

UNIT 4: ELECTRICITY BASICS (II)**READING** 

1. Read the following questions. Discuss the answer together with your partner and write it down.

1) What is the opposite of a negative charge?

2) What unit measures the speed at which current changes direction?

USEFUL LANGUAGE**Talking about opposites**

- The opposite of ... is ...
- A negative charge is the opposite of a positive charge.

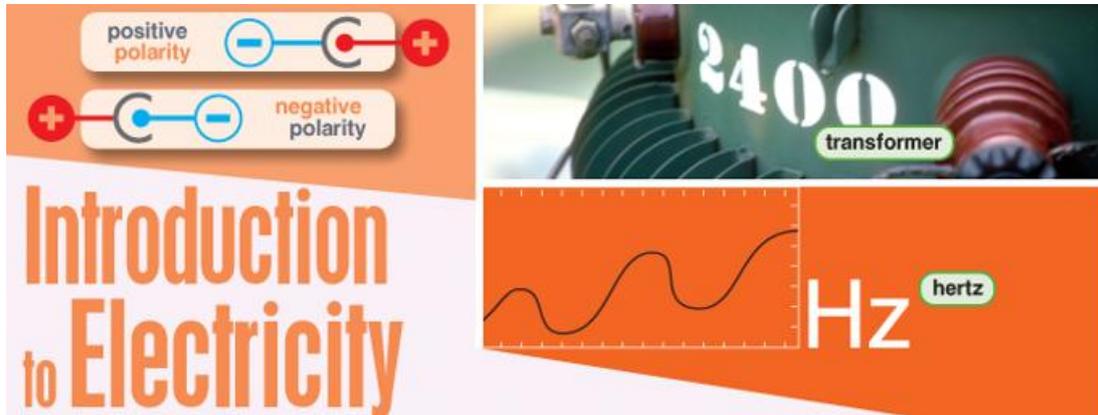
Talking about measurement

- It is measured in ...
- The unit of measurement is ...
- We use ... to measure ...

Technical vocabulary

- positive charge
- negative charge
- frequency
- hertz (Hz) /hɜ:ts/
- alternating current (AC)

2. Read the textbook excerpt. Then, complete the table.



Direct current is the type of electricity that comes from batteries. It moves from negative to positive.

Alternating current

Alternating current is when the polarity switches back and forth between positive and negative. The speed at which the polarity changes is measured in hertz. AC can be switched to DC using a transformer or diode. This process is known as rectification.

Additional Terms

Capacitance is the ability to store a quantity of electricity in an electric field. Inductance is the ability to store electricity in a magnetic field. The impact of capacitors and inductors on an alternating current is known as reactance. Impedance is a way of assessing how easily electricity passes through an electrical device.

Complete the table:

Electrical term	Relevant facts
Direct current	comes from, moves from to
Alternating current	switches, moves in two directions.
Hertz	measures the at which polarity changes in

VOCABULARY ✨**3. Match the words with the definitions (A–H).**

Reactance – direct current – positive – negative - inductance

- A) having the electrical charge of a proton _____
- B) the opposition to a change in voltage or electrical current, as a result of capacitance or inductance _____
- C) the ability to store electricity in a magnetic field _____
- D) a flow of electrical current moving in one direction _____
- E) having the electrical charge of an electron _____

4. Read the sentence pairs. Choose which word or phrase best fits each blank**1) Hertz - Impedance**

- A) _____ measure the pace at which polarity changes.
- B) _____ measures how difficult it is for electricity to move through electrical equipment.

2) Capacitance – alternating current

- A) The flow of electricity continually changes direction with _____.
- B) _____ is the ability to store electricity in an electric field.

3) Transformer - polarity

- A) _____ is when something has either a positive or negative electrical charge.
- B) _____ is a piece of equipment that changes the voltage of electricity.

LISTENING 

5. Listen and read the textbook excerpt again. Why is a transformer useful? Fill in the gaps.

A transformer is useful because it can _____
current to _____.

6. Listen to a conversation between an apprentice tech and an experienced tech. Mark the following statements as *True* or *False*.

- 1) The woman talks about inductance.
- 2) Impedance is used to measure resistance.
- 3) The man understands the explanation given.

7. Listen again and complete the conversation.

Apprentice Tech: Can I ask you a question 1) _____
_____ electricity?

Experienced Tech: Sure. Go ahead.

Apprentice Tech: What is impedance? I don't really 2) _____.

Experienced Tech: No problem. Impedance is a 3) _____
_____. Are you with me so far?

Apprentice Tech: Yes. That part's fine. 4) _____
_____ it measure?

Experienced Tech: Basically, impedance measures the amount that a circuit slows down the 5) _____.
Does that make sense?

Apprentice Tech: Actually, it does when you 6) _____ it like that. Thank you.

Experienced Tech: You're welcome.

SPEAKING 🗣️

8. Complete the conversation below based on Task 7, with the phrases given. Then, take roles and act it out.

USE LANGUAGE SUCH AS:
Can I ask ... ?
Are you with me ... ?
What about ... ?

Student A: You are an apprentice tech. Talk to Student B about:

- capacitance
- inductance
- understanding explanations

Student B: You are an experienced tech. Talk to Student A about capacitance and inductance.

Can I ask you a question about electricity? – What about inductance? – Thanks
What is capacitance?

A: _____

B: Sure. What do you want to know?

A: _____ I don't really get the concept.

B: Well, capacitance is the ability to store a quantity of electricity in an electric field.

A: _____

B: That's the ability to store electricity in a magnetic field.

A: Oh, I see. _____

B: No problem.

WRITING 📝

9. Use the conversation from Task 8 to fill out the student's notes.

Electrical Terms

Capacitance: The ability to store an amount of electricity in a(n)

Inductance: The ability to store electricity in a(n)

EXTRA PRACTICE

10. Watch the video. Use the words below to complete the text.

switch – flexible – forces – filament – alternating – direction – hooked – magnetic

The AC/DC demonstrator is **1)** _____ up to a bulb with a highly
2) _____ filament and a magnet mounted inside.

When you **3)** _____ to direct current, you send direct or one-
way current through the filament. The **4)** _____ force, created
by the magnet, leaves it stable. However, switch to AC and the **5)**
_____ of the current will constantly reverse.

The forces on the **6)** _____ are constantly reversed. This is a
great demonstration of **7)** _____ current versus direct current.
Direct current, the magnetic **8)** _____ are stable, alternating cu-
rrent, constantly changing direction.

ACTIVITY 1 - EXPLAIN IT TO THE NEW TECNICIAN

You will work **in pairs**. Each pair will receive **one technical concept** (for example: impedance, alternating current, transformer, frequency, etc.).

With your partner:

1. Write a **short definition** of your concept.
2. Prepare a short explanation using this structure:

You should include:

- What it is
- What it is used for / what it describes
- How it is measured (if relevant)
- One simple example (real life or technical)

You can use these sentence starters:

- *It is ...*
- *It is used to / for ...*
- *It is measured in ...*
- *For example, ...*

Write your ideas here:

ACTIVITY 2- Technician vs Technician: find the mistake

You will listen to several technical statements read by the conversation assistant.

Some statements are **correct** and some are **incorrect**.

Rules

- Speak in English.
- Use full sentences.
- Try to use technical vocabulary from the unit (current, resistance, impedance, AC, DC, frequency, etc.).
- If you disagree with the assistant, explain why politely and clearly.

Useful language

You can use:

- That's correct because ...
- That's incorrect because ...
- Actually, ...
- In fact, ...
- It is measured in ...
- It is used for ...