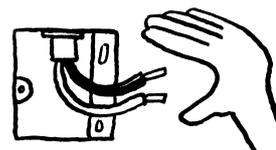
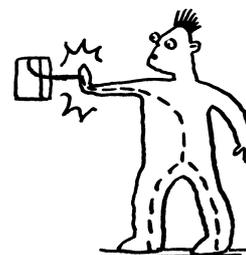


Electric shocks from mains electricity can be fatal. Electric shocks can burn you, and they also affect the nerves in your body. The effect of the shock depends on how much current flows through your body, and the route it takes.

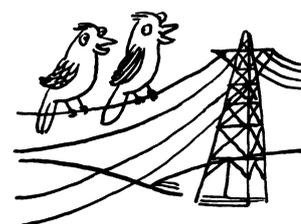
This person will receive a bad shock if he touches the wires. His body will complete the circuit between the two wires, and a current will flow through his hand. The shock will burn his hand, and it may make the muscles in his hand contract and grip the wire. The current will continue to flow through his hand until a fuse blows or someone switches the power off. However, the current will probably not kill him because it is not going through his heart.



If the man touches *one* wire with his hand, a current will flow through his body to the ground. There is a large difference in voltage between the wire (usually at about 230 V) and the ground (0 V), so a current will flow. The current will affect the nerves in his heart and chest. This shock is more likely to be fatal, because it could stop his heart or lungs working.



These birds are sitting on a high voltage wire. They do not get electric shocks because there is hardly any difference in voltage between their two feet. Current only flows when there is a difference in voltage between two places.



- 1 How can electricity harm the body?
- 2 If it is the current that causes damage, why do dangerous places have signs warning you of the high voltage? (*Hint*: what is the connection between current and voltage?)
- 3 If the man in the second picture had been wearing shoes with rubber soles, he might not have received a shock. Explain why.
- 4 Why is it dangerous to touch someone who is receiving an electric shock?
- 5 Who is more likely to be hurt; a bird sitting on electricity wires or a boy flying a kite near the wires? Explain your answer.
- 6 Find out what you should do if you find someone who has had an electric shock.

S literacy, knowledge, research