

## Activities

1. What **is** **voltage** in an **electric circuit**?
  - a. The **number of electrons** passing through a point in 1 second
  - b. The **resistance** of a circuit
  - c. The **difference in electrical energy** between two points
  - d. The **opposition** of components to **electric flow**
2. How **is current represented** and **measured** in the International System of Units?
  - a. V, volts
  - b. I, amps
  - c. R, ohms
  - d. A, amperes
3. What does a **voltmeter** **measure** in an **electric circuit**?
  - a. Resistance
  - b. Current
  - c. Voltage
  - d. Energy efficiency
4. Which **law describes** the **proportional relationship** between **voltage**, **current**, and **resistance**?
  - a. Newton's Law
  - b. Ohm's Law
  - c. Boyle's Law
  - d. Kepler's Law
5. How **can** we **reduce** the **impact** of **electrical energy consumption** on the **environment**?
  - a. Increase energy consumption
  - b. Use renewable energy sources
  - c. Waste electricity
  - d. Improve energy efficiency

6 **Choose** the correct option.

We <b>can use</b>	a) a <b>pipe</b> /tubería/ or a <b>container</b> /contenedor, recipiente/... b) a <b>battery</b> /baterí/ or a <b>generator</b> /yenera/... c) an <b>electron</b> /elektron/ or a <b>charge</b> /charch/ ...	to <b>create</b> the <b>voltage</b> that <b>maintains</b> the <b>current</b> .
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7 **Complete** the sentences.

- a) **Voltage is measured** in \_\_\_\_\_
- b) **Current is measured** in \_\_\_\_\_
- c) **Resistance is measured** in \_\_\_\_\_
- d) **Power is measured** in \_\_\_\_\_
- e) **Electrical energy is measured** in \_\_\_\_\_

8 What **is** the **difference between** an **analogue** and a **digital measuring device**? **Complete** the sentences and **listen to** the conversation to check your answers.

	a) An <b>analogue measuring device</b> <b>shows</b> us the <b>measurement</b> with _____. b) A <b>digital measuring device</b> <b>shows</b> us the <b>measurement</b> with _____.
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9 **Look** at the **circuit** with a **bulb** /bolb/, a **pencil lead** (/led/ mina) and a 4.5 V **lamp battery** (it can be 1.5 V or 3 V). **Answer** the questions.



a) How does the **illumination** of the **bulb** **vary** /veri/ if you **reduce** the **battery voltage** to 3 V?

b) How does the **illumination** of the **bulb** **vary** /veri/ if you **move** the **yellow clip** to the **far end** of the **pencil lead** and **keep** the **voltage** **constant**?

c) Can you **find** a **relationship** between **V**, **I** and **R**?

10 What **current flows** through a **bulb** /bolb/ which **has** a **resistance** of 9 in a **circuit** with a **voltage** of 4.5 V? **Draw** the circuit.

11 **Find** the **missing quantity**. **Write out** (*escribe*) the **calculations** in your **exercise book**.

a)  $V=9V; R = 4.5 \Omega; I= \underline{\hspace{2cm}}$ .      b)  $R=4 \Omega; I= 3 A; V= \underline{\hspace{2cm}}$ .      c)  $V= 1.5 V; I = 0.5 A; R= \underline{\hspace{2cm}}$ .

What **is** **Voltage** /voltich/ and how **is** it **represented** in the **International System of Units**?

How **is** **Current** /karent/ **defined** and what **are** the **units used to measure** /meshad/ it in the **SI system**?

**Explain** the **concept** of **Resistance** /rizistens/ and how it **is quantified** in terms of **units**.

What **is** **Ohm's Law** and how **is** it **mathematically expressed**?

What **are** the three **ways mentioned** in the text to **reduce** the **impact of electrical energy consumption** on the **environment**?