make you unwell. Viruses work by finding their way into cells, infecting them and taking over their machinery.

Name the types of teeth



Canines Incisors Molars Premolars

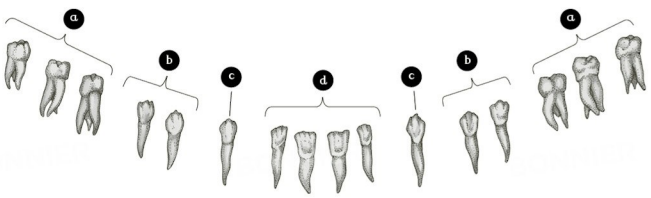
a .....

b .....

c .....

d .....

Answers



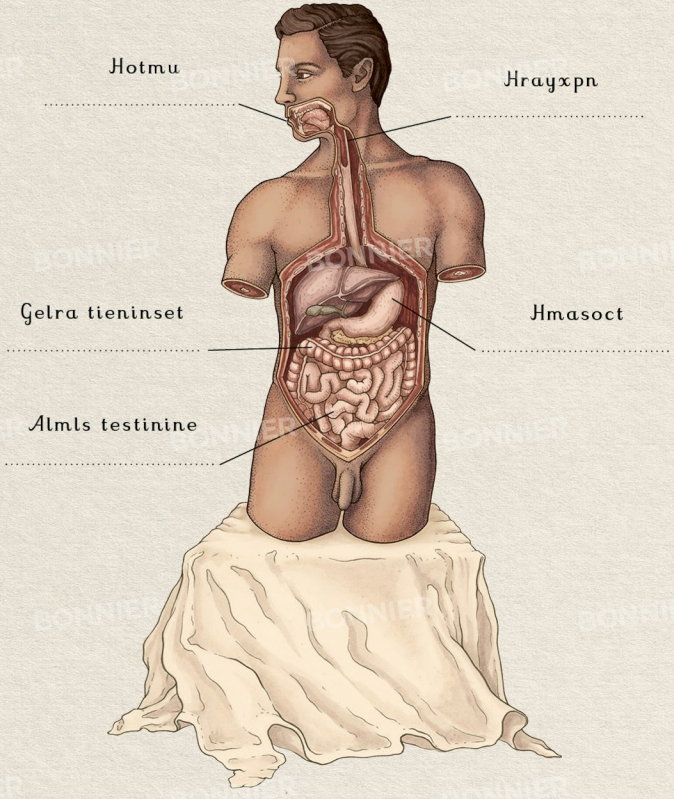
a Molars
b Premolars
c Canines
d Incisors

Colour in this image of scent particles being inhaled

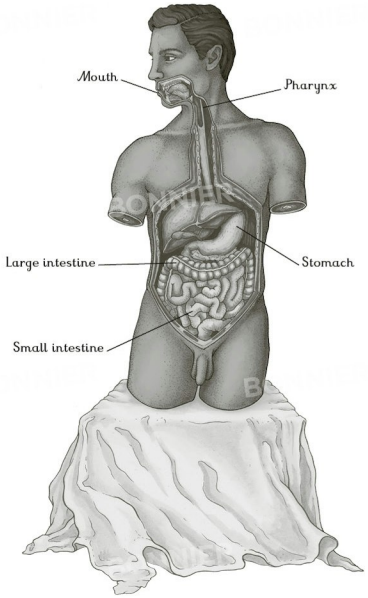
Nose

Odour molecules float in the air all around us. As we breathe, they enter the nostrils and pass into the nasal cavity, a large space behind the nose. The top of the nasal cavity contains millions of receptor cells that detect these odours and turn them into an electrical impulse. This signal travels to the brain as a 'smell', via a connection called the olfactory nerve.

Unscramble the names of these body parts



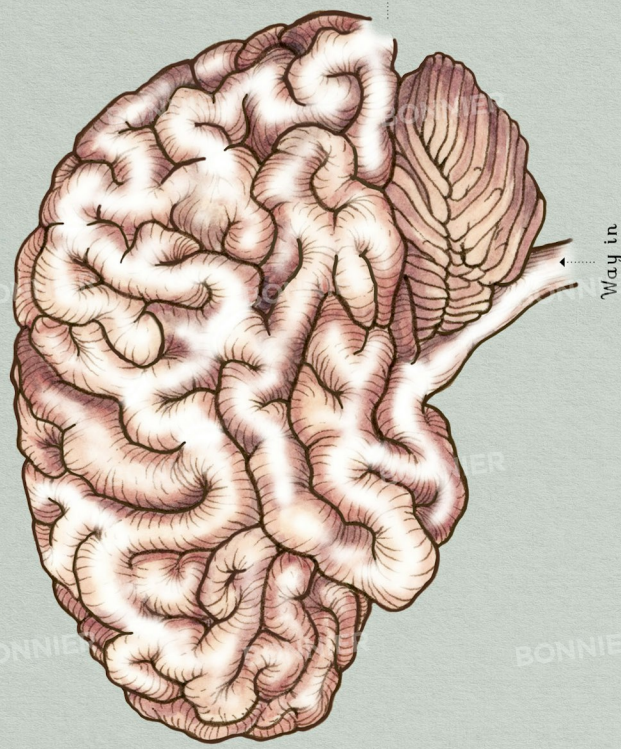
Answers



Digestive system

The digestive system is a clever food-processing plant, working constantly to take in food, break it down into the nutrients we need and get rid of the waste that's left.

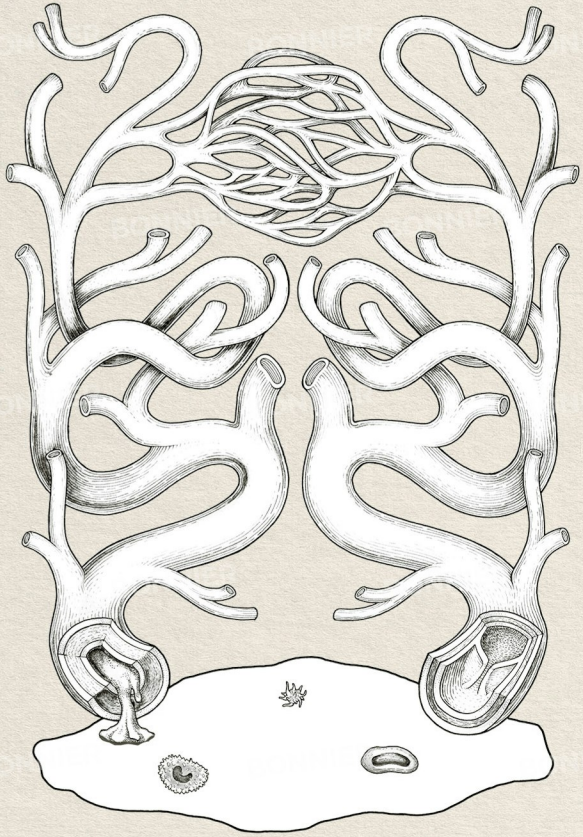
Find your way through the brain maze



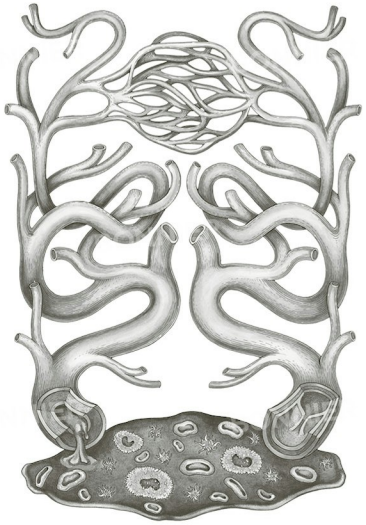
Answer

Brain

Despite making up just 3 per cent of our overall body weight, the brain uses about 20 per cent of the body's energy. This enormous demand for power is because the brain controls everything we do, from movement and breathing to thoughts, emotions and memories.



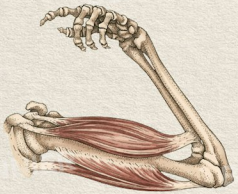
Draw in more blood cells,
then colour in the blood vessels

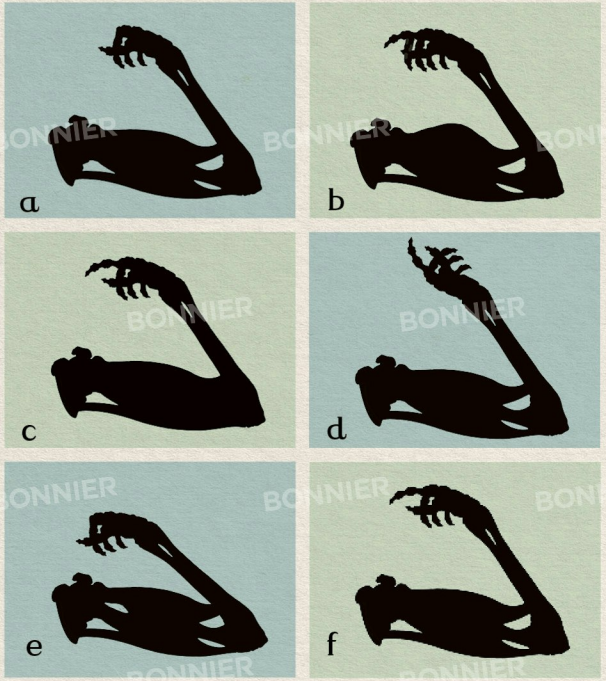


Blood

A huge network of tubes called blood vessels lets blood travel to every part of our body. Blood is made up of billions of cells, all floating in a liquid called plasma. Around 99 per cent of blood cells are red blood cells, which carry oxygen around the body. There are also white blood cells, which help the body to attack infection, and platelets, which form scabs to stop blood escaping when the skin is cut.

Which silhouette matches this arm?





Answer

Arrange these stages of foetal development in the correct order

Answers

c embryo

d week 9

a week 12

e week 15

b week 25

Foetal development

At the end of week 4, the embryo has started to form, and the beginnings of the head and limbs can be identified. Now called a foetus, the developing baby has all of its major body organs, and will begin to grow in size. By week 9, it will be 2.5cm long; week 12, 5cm long; week 15, 10cm long; and week 25, 34cm long.