

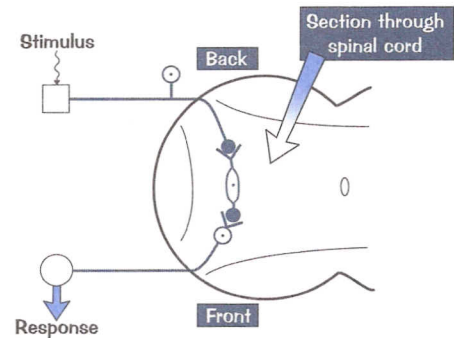
Neurons and Reflexes

Q1 If you touch a hot object with your finger, you quickly move your finger away without having to think about it. This is a reflex action.

- What is the **stimulus** in this reflex action?
- What is the **response** in this reflex action?
- What is the **effector** that **causes** this response?

The diagram on the right represents a **reflex arc**.

- Copy** the diagram. **Label** the sensory neuron, the interneuron, and the motor neuron. **Label** the receptor and the effector. **Add arrows** to show the direction of the nerve impulses.



- What is the role of the **neurons** in this reflex action?
- Use your answers to **rearrange** these features of a reflex arc into the correct order:

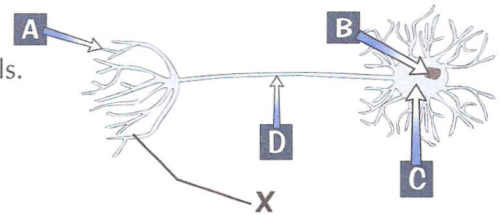
neurons (coordinator) → effector → receptor → response → stimulus

- Use the reflex arc to explain why reflex actions are such **fast responses**.

Q2 **Describe** the reflex arcs that are used when you are hit just below the kneecap, and when you get a speck of grit in your eye.

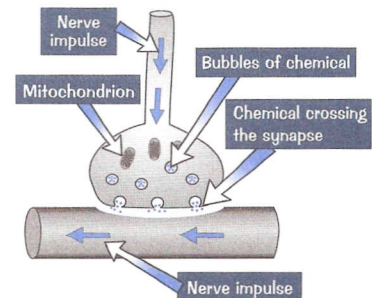
Q3 The diagram on the right shows a **motor** neuron.

- Copy** the diagram, replacing **A – D** with the correct labels.
- The neuron is making a connection with another nerve or tissue at the part marked **X**. **Label** your diagram to show what **X** is connected to.



Q4 This diagram opposite shows a **synapse** greatly magnified.

- Where** do you find synapses? What is the function of a synapse?
- What do the **bubbles of chemical** crossing the synapse do?
- There are **mitochondria** in the diagram. What does this suggest about the working of a synapse?



Just the thought of an exam sends shivers down my spine...

There's loads to remember here, and it's all vital stuff. Stimulus → receptors → neurons → effectors → response — you've got to know what all these are and what they do. Make sure you learn all about the central and peripheral nervous systems, and reflex reactions, which don't involve the brain at all.