

Reading 1

► **Activity 1:** The title of the text you are going to read is 'How can electricity affect the body?'. Think of two or three questions you expect the text to answer. Then scan the text to see if you can find the answers.



► **Activity 2:** Read the text more carefully. While you read, choose the correct option in each pair.

Coming in contact with electric current can cause current to flow through the body, leading to electrical shock and burns, or even death as a result of electrocution or falls. The **(1) superiority / severity** of injury depends on a number of factors, such as the amount and strength of electrical current, the **(2) length / width** of time the current passes through the body and its path through it. For example, it takes only 1/10 of an ampere (amp) of electricity for 2 seconds to cause death. Currents above 10 mA (milliampere) can paralyze muscles and a person is no longer able to **(3) realize / release** a tool, or any other object. In fact, the **(4) electrified / shocked** object may be held even more tightly, resulting in longer exposure to the shocking current. For this reason, handheld tools that give a shock can be very dangerous. If you can't **(5) allow / let** go of the tool, current continues through your body for a longer time, which can lead to respiratory paralysis. Currents greater than 75 mA cause ventricular fibrillation (i.e., *very rapid, ineffective heartbeat*) which will cause death unless a defibrillator is used. At 4 amps, the heart stops pump-

ing resulting in heart paralysis, while tissue is burned with currents greater than 5 amps.

High voltages may also lead to injuries including severe burns as well as violent muscular contractions, which can cause bone fractures and falls. In addition, a person can suffer **(6) internal / external** bleeding and destruction of tissues, nerves, and muscles. Small currents, on the other hand, may only create some degree of **(7) disease / discomfort** or just a tingling sensation.

Longer exposure time is another aggravating factor. For example, a current of 100 mA applied for 3 seconds is as dangerous as a current of 900 mA applied for a **(8) fraction / function** of a second (0.03 seconds). The **(9) path / road** of the electrical current through the body will also affect greatly the severity of injury. Passage of current through the heart or nervous system may be **(10) killing / fatal**, whereas contact of the head with a live wire will most likely damage the nervous system. Contacting a live electrical part with one hand - while being **(11) graded / grounded** at the other side of the body - will probably lead to heart and lung injury.

► **Activity 3:** Answer the following questions:

1. Can you name three major injury types that you may sustain when electric current passes through your body?
2. Are the types of burns that can be caused upon contact with electricity mentioned in the text?
3. Can you name three factors that may affect the severity of an electrical injury?
4. Is 1/10 of an ampere of electricity going through the body for one second enough to cause death?
5. Is resistance (the ability of a material to resist electrical current) mentioned in the text?
6. What can result in ventricular fibrillation?
7. Having read the text, what would you advise people to do to avoid being harmed by electric current?

