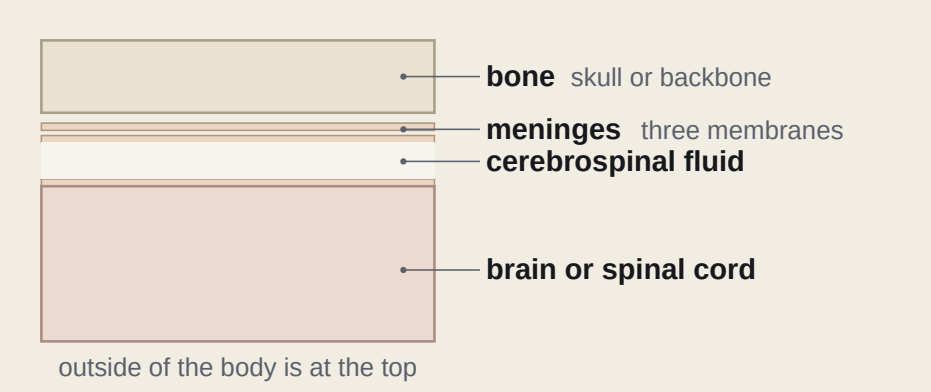
A6 · The spinal cord and the brain · Notes

Goals: Name what protects the brain and the spinal cord. Describe the parts of the spinal cord and what they do. Find the cerebrum, cerebellum, pons, medulla oblongata and hypothalamus on a diagram. Describe the cerebral hemispheres and the four lobes, and give their jobs. Give the jobs of the cerebellum, pons, medulla oblongata and hypothalamus. Decide which part of the brain does a given job.

Name: _____ Date: _____

Slide 1 of 7 · Protecting the central nervous system

In lesson A5, the central nervous system was the brain and the spinal cord. Today you look inside both. First, how they are kept safe.



Key ideas

Bone protects the brain and the spinal cord: the _____ and the backbone.

The _____ are three thin membranes that wrap them.

_____ cushions the brain against bumps.

Example

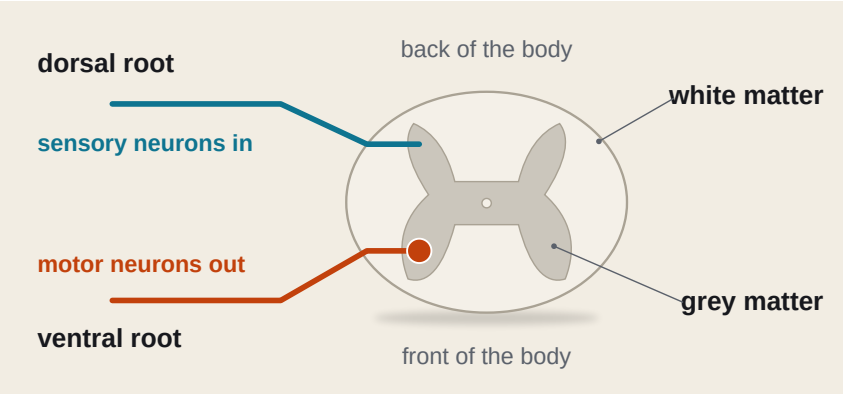
Name the three things that protect the brain.

Try it

State two jobs of cerebrospinal fluid.

Slide 2 of 7 · The spinal cord

On the last slide, bone, membranes and fluid protected the spinal cord. Now you look at the spinal cord itself, cut across.



Key ideas

_____ is on the outside of the spinal cord. It is axons with a myelin sheath.

_____ is in the centre. It holds interneurons.

Sensory neurons enter through the _____.

Motor neurons leave through the _____.

Example

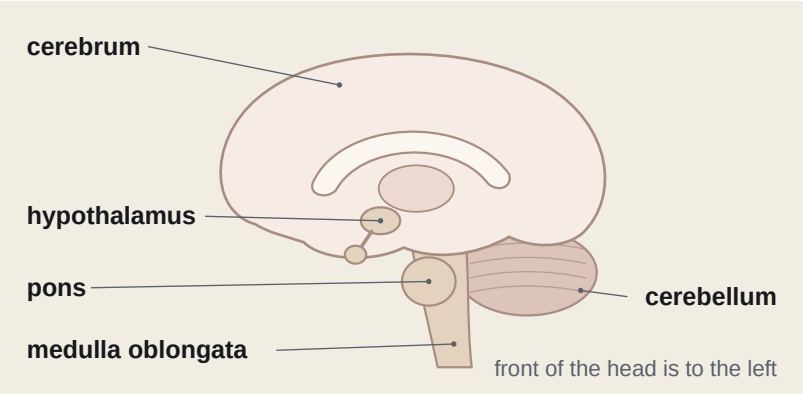
Name the root through which a motor neuron leaves the spinal cord.

Try it

Explain why an injury in the neck affects more of the body than one in the lower back.

Slide 3 of 7 · The main parts of the brain

On the last slide, the spinal cord carried messages up to the brain. Here is the brain, cut down the middle so you can see inside.



Key ideas

The _____ is the largest part of the brain.

The _____ is at the back, below the cerebrum.

The pons and the _____ are on the stalk below the cerebrum.

The _____ is a small part under the middle of the cerebrum.

Example

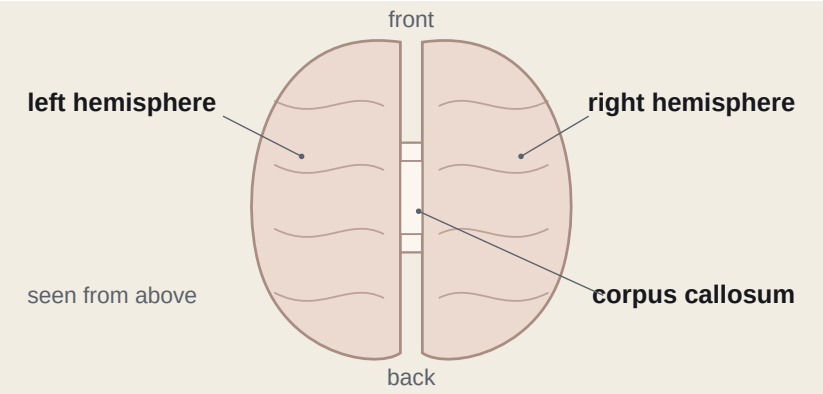
Name the part of the brain that joins straight onto the spinal cord.

Try it

Name the largest part of the brain, and the part at the back below it.

Slide 4 of 7 · The cerebrum: two hemispheres

On the last slide, the cerebrum was the largest part of the brain. From above, you can see that it is in two halves.



Key ideas

Each half of the cerebrum is a _____.

The right hemisphere controls the _____ side of the body.

The _____ joins the two hemispheres.

The folded outer layer of the cerebrum is the _____.

Example

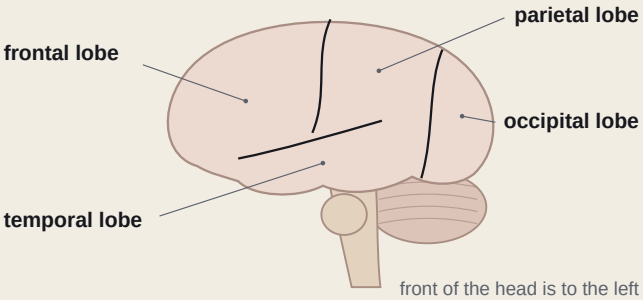
Name the hemisphere that controls the right hand.

Try it

Explain why the cerebral cortex is folded.

Slide 5 of 7 · The four lobes of the cerebrum

On the last slide, the cerebrum had two hemispheres. Each hemisphere is divided again, into four regions with different jobs.



front of the head is to the left

Lobe	Main jobs
frontal	voluntary movement; thinking and personality
parietal	touch and temperature
temporal	hearing; memory
occipital	vision

Key ideas

The _____ controls voluntary movement and thinking.

The _____ receives touch and temperature.

The _____ handles hearing and memory.

The _____ handles vision.

Example

A person can no longer feel touch on the skin. Name the lobe most likely damaged.

Try it

Name the lobe at the back of the head, and its main job.

Slide 6 of 7 · Below the cerebrum: four more parts

On the last slide, the lobes of the cerebrum handled senses, chosen movement and thinking. The parts below it work without you choosing.

Part	Main jobs
cerebellum	balance and coordinated movement
pons	relays messages: cerebellum and medulla
medulla oblongata	breathing, heart rate, blood vessels
hypothalamus	homeostasis; controls the pituitary gland

Key ideas

The _____ controls balance and coordinated movement.

The _____ relays messages between the cerebellum and the medulla oblongata.

The _____ controls breathing and heart rate.

The _____ keeps homeostasis and controls the pituitary gland.

Example

Name the part of the brain that controls breathing and heart rate.

Try it

Name the part of the brain that links the nervous system to the endocrine system.

Slide 7 of 7 · Method: which part of the brain does this job?

Questions often describe a job, or an injury, and ask for the part of the brain. These four steps use the two tables from this lesson.

1. **Name** the job that is lost or changed.
2. **Ask** if it is a sense, a chosen movement or thinking.
3. **Pick** the lobe, if the answer is yes.
4. **Pick** another part, if the answer is no. Use the table.



Check: involuntary jobs are not in the cerebrum.

Used again in: this lesson's page

Key ideas

Step 1: name the _____ that is lost or changed.

Step 2: ask if it is a sense, a chosen movement or _____.

Step 3: if yes, pick the _____.

Step 4: if no, pick another part. _____ jobs are not in the cerebrum.

Example

Use the four steps. After a blow to the back of the head, a person cannot see.

Try it

Use the four steps. A person cannot keep their balance.