

Escuela Técnica Nº 29

“Reconquista de Buenos Aires”



INGLES

Vocabulario técnico

3eros años

Eléctrica

1 Consumer electronics



Electronics Superstore
is having a 2-Day

Consumer Electronics **Sale!**

AUDIO ENTERTAINMENT – Buy a home stereo and add a set of speakers! Or choose a portable MP3 player!

VISUAL ENTERTAINMENT – Buy a brand new television to watch your favorite shows. Watch movies on your new television with your new DVD player!

Record life events with a new digital camera or camcorder! Then upload your photos and videos to your computer or tablet.

We also have e-book readers on sale. You can take your digital books with you everywhere!

Check out our cell phones on sale, too! Never miss another phone call!

Shop online or call us toll-free at 888-576-2346 to place your order!

Get ready!

1 Before you read the passage, talk about these questions.

- 1 What are some examples of consumer electronics?
- 2 What devices can people use to take pictures?

Reading

2 Read the Electronics Superstore advertisement. Then, choose the correct answers.

- 1 What is the purpose of this advertisement?
 - A to explain what consumer electronics are
 - B to advertise an electronics sale
 - C to promote a brand of e-readers
 - D to compare different electronics
- 2 Which of the following are NOT items on sale?
 - A computers
 - B e-book readers
 - C digital books
 - D tablets
- 3 What is a DVD player used for?
 - A to watch movies
 - B to read books
 - C to upload photos
 - D to make phone calls

Vocabulary

3 Match the words (1-8) with the definitions (A-H).

- | | |
|-------------------|--------------------------|
| 1 — tablet | 5 — cell phone |
| 2 — computer | 6 — DVD player |
| 3 — television | 7 — MP3 player |
| 4 — e-book reader | 8 — consumer electronics |

- A a device that plays DVDs
- B a digital music player
- C a portable, hand-held computer
- D a device that uses electrical signals to create picture and sound
- E an electronic, hand-held device that displays contents of a book in digital format
- F electronics used for everyday or casual entertainment purposes
- G an electronic device that accepts, processes, and displays data
- H a portable, wireless telephone



e-book reader

3^o

4 Read the sentence pair. Choose where the words best fit the blanks.

1 stereo / camcorder

A The _____ was very loud so I didn't hear you.

B We watched the video John shot with his _____.

2 speaker / digital camera

A Amy took pictures with a _____.

B The _____ was hooked up to the stereo.

3 MP3 player / cell phone

A Susan called me on her _____.

B Dave downloaded music to his _____.

5 Listen and read the Electronics Superstore advertisement again. Which item is a good addition to the stereo?

Listening

6 Listen to a conversation between a customer and an employee. Mark the following statements as true (T) or false (F).

- 1 ___ The woman is calling to order a new tablet.
- 2 ___ The man suggests ordering a DVD player.
- 3 ___ The woman adds an MP3 player to the order.

7 Listen again and complete the conversation.

Employee: Thanks for calling Electronics Superstore. How can 1 _____ today?

Customer: I want to order the Musicmaster JLX 2 _____.

Employee: Okay, great. What else can I do for you?

Customer: I'd also like the 3 _____ that go with it.

Employee: Those are also 4 _____ right now.

Customer: Really? That's great! Can you give me the total?

Employee: It comes out to \$295.99, before taxes and 5 _____.

Customer: Sounds good. Let me give you my 6 _____.

Speaking

8 With a partner, act out the roles below based on Task 7. Then switch roles.

USE LANGUAGE SUCH AS:

I want to order ...

What else ...

I'd also like the ...

Student A: You are a customer. Talk to Student B about:

- ordering an item on sale
- adding another item
- how much the items cost

Student B: You are an employee. Talk to Student A about the items he or she is ordering.

Writing

9 Use the Electronics Superstore advertisement and the conversation from Task 8 to fill out the customer survey.

Electronics

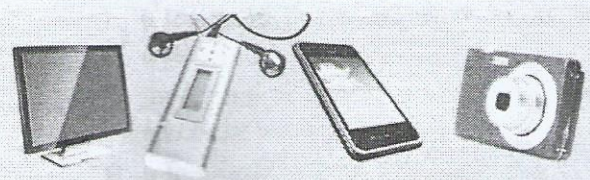
SUPERSTORE

Customer Survey

What did you purchase?

Why did you purchase these items?

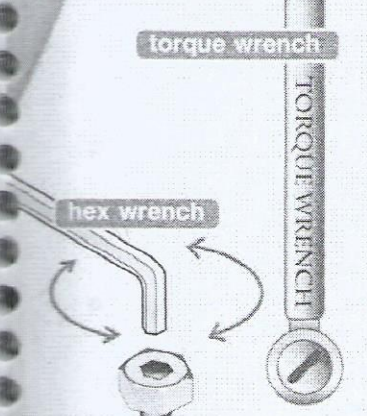
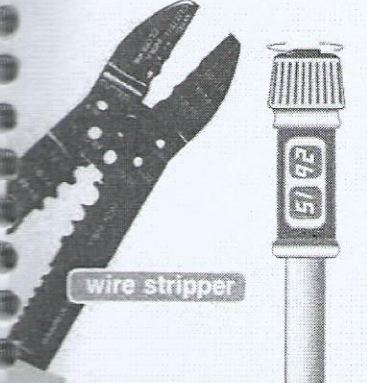
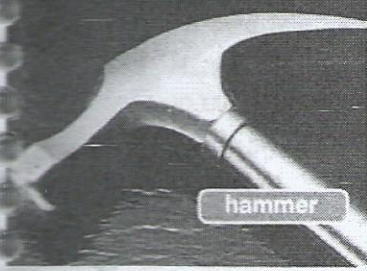
How did you place your order?



Mr. Tech's

WEEKLY

ADVICE COLUMN



Question: I want to start repairing electronics. What sort of tools do I need to get started?

Dear Reader,
 Start by buying a **Phillips screwdriver** and **needlenose pliers**. These are two of the most basic tools. Phillips screws are most common in electronics. However, sometimes you'll see slotted ones. In this case, you'll need a **flathead screwdriver**. Another useful tool is a **hammer**. For electrical work, **diagonal cutters** are important. You will also need a **wire stripper** and **electrical tape**. A medical **hemostat** is also helpful to hold your wires.
 After these basics, look into different types of wrenches. I suggest a **hex wrench** and a **torque wrench**. Also, a **magnifier** is helpful for detailed work.

Reading

2 Read the advice column. Then, choose the correct answers.

- What is the purpose of the response?
 - A to explain how to use a magnifier
 - B to describe different types of wrenches
 - C to list tools needed to repair electronics
 - D to explain the importance of hammers
- According to the passage, which item is used in a different profession?
 - A diagonal cutter
 - B wire stripper
 - C hex wrench
 - D hemostat
- What tool is used with slotted screws?
 - A torque wrench
 - B flathead screwdriver
 - C hammer
 - D Phillips screwdriver

Vocabulary

3 Match the words (1-8) with the definitions (A-H).

- | | |
|-------------------|--------------------------|
| 1 — hemostat | 5 — electrical tape |
| 2 — hammer | 6 — hex wrench |
| 3 — wire stripper | 7 — Phillips screwdriver |
| 4 — torque wrench | 8 — needlenose pliers |

- A a tool with a heavy metal head used for pounding or striking
- B an L-shaped tool used for loosening or tightening screws and bolts with a head shaped like a hexagon
- C a clamping tool used to clamp and hold wires
- D small pliers with thin long jaws used for cutting and gripping in detailed work.
- E a tool that uses a gauge to tighten nuts and bolts
- F a tool used to cut and remove insulation from a wire
- G tape made of plastic or vinyl used to insulate electrical wires
- H a tool used to drive Phillips screws

Get ready!

1 Before you read the passage, talk about these questions.

- What are some tools used when working on electronics?
- What tools can be used for cutting wires?

4 Read the sentence and choose the correct word.

- 1 Jenna used her **Phillips screwdriver / flathead screwdriver** for slotted screws.
- 2 Henry used his **hex wrench / diagonal cutters** to cut the wires at an angle.
- 3 The **magnifier / hemostat** is very helpful for looking at details.

5 Listen and read the advice column again. What are two of the most basic tools in electronics repair?

Listening

6 Listen to a conversation between an apprentice and a professional electrician. Mark the following statements as true (T) or false (F).

- 1 The man already has a Phillips screwdriver.
- 2 The woman prefers plastic handles on screwdrivers.
- 3 The woman likes Klein needlenose pliers for professional work.

7 Listen again and complete the conversation.

Professional: Hi, nice to meet you. Do you
1 _____?

Apprentice: Yes, I already have a 2 _____.

Professional: That's good, but you'll need a
3 _____, too.

Apprentice: Okay, I'll get one. 4 _____
_____ a certain type?

Professional: Yes, I prefer the ones with
5 _____ for a better grip.

Apprentice: Okay, thanks. And I also have Klein
needlenose pliers.

Professional: Great. 6 _____
Klein needlenose pliers for
professional work.

Speaking

8 With a partner, act out the roles below based on Task 7. Then switch roles.

USE LANGUAGE SUCH AS:

You also need ...

I prefer ...

I really like ...

Student A: You are a professional electrician. Talk to Student B about:

- what tools he or she still needs to get
- what type of tool you prefer and why
- what brand of tool you prefer

Student B: You are an apprentice. Talk to Student A about which tools you need.

Writing

9 Use the advice column and the conversation from Task 8 to make a list of advice from the professional electrician.

Advice from
the professional
electrician

needlenose pliers

diagonal cutters

5 Tools 2

Everyday tools for easy repair

HOME

ABOUT US

PRODUCTS

CONTACT



bench vise

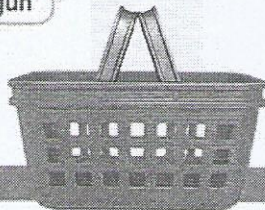
magnet

super glue

glue gun

Classic City

ELECTRIC SUPPLY CO.



Product	Use
Glue gun	Multipurpose fastening for everyday needs
Super glue	Rapidly bonds glass, metal, plastic, and rubber
Alcohol	Removes oil, grease, and grime
Naphtha	Lifts grease and dirt from any surface
Magnet	Drives current through metal coils
Bench vise	Secures projects to a work bench
Stereo microscope	Magnifies images up to 200 times
Clip lead	Uses alligator clips on both ends
Cooler spray	Rapidly cools hardware and exposes faulty electrical components
Heatsink grease	Lubricates and protects overheating
Heat-shrink tubing	Securely repairs wires forming to contours and edges



stereo microscope

alcohol

Get ready!

1 Before you read the passage, talk about these questions.

- 1 What tool can be used to hold things in place?
- 2 What can be used to stick components to a surface?

Reading

2 Read the webpage. Then, mark the following statements as true (T) or false (F).

- 1 An electronics technician uses cooler spray to expose faulty hardware.
- 2 An electronics technician tests circuitry with a magnet.
- 3 Super glue is used to secure work to a table or bench.

Vocabulary

3 Match the words (1-8) with the definitions (A-H).

- | | |
|--------------------------------------|---|
| 1 <input type="checkbox"/> naphtha | 5 <input type="checkbox"/> bench vise |
| 2 <input type="checkbox"/> alcohol | 6 <input type="checkbox"/> heatsink grease |
| 3 <input type="checkbox"/> clip lead | 7 <input type="checkbox"/> heat-shrink tubing |
| 4 <input type="checkbox"/> glue gun | 8 <input type="checkbox"/> stereo microscope |

- A a chemical solution used as a cleaning agent
- B a device that magnifies images
- C melts plastic glue to attach wires to component surfaces
- D a lubricant that stops components from overheating
- E a short wire used to create an electrical current connection
- F a petroleum product used to remove dirt from many surfaces
- G a clamp that holds wood or metal in place
- H a plastic tube that shrinks in diameter when heated

4 Read the sentence and choose the correct word.

- 1 The electronics technician secured the wire to the chip with **magnet / super glue**.
- 2 The computer's faulty wiring was exposed by the freezing **naphtha / cooler spray**.
- 3 The **clip lead / bench vise** clamped the stereo to the work table.

5 Listen and read the webpage again. What can be used to get a very detailed image?

Listening

6 Listen to a conversation between a store clerk and a customer. Mark the following statements as true (T) or false (F).

- 1 The man knows what he needs to buy.
- 2 The woman is familiar with types of electronics cleansers.
- 3 Alcohol is safe to use on all electronics wires and tubing.

7 Listen again and complete the conversation.

Clerk: Welcome to Classic City 1 ____ Supply. How may I help you?

Customer: Hi, I have a 2 _____. What do I use to clean wires?

Clerk: A product with naphtha easily 3 _____.

Customer: What about an alcohol solution?

Clerk: Well, alcohol sometimes 4 _____ wires and tubing, so I recommend naphtha. It is used on many products.

Customer: I didn't know that. In that case, I need to 5 _____ some naphtha.

Clerk: It's a great cleanser. It works 6 _____ on wiring projects.

Customer: Great, thanks for your help.

Speaking

8 With a partner, act out the roles below based on Task 7. Then switch roles.

USE LANGUAGE SUCH AS:

Welcome to ...
What do I use ...
I think ...


Student A: You are a store clerk. Talk to Student B about:

- what he or she needs
- your recommendation
- why another product is not needed

Student B: You are a customer. Talk to Student A about what product you should buy.

Writing

9 Use the webpage and the conversation from Task 8 to fill out the customer feedback form.



heat-shrink tubing

Classic City Electric Supply Co.

Customer Feedback Form

What did you purchase?

Did you get help from an employee? Y / N

Was he or she helpful? If so, please explain.

An E-Wasteland

By Jim O Dell

Electronic waste, or e-waste, is a rapidly growing problem. New electronic devices come on the market faster than ever before. Sometimes electronics break or just wear out. So what happens to all the old electronics people don't have a use for anymore?

Often they just get thrown out in the trash and end up in **landfills**. The problem with this is that electronics often contain **toxic** materials. These materials can **leech** into the ground and water supplies. Contaminated soil and water can cause **harmful** health effects for people, animals, and plants. Electronic devices should never just be thrown out with everyday garbage. They need to be treated as **hazardous waste** and **disposed of** properly. Many places have begun programs so people can get rid of their unwanted electronics. If the device is not very old and has only minor defects it can be **refurbished**. **Obsolete** items that are in good working condition can be **donated**. Many non-profit organizations especially welcome donated mobile phones and computers. Some **retailers** offer **collection programs** where customers can bring their old electronics. People can also bring their old electronics in to be **recycled**. Devices are **broken down** and all the parts that can be reused are removed. The unusable parts are then safely disposed of.

However you decide to get rid of your unwanted electronics, keep one very important thing in mind: Always make sure you erase all of your **personal data** from any electronic device before disposing of it.



Get ready!

1 Before you read the passage, talk about these questions.

- 1 Why is it important to dispose of electronic waste properly?
- 2 What are some things that can happen to electronic waste?

Reading

2 Read the newspaper article. Then, mark the following statements as true (T) or false (F).

- 1 The proper way to dispose of electronic waste is at a landfill.
- 2 Electronics can be donated or refurbished.
- 3 You should erase your personal information before getting rid of electronics.

Vocabulary

3 Read the sentence and choose the correct word.

- 1 Erica did not want to harm the environment, so she disposed of her **personal data** / **electronic waste** responsibly.
- 2 The retailer set up a **collection program** / **hazardous waste** to handle customers' electronic waste.
- 3 The **obsolete** / **toxic** chemicals polluted the ground water.
- 4 The customer turned in a cell phone that was only a year old, so the store decided to **refurbish** / **leech** it.
- 5 The computer was fifteen years old and its technology was outdated and **obsolete** / **toxic**.
- 6 Jenna was careful to remove her **hazardous waste** / **personal data** before donating her computer.
- 7 The toxic materials started to **refurbish** / **leech** into the ground, polluting the soil.
- 8 The **collection program** / **hazardous waste** was toxic and had to be disposed of properly.

4 Write a word that is similar in meaning to the underlined part.

- The trash was dumped in a place specifically designed for waste storage. _ _ n _ f _ l _
- Some of the computer parts were plastic so they could be used again. _ e _ y _ l _ d
- Ben gave away his computer to a school that needed it. _ o n _ _ e d
- The students learned how to get rid of electronic waste. _ _ s _ o _ e _ _
- Toxic chemicals are damaging to the environment. _ _ r _ f _ l
- During recycling, devices are taken apart and the reusable components are removed. b _ _ k e _ _ o _ n
- A row of businesses selling items to customers lined the street. _ e _ a _ _ e _ s

5 Listen and read the newspaper article again. Why is electronic waste such a growing problem?

Listening

6 Listen to a conversation between an electronics tech and a customer. Choose the correct answers.

- What is the conversation mostly about?
 - ways to repair electronics
 - the company's new collection program
 - problems that landfills cause
 - how to dispose of a damaged computer
- What does the tech suggest?
 - donating the device
 - refurbishing the device
 - paying for a repair
 - changing the power source

7 Listen again and complete the conversation.

Electronics Tech: Shockwave Electronics. How can I help you?

Customer: Hi, I want to 1 _____ a computer, but I'm not sure how to do it.

Electronics Tech: Does the computer still work?

Customer: No, there was a 2 _____ during a lightning storm. I think it fried the computer.

Electronics Tech: But nobody looked at it to see if 3 _____?

Customer: Well, it's kind of old, so I didn't want to 4 _____. I just ended up buying a new one.

Electronics Tech: Okay, we have a 5 _____.

Customer: Great, I'm listening.

Electronics Tech: First, you can bring it in and I can see if I can get it running again, 6 _____ to you.

Speaking

8 With a partner, act out the roles below based on Task 7. Then switch roles.

USE LANGUAGE SUCH AS:

*Is the phone still ... / You have a few ...
We dispose ...*

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

- disposing of the phone
- collection programs
- personal data

Student B: You are a customer. Talk to Student A about ways to dispose of a phone.

Writing

9 Use the newspaper article and the conversation from Task 8 to create a brochure on electronic waste disposal. Include what can be done with working electronics, non-functional electronics, the disposal of parts that cannot be recycled, and personal data.

Get ready!

1 Before you read the passage, talk about these questions.

- 1 What is 0.5 as a fraction?
- 2 What is a math statement that shows two ratios are equal?

Area of rectangle = $L \times W$

proportion

$a:b = b:d$

formula

3°

Course Description for Electronics Math 101

X

multiply

4^2

power

$3/4$

fraction

This course teaches math skills to electronics students.

Two basic concepts that will be taught are **fractions** and **decimals**. Students will learn how to **add** and **subtract** fractions and decimals. Later, students will learn how to **multiply** and **divide** fractions and decimals. All of these skills will be tested in the Final Exam.

After these basics, more difficult concepts will be taught. Students will learn how to find the **root** of a number. They will also understand how to use the **power** of a number. These new skills will be used to complete math **formulas**.

Students will also understand **ratios** and **proportions** by the end of the course.

Reading

2 Read the course description. Then, choose the correct answers.

- 1 What is the purpose of this course description?
 - A to list concepts to be studied in the course
 - B to describe ratios and proportions
 - C to list items that will be on the Final Exam
 - D to explain how to multiply decimals
- 2 Which of the following will NOT be taught in the course?
 - A how to multiply fractions
 - B how to add decimals
 - C how to divide proportions
 - D how to subtract decimals
- 3 What will the root and power of a number be used for?
 - A ratios
 - B decimals
 - C proportions
 - D formulas

add

+

Vocabulary

3 Match the words (1-8) with the definitions (A-H).

- | | |
|---------------|-----------------|
| 1 __ add | 5 __ ratio |
| 2 __ subtract | 6 __ power |
| 3 __ multiply | 7 __ root |
| 4 __ divide | 8 __ proportion |

- A shows that two ratios are equal to each other
- B take away a number from another number
- C shows how many times the number is multiplied by itself
- D the original number that multiplies by itself to reach the other larger number
- E increase a number a certain amount of times
- F combine numbers to form another total number
- G decrease a number a certain amount of times
- H shows the relation between two or more values

4 Read the sentence and choose the correct word.

- 1 Jenna used a **decimal** / **power** to show the number in units of ten.
- 2 Henry made a **formula** / **proportion** using symbols to make a statement.
- 3 A **root** / **fraction** is useful to show one whole number being divided by another.

5 Listen and read the course description again. What will students learn about fractions?

Listening

6 Listen to a conversation between a student and a teacher. Mark the following statements as true (T) or false (F).

- 1 The man wants to know how to multiply fractions.
- 2 The woman says that adding ratios is important.
- 3 The woman explains how adding decimals is used in work.

7 Listen again and complete the conversation.

Student: Well, I'm wondering 1 _____
_____ actually use math as
an electronics technician.

Teacher: Technicians 2 _____
_____ in their work. You have to have
basic math skills to be a good technician.

Student: What are 3 _____
_____ that I'd need to know?

Teacher: It's important to know how to 4 _____
_____.

Student: Oh, do technicians need to do that
5 _____ their work?

Teacher: Yes, they usually need to 6 _____
_____ of electronic parts.

Speaking

8 With a partner, act out the roles below based on Task 7. Then switch roles.

USE LANGUAGE SUCH AS:

How often ...

What are some basic skills ...

Technicians need to ...

Student A: You are a student. Talk to Student B about:


- Why the math course is important
- What are some basic math skills used
- How often do they use this skill

Student B: You are a teacher. Talk to Student A about why math is important for electronics technicians.

Writing

9 Use the course description and the conversation from Task 8 to write a reason for taking the math course and some skills that will be useful.

Why
I need
to take
this math
course



Reason: _____

Skills: _____

SETTING UP YOUR WORKSPACE

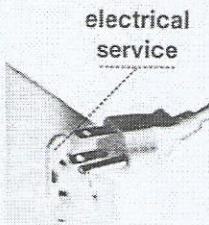
by J. Adams

A good workspace is needed for electronics repair. You need to start with the right **location**. Find a quiet and clean area for your workspace. Avoid areas with thick or dark **carpet** in case you drop a small part. Next you will need a large and **sturdy workbench**. The workbench **surface** must be clean and smooth. Another thing you need is a modern, grounded **electrical service**. Use a **power strip** to plug in extra devices.

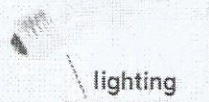
You also must have good **lighting**. Use a swing arm lamp to provide **spot lighting**. Once you have a good workspace, you can get to work!



power strip



electrical service



lighting



swing arm

Get ready!

1 Before you read the passage, talk about these questions.

- 1 Where can electronic devices be worked on?
- 2 What is needed to provide electricity to devices?

Reading

2 Read the magazine article. Then, choose the correct answers.

- 1 What is the main idea of this article?
 - A how to use a power strip
 - B how to make a workbench
 - C how to set up a workspace
 - D how to repair electronics
- 2 Which of the following is NOT necessary for a good workspace?

A carpet	C lighting
B a workbench	D a clean area
- 3 What is a power strip used for?
 - A to give spot lighting
 - B to repair electronics
 - C to smooth a surface
 - D to plug in devices

Vocabulary

3 Match the words (1-7) with the definitions (A-G).

- | | |
|----------------|-------------------------|
| 1 __ carpet | 5 __ lighting |
| 2 __ location | 6 __ power strip |
| 3 __ surface | 7 __ electrical service |
| 4 __ workbench | |

- A a table where manual work is done, usually by mechanics or carpenters
- B the function of having a supply of electric current
- C a site or a place
- D the outer or upper boundary of an object
- E an item that has several electrical sockets and one plug
- F a thick, heavy floor covering made of fabric
- G the electrical equipment being used to provide light

4 Write a word that is similar in meaning to the underlined part.

- The workbench was firmly built and solid, making it a good choice for a workspace.
_ t _ _ d y
- The hinged rod on the lamp made it easy to move the light source as needed.
_ w _ _ g a _ _
- John used focused, strong beam of light to see his work better.
s _ _ t _ i g _ t _ n _

5 Listen and read the magazine article again. Why is it important to have a power strip for your workspace?

Listening

6 Listen to a conversation between an electronics technician and an employee at a store. Mark the following statements as true (T) or false (F).

- The woman needs help repairing electronics.
- The man recommends starting with a workbench.
- The man suggests a swing arm lamp.

7 Listen again and complete the conversation.

- Customer: Hi, I'm looking for some items to set up my 1 _____.
- Employee: Okay, great. What kind of work do you do?
- Customer: I repair electronics. What 2 _____?
- Employee: You should start with a workbench that is 3 _____ enough.
- Customer: Okay, thanks. And I will also need 4 _____.
- Employee: 5 _____ a swing arm lamp for spot lighting?
- Customer: Good idea. Is there anything else that I need?
- Employee: Yes, 6 _____ are also very important. Let's take a look at them.

Speaking

8 With a partner, act out the roles below based on Task 7. Then switch roles.

USE LANGUAGE SUCH AS:

I recommend ...

May I suggest ...

Make sure ...

Student A: You are an employee. Help Student B with getting items to set up his or her workspace:

- ask what type of work he or she does
- advise what electrical outlets are needed
- offer other suggestions

Student B: You are a customer. Talk to Student A about what you need for your new workspace.

Writing

9 Use the magazine article and the conversation from Task 8 to write a shopping list with descriptions of what to buy for a customer's new workspace.



NEW WORKSPACE

Notes

Electrical outlets needed - _____

Other advice - _____

2 Electric current

30

Think about it

1 Answer

a What do you do if there is a power cut at night?

b What activities can't you do if there is a power cut?

Read

2 Read this interactive encyclopedia entry about electric current.

THE INTERACTIVE ENCYCLOPEDIA

Print

Web Links

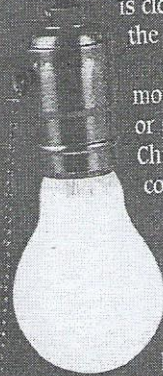
Electric current

Find

Electric current is electric charge in motion. Electricity moves from one place to another along a conductor. An electric circuit is like a pathway for electric current. 'Volts' is a unit to measure the force of an electric current.

[A] Sources (batteries and generators) produce electricity. Conductors (wires) carry electricity - they form the pathway. A circuit is formed if electricity can leave the source, travel along a conductor, pass through a lamp or an appliance, and return to the source. [B]

Circuits can be in different states - open or closed - and there are different kinds of circuit - series or parallel. A circuit is closed if there is a complete loop in the flow of the electricity. A circuit is open if there is a break in the flow of the electricity. The 'on - off' switches of



appliances and lighting circuits work on the principle of opening and closing circuits. The switch provides the break. If a lighting circuit is closed, its bulb is on. If the circuit is open, the bulb is off. [C]

A series circuit has got two or more bulbs or appliances but one conductor or pathway. For example, most sets of Christmas tree lights have all their bulbs connected in series. If one bulb breaks, none of the lights in the strand works because the circuit is open. A parallel circuit has two or more bulbs or appliances connected in a way that provides a complete pathway to each bulb. If one bulb in a parallel lighting circuit breaks, the remaining bulbs still work because each has a separate connection with the source. [D]

Incredible but true!



Which animal can give an electric shock?

The electric eel of the Orinoco River in South America can give an electric shock of 450 to

600V. It uses the shock to hunt other fish or in self-defence. Eels can't give shocks in quick succession. After each shock, they need a short rest!

Work out meaning

- 3 Write the words underlined from the text in 2 next to their Spanish translation. Then, identify their grammatical categories – noun or verb.

English	Translation	Category
<u>lamparita</u>	lamparita, bombita	
<u>carga</u>	carga	
<u>flujo</u>	flujo	
<u>medir</u>	medir	
<u>lazo</u>	lazo	
<u>vía de circulación</u>	vía de circulación	
<u>interrupción, corte</u>	interrupción, corte	
<u>fuentes</u>	fuentes	
<u>movimiento</u>	movimiento	
<u>transportan</u>	transportan	
<u>artefacto</u>	artefacto	
<u>rama, hilera</u>	rama, hilera	

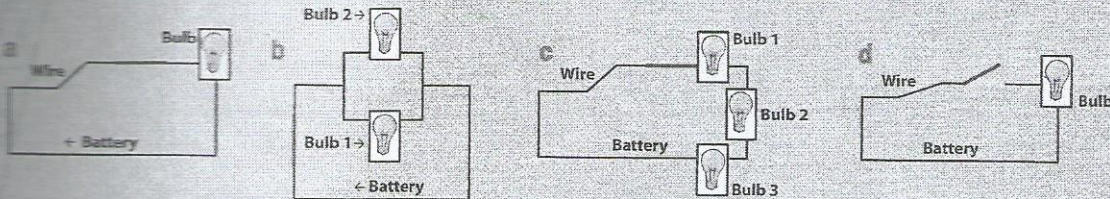
- 4 Write in the boxes the letter of the corresponding paragraph in 2.

- a Examples of open and closed circuits.
- b Differences between parallel and series circuits.
- c Definition of electric current.
- d Elements of an electric circuit.
- e Definition of a circuit.

5 Answer.

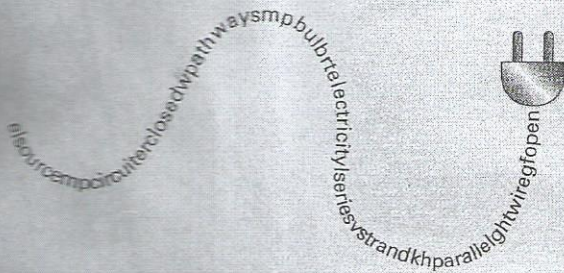
- a What is electric current?
- b What is an electric circuit?
- c What is a closed circuit?
- d When is a circuit open?
- e How many pathways are there in a series circuit?
- f How many pathways are there in a parallel circuit with three bulbs?

- 6 Label the diagrams of the types and states of circuits described in the text in 2.



Work on words

- 7 Find in the cable eleven words related to electric circuits.



Find out more

- 8A Write sentences about the units of measurement. Use the words in the box.

volt / force of electric current watt / electrical power
ampere / flow of electric current ohm / electrical resistance

Eg. If you measure the force of an electric current, you use a unit called volt.

- 8B Do some research on André M. Ampère, Alessandro Volta, James Watt and Georg Simon Ohm, the scientists that discovered, or were related to, the units of measurement in 8A.

Write

- 9 Complete the sentences to form a summary of the text in 2.

Electric current is _____.
Batteries and generators are _____.
Wires are _____.
There are different kinds of _____.

If a lighting circuit is open, its bulb _____.
If a lighting circuit is closed, _____.
If a lighting circuit has got two bulbs and one pathway, it is _____.
If a lighting circuit has got two bulbs and two pathways, _____.