1

LET'S FIND...

ELECTRICAL APPLIANCES IN THE SCHOOL

Who found it??	What appliance?	What is it for?	Where does it get *electricity from?*	Who uses it?
Alex	clock	know time	batteries	everybody

What electrical appliances did you find??

I /We/Alex	found a	It is used for.....	and it uses electricity from	mains batteries both

2

LET'S FIND...

ELECTRICAL APPLIANCES AT HOME

What appliance?	Where is it?	What is it for?	Where does it get *electricity from?*	Who uses it?

What electrical appliances did you find??

I	found a	It is used for.....	and it uses electricity from	mains batteries both

3

LET'S EXPERIMENT... static electricity

MATERIALS:

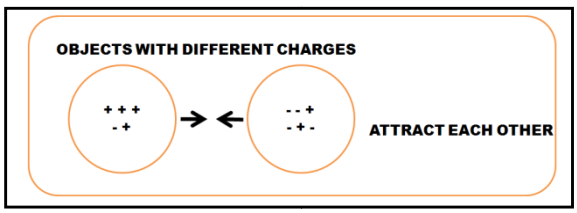
- ☐ some BALLOONS
- ☐ WOOL /COTTON SWEATER
- ☐ SALT
- ☐ PIECES OF PAPER

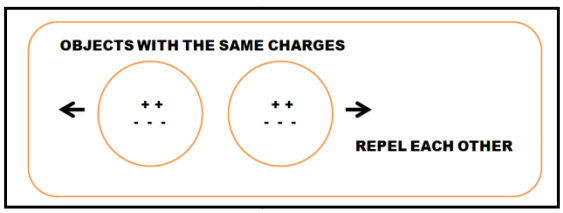
STEPS:

1. Blow up the balloons and tie them.
2. Rub the balloons against your sweater (or wool piece of cloth).
3. Try to put together…

	PREDICT		OBSERVE	
	ATTRACT	REPEL	ATTRACT	REPEL
BALLOON+HAIR				
BALLOON+BALLOON				
BALLOON+SALT				
BALLOON + PAPER				

- **Were the charges in the objects different or alike??**





What a surprise!!!

KEY

LET'S EXPERIMENT... static electricity

MATERIALS:

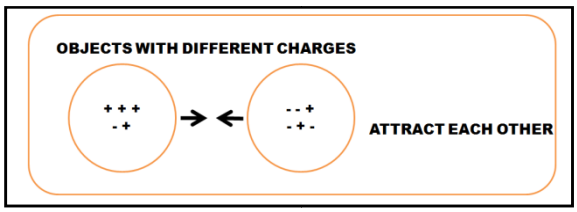
- ☐ some BALLOONS
- ☐ WOOL /COTTON SWEATER
- ☐ SALT
- ☐ PIECES OF PAPER

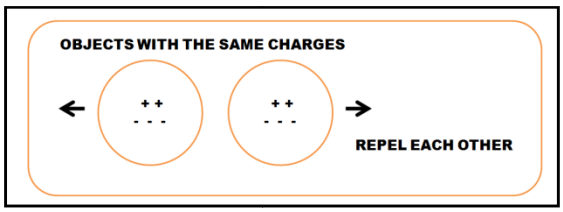
STEPS:

4. Blow up the balloons and tie them.
5. Rub the balloons against your sweater (or wool piece of cloth).
6. Try to put together…

	PREDICT 		OBSERVE 	
	ATTRACT	REPEL	ATTRACT	REPEL
BALLOON+HAIR			X	
BALLOON+BALLOON				X
BALLOON+SALT			X	
BALLOON + PAPER			X	

- **Were the charges in the objects different or alike??**





 alike  different

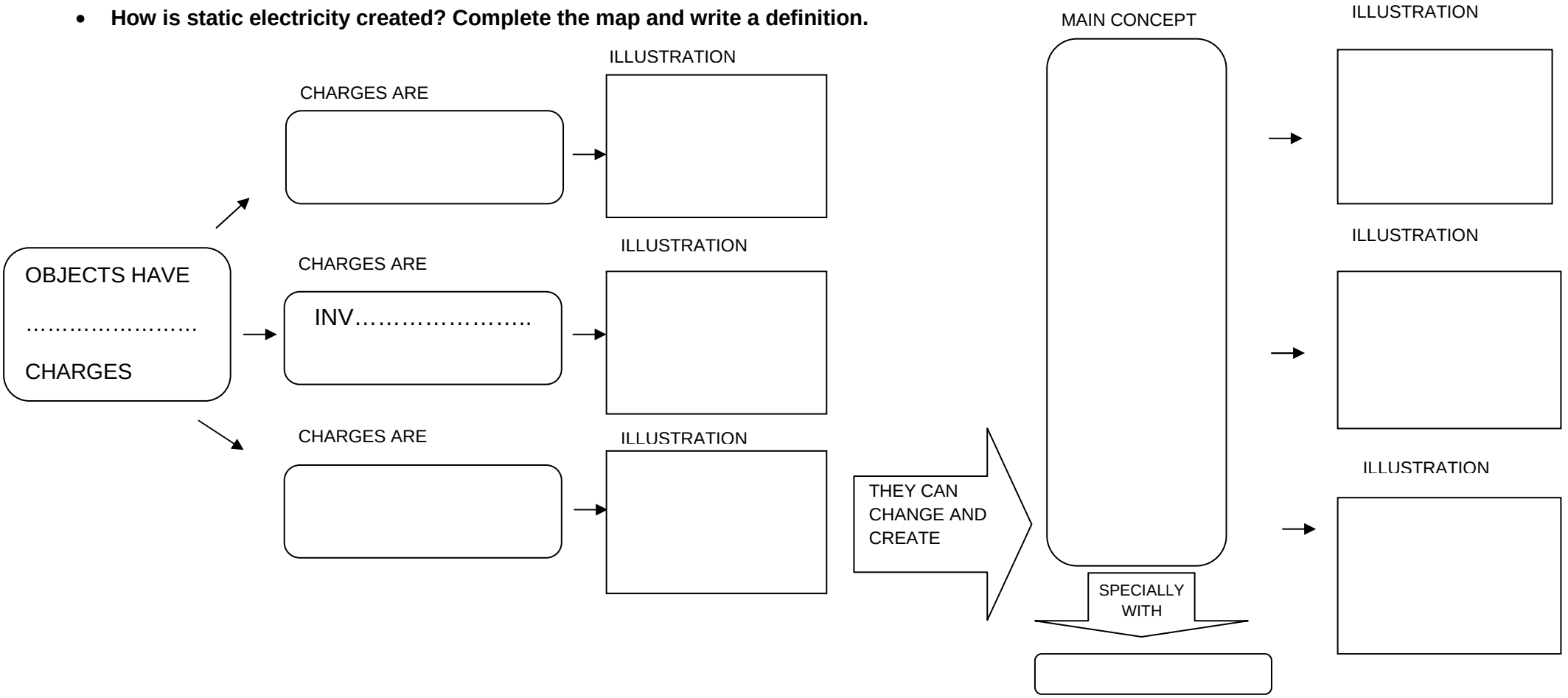
 different  different

 What a surprise!!!

4

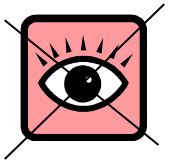
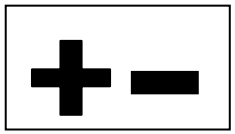
STATIC ELECTRICITY

- **How is static electricity created? Complete the map and write a definition.**



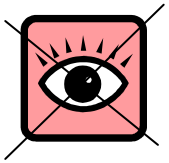
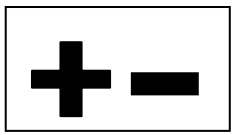
My definition:

Pictures and words to complete the concept map

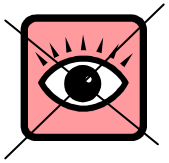
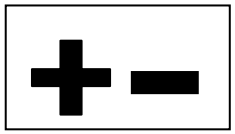
ELECTRICAL

BALANCED

ELECTRICAL

BALANCED

ELECTRICAL

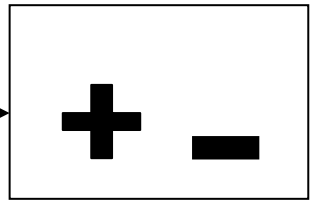
BALANCED

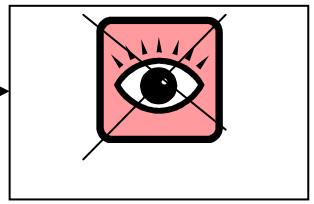
KEY

STATIC ELECTRICITY

- **How is static electricity created? Complete the concept map and write a definition.**

OBJECTS HAVE ELECTRICAL CHARGES

CHARGES ARE
POSITIVE AND NEGATIVE
ILLUSTRATION


CHARGES ARE
INVISIBLE
ILLUSTRATION


CHARGES ARE
BALANCED
ILLUSTRATION
(Students draw it)

THEY CAN CHANGE AND CREATE

MAIN CONCEPT
STATIC ELECTRICITY

SPECIALLY WITH
PLASTICS

ILLUSTRATION


ILLUSTRATION
(Students draw it)

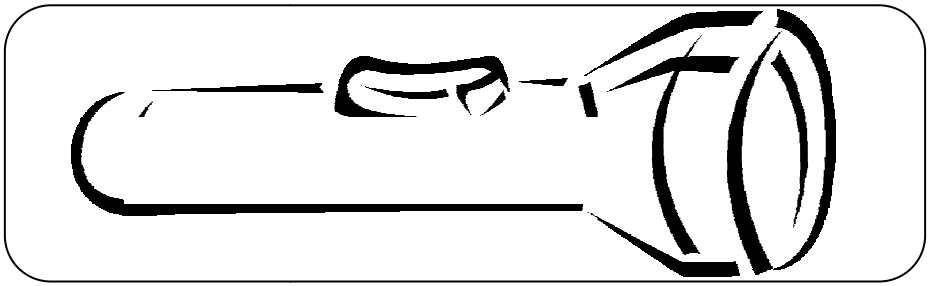
ILLUSTRATION
(Students draw it)

My definition:

5

LET'S OBSERVE... a torch inside

- **How do you think a torch is inside? Draw it.**

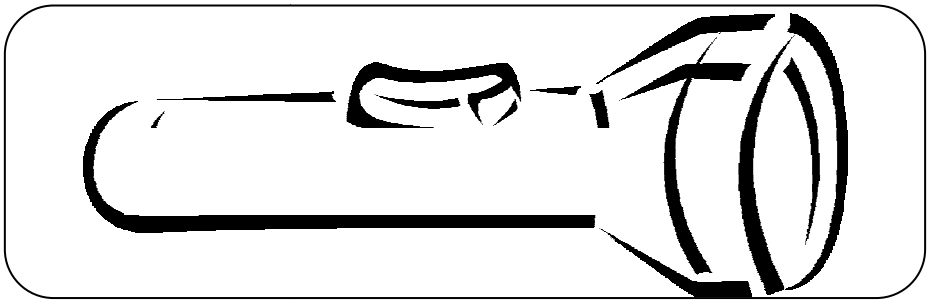


A torch has	…

The		is / are connected to the	

What parts has it got?	How are they connected?	How does it work?

- **Open the torch and check how it is inside.**

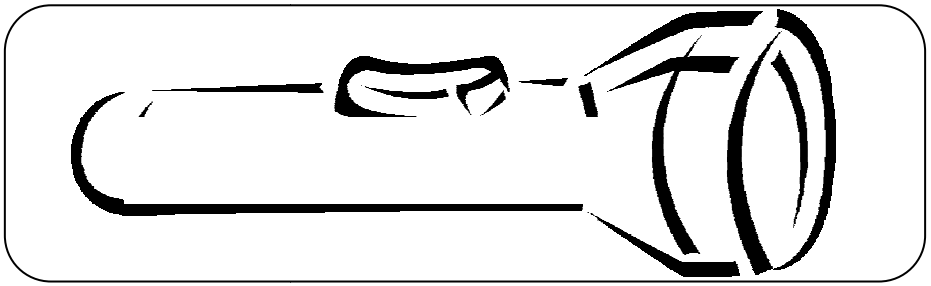


What parts has it got?	How are they connected?	How does it work?

KEY

LET'S OBSERVE... a torch inside

- **How do you think a torch is inside? Draw it.**

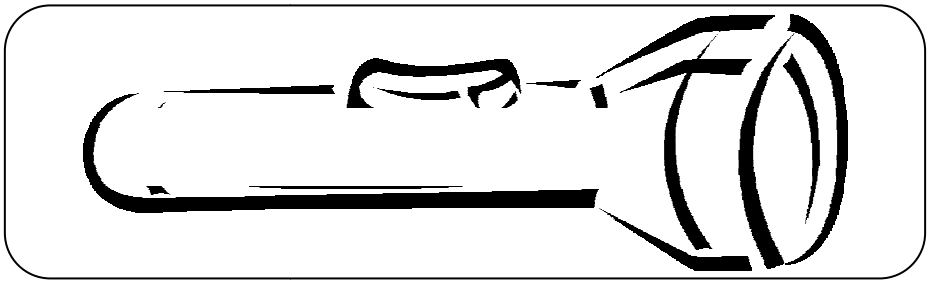


A torch has	…

The		is / are connected to the	

What parts has it got?	How are they connected?	How does it work?

- **Open the torch and check how it is inside.**



What parts has it got?	How are they connected?	How does it work?
A torch has batteries, a light bulb, metal spring/wire, a lamp contact and a switch.	*The metal spring is connected to the batteries. The batteries are connected to the lamp contact and the lamp contact is connected to the light bulb. If the switch is off all these parts are not connected.*	*The circuit works thanks to energy in the battery. When we press on, the switch connects all the circuit: metal spring/wire, batteries, lamp contact and light bulb. Then, the batteries give energy to the light bulb though the wires/metal spring and the lamp contact.*

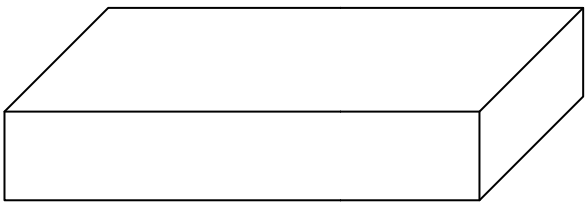
6

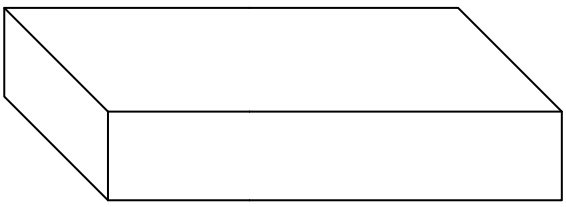
LET'S EXPERIMENT... with conductors and insulators

MATERIAL	PREDICT				OBSERVE			
	WILL LIGHT UP			WON'T LIGHT UP	LIGHTS UP			DOESN'T LIGHT UP
	BRIGHTLY	QUITE BRIGHTLY	VERY BRIGHTLY		BRIGHTLY	QUITE BRIGHTLY	VERY BRIGHTLY	

THE BULB	*WILL LIGHT UP* *WON'T LIGHT UP*	*BRIGHTLY* *QUITE BRIGHTLY* *VERY BRIGHTLY*	*WITH THE*	PIN RUBBER GLASS BOTTLE PENCIL PENCIL WITH TWO POINTS CORK GOLDEN EARRING

- **Sort the objects into the two boxes and name each group.**





- **Identify the metals in the boxes. Are they good or bad conductors?**

- **Which one is the best conductor? Why?**

- **What surprised you the most?**

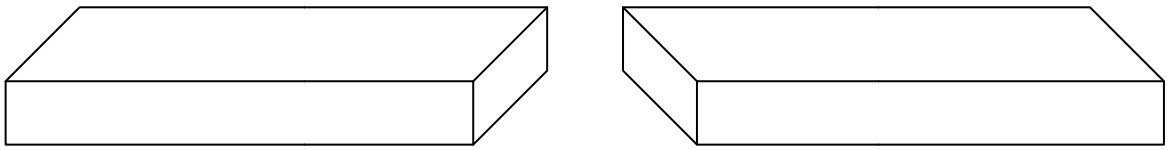
KEY

LET'S EXPERIMENT... with conductors and insulators

MATERIAL	PREDICT				OBSERVE			
	WILL LIGHT UP			WON'T LIGHT UP	LIGHTS UP			DOESN'T LIGHT UP
	BRIGHTLY	QUITE BRIGHTLY	VERY BRIGHTLY		BRIGHTLY	QUITE BRIGHTLY	VERY BRIGHTLY	
PIN						X		
RUBBER								X
KEY						X		
PENCIL								X
PENCIL WITH TWO POINTS					X			
GOLD EARING							X	

THE BULB	*WILL LIGHT UP* *WON'T LIGHT UP*	*BRIGHTLY* *QUITE BRIGHTLY* *VERY BRIGHTLY*	*WITH THE*	PIN RUBBER KEY PENCIL PENCIL WITH TWO POINTS GOLDEN EARRING

- **Sort the objects into the two boxes and name each group.**



- **Identify the metals in the boxes. Are they good or bad conductors?**
  Gold, key, and pin. They are good conductors.
- **Which one is the best conductor? Why?**
  Gold is the best conductor because it made the light bulb light up very brightly.
- **What surprised you the most?**

LET'S KNOW MORE ABOUT... electrical current

- **Read the text.**

The flow of electrical charges is called an electrical current. An electrical current transmits energy called electricity.

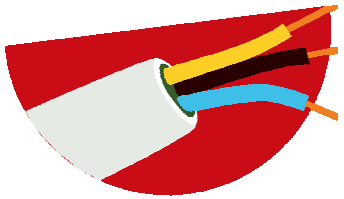
An electrical current can only flow through certain types of materials. There are two types of materials:

CONDUCTORS: Electrical current flows easily through conductors. All metals are conductors. For example, steel, copper and silver are conductors.

INSULATORS: Electrical current cannot flow through insulators. Air, glass, plastic, wood and rubber are good insulators.

The wires that transmit electricity are made of a conductor and an insulator. The conductor (usually copper) is necessary to let the charges flow. It is covered by an insulator (usually plastic) so that the charges cannot get out of the wire.

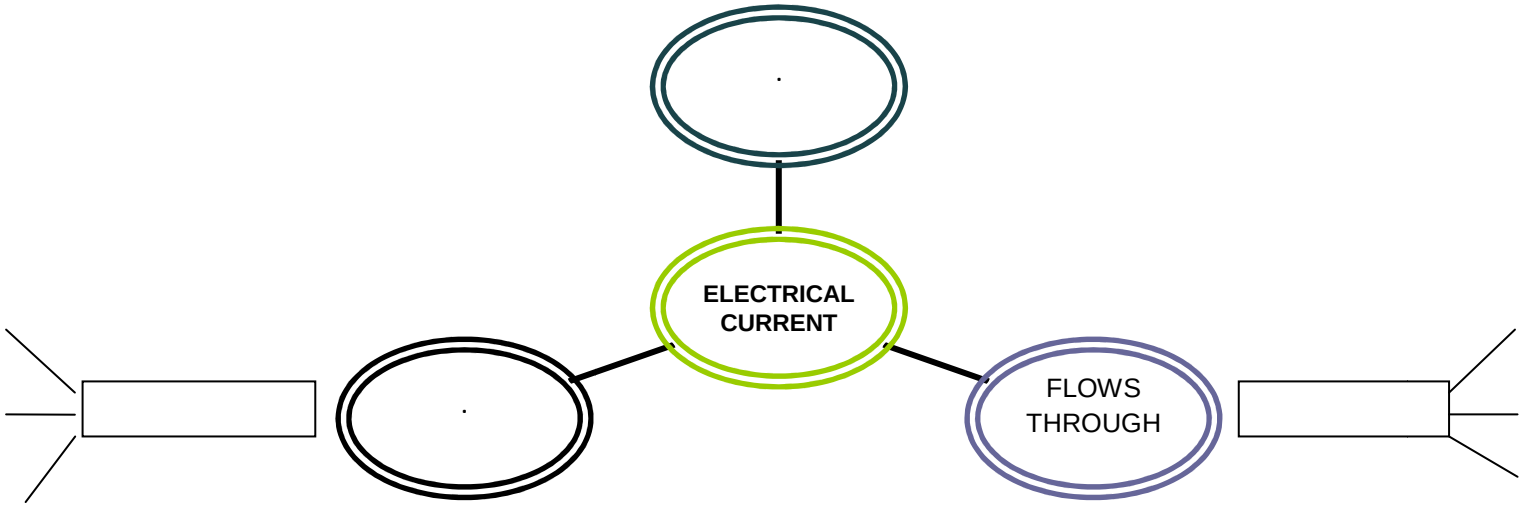
Conductor (copper)



Insulator (plastic)

This is a wire. Draw an arrow to the right part.

- **Complete the diagram with three characteristics of electrical current and some examples.**



KEY

LET'S KNOW MORE ABOUT... electrical current

- **Read the text.**

The flow of electrical charges is called an electrical current. An electrical current transmits energy called electricity.

An electrical current can only flow through certain types of materials. There are two types of materials:

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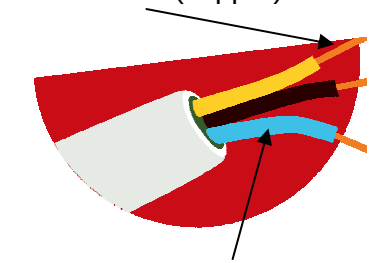
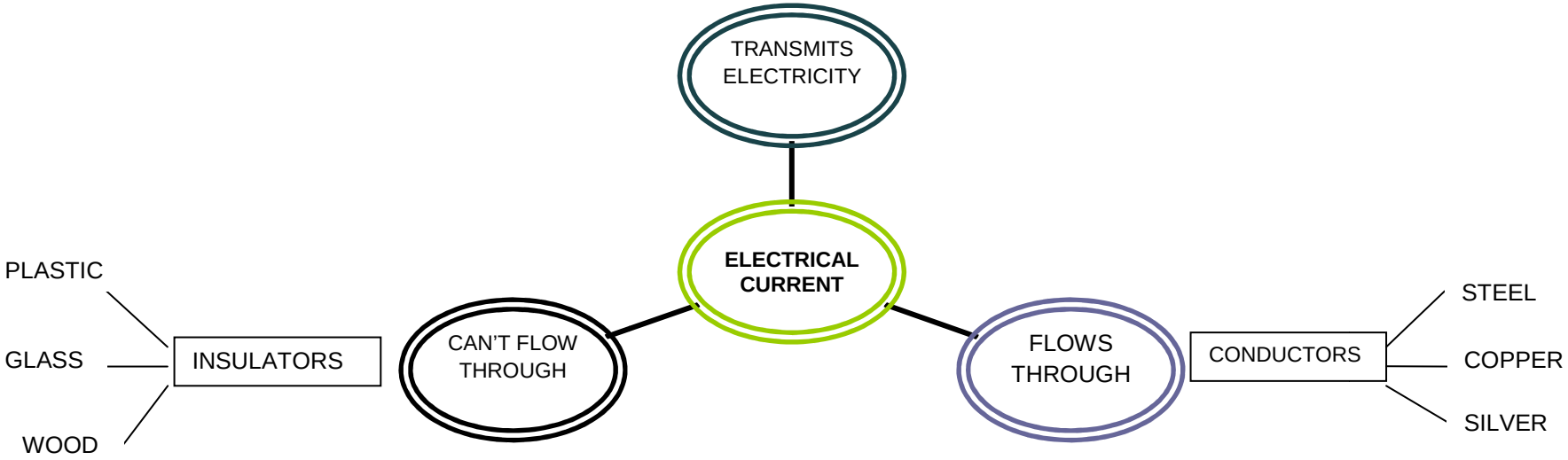


This is a wire. Draw an arrow to the right part.

- **Complete the diagram with three characteristics of electrical current and some examples.**



7

LET'S LEARN ABOUT... ELECTRIC ANIMALS

- **Try to predict the correct answer.**

A. THE ELECTRIC EEL

1. Grows to…
   A. More than 1 meter.
   B. Less than 1 meter.

My prediction
WAS RIGHT ☐ WASN'T RIGHT ☐

2. It uses electricity and makes electric shocks…
   a. To hunt preys
   b. To hunt preys and to protect itself.

My prediction
WAS RIGHT ☐ WASN'T RIGHT ☐

3. It produces electricity with…
   a. Its skin
   b. Its muscles

My prediction
WAS RIGHT ☐ WASN'T RIGHT ☐

B. THE HAMMERSHARK

1. The hammershark can …
   a. Feel electrical signals from its preys and can hunt them.
   b. Make electrical shocks.

My prediction
WAS RIGHT ☐ WASN'T RIGHT ☐

2. It detects electrical signals…
   a. With its hammer shaped head.
   b. With its mouth.

My prediction
WAS RIGHT ☐ WASN'T RIGHT ☐

3. Thanks to this ability, hammersharks…
   a. Can find animals hidden under the sand.
   b. Can't find animals hidden under the sand.

My prediction
WAS RIGHT ☐ WASN'T RIGHT ☐

What a surprise!!!

RENEWABLE AND NON RENEWABLE ENERGIES

WIND TURBINE	RENEWABLE ENERGY	DAM	SOLAR PANNEL	NON RENEWABLE ENERGY	POWER STATION

- **Complete the tree diagram with the words above.**

WHEN IT PRODUCES ELECTRICITY…

IS IT HARMFUL FOR THE ENVIRONMENT?

YES

NO

DOES IT BURN FUELS?

YES

DOES IT USE THE SUN ENERGY?

YES

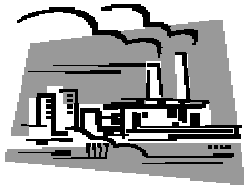
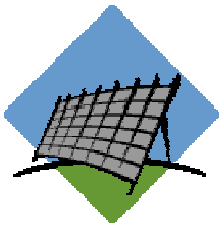
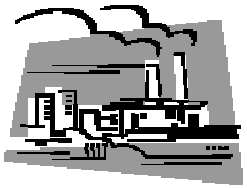
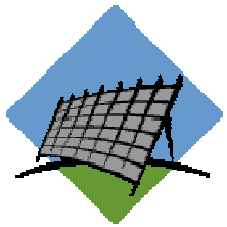
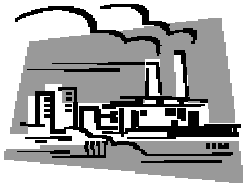
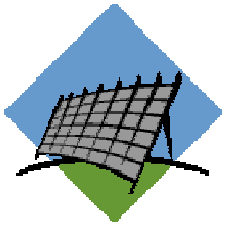
NO

DOES IT USE WIND ENERGY?

YES

NO

*Pictures to complete the tree diagram***:**

KEY

- Complete the tree map with the words above.

WHEN IT PRODUCES ELECTRICITY:

IS IT HARMFUL FOR THE ENVIRONMENT?

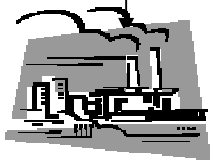
YES

NON RENEWABLE ENERGY

DOES IT BURN FUELS?

YES

POWER STATIONS



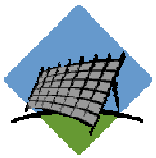
NO

RENEWABLE ENERGY

DOES IT USE THE SUN ENERGY?

YES

SOLAR PANNELS



NO

DOES IT USE THE WIND ENERGY?

YES

WIND TURBINES

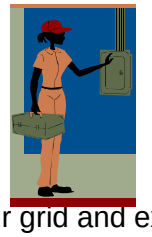
NO

DAMS

LET'S MAKE... an electricity grid 

Our group makes a /an.....

- Look at the pieces that can form an electricity grid.
- Discuss together then choose the pieces that you need.



WE THINK WE NEED:

- Make your grid and explain how you did it to your classmates.

First, Then, Finally,	we connected the	wind turbine solar panel power station dam pylon substation house	to the	wind turbine solar panel power station dam pylon substation house

- Check how your grid really works on the internet : www.switchedonkids.org.uk
- HOW WAS IT?? Report the parts you had right.

We were right to connect the	wind turbine solar panel …	to the	pylon substation house

✓ _
✓ _
✓ _

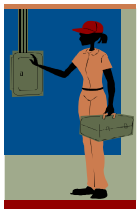
- Then report the parts you had to change.

We need to change the	wind turbine solar panel …	to the	pylon substation house ...

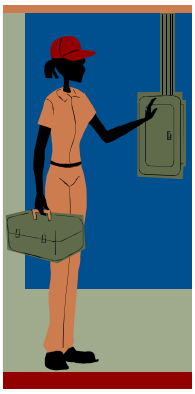
o _
o _
o _

- What about the parts??

WE FINALLY NEEDED:



LET'S FIND... electrical dangers

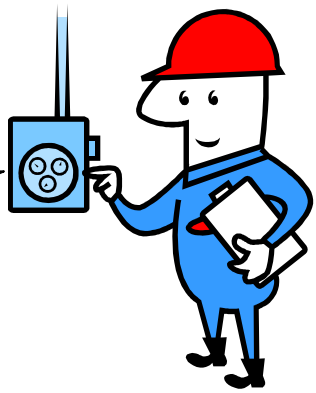


Complete the picture by filling in the space in the box.

Draw two things to make it electrically dangerous!

Look at your picture and write one warning that make it electrically safe. Cut it out and stick it.

Exchange your picture with one of your classmates. Write a warning for his/her picture dangers. Cut it out and stick it.



WARNINGS:

ELECTRICAL SAFETY QUESTIONNAIRE

- Complete the questionnaire:

	SAFE	UNSAFE	SCORE
A. Have wet hands when using electrical appliances.			
B. Wear shoes when drying your hair with the hairdryer.			
C. Make sure all cords and plugs are in good condition.			
D. In the kitchen leave the cables near or on the cooker.			
E. Push all plugs firmly into the power points.			
F. Put your drink on the television.			
G. Don't put lit candles on electrical things.			
H. Leave leads from electrical items lying across the floor.			
I. Don't stick anything into the holes of a socket.			
J. Stay away from pylons and power lines.			
		TOTAL	

- Check your answers and write down the score.
- Your result is…

FROM 0 TO 6: DANGER!!! ELECTRICITY IS VERY DANGEROUS.
You must learn a LOT more about it. Have a look at the posters we did to know how to be safe!

FROM 8 TO 12: You know some things about ELECTRICAL SAFETY. The posters help you to learn a bit more.

FROM 12 TO 16: You know quite a lot about ELECTRICAL SAFETY.

FROM 18 TO 20: CONGRATULATIONS!!! You are an EXPERT on ELECTRICAL SAFETY!! You should help classmates that are not aware of electrical dangers.

- Fill in your diploma.

ELECTRICAL SAFETY DIPLOMA

I

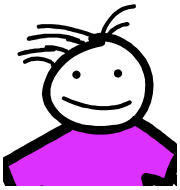
PIECE OF ADVICE
I should

SCORE:

A	B	C	D	E
SAFE: 0 UNSAFE: 2	SAFE: 2 UNSAFE: 0	SAFE: 2 UNSAFE: 0	SAFE: 0 UNSAFE: 2	SAFE: 2 UNSAFE: 0
F	**G**	**H**	**I**	**J**
SAFE: 0 UNSAFE: 2	SAFE: 2 UNSAFE: 0	SAFE: 0 UNSAFE: 2	SAFE: 2 UNSAFE: 0	SAFE: 2 UNSAFE: 0

WHO DO YOU AGREE WITH?

- These children are from the Peruvian villages with and without electricity that you have seen in the video. Who do you agree with??

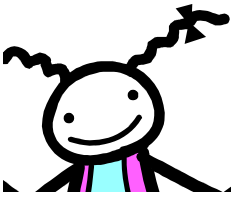


In my village there's no electricity. We use wood fires for cooking and we store food in the fridge.

MANUEL

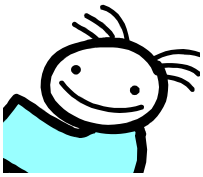
In my village there's a power station. The most positive thing is that we have light. We can go to the park at night to celebrate birthdays.

NELLY



In my village we only have candle and fire power. We can't use electrical things. We use candles to have light at night. We go to bed early.

MARIA



I have electricity at home. I can watch television but I haven't got light to do homework when it's dark.

JOSE

- **In which village do you think people are happier? Why?**

- **If you had to live without electricity, which electrical gadget would you miss the most?**

- **Which electrical gadget could you live without?**

LET'S DO A SURVEY!

We are ……

Our question is…	

We ask …	

Collecting DATA

- Ask your question to the group of people you have to do the survey on.
- Write each person's name and their answer in the grid.

NAME	**If there was not electricity, ……..?**
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

LET'S DO A SURVEY!

2nd STEP

Processing SURVEY'S RESULTS

- Count the results.
- Use the grid to report the results

TOTAL OF PEOPLE ASKED	WE ASKED …….. …… (number) (group of people)

What would ..... miss?	**Number of .....**

- Report your results:

Two Seven …….. (number)	students teachers parents …….. (group of people)	out of	fifteen twenty twenty-five …… (total people asked)	would miss	light heating computer …… (electrical appliance)	the most

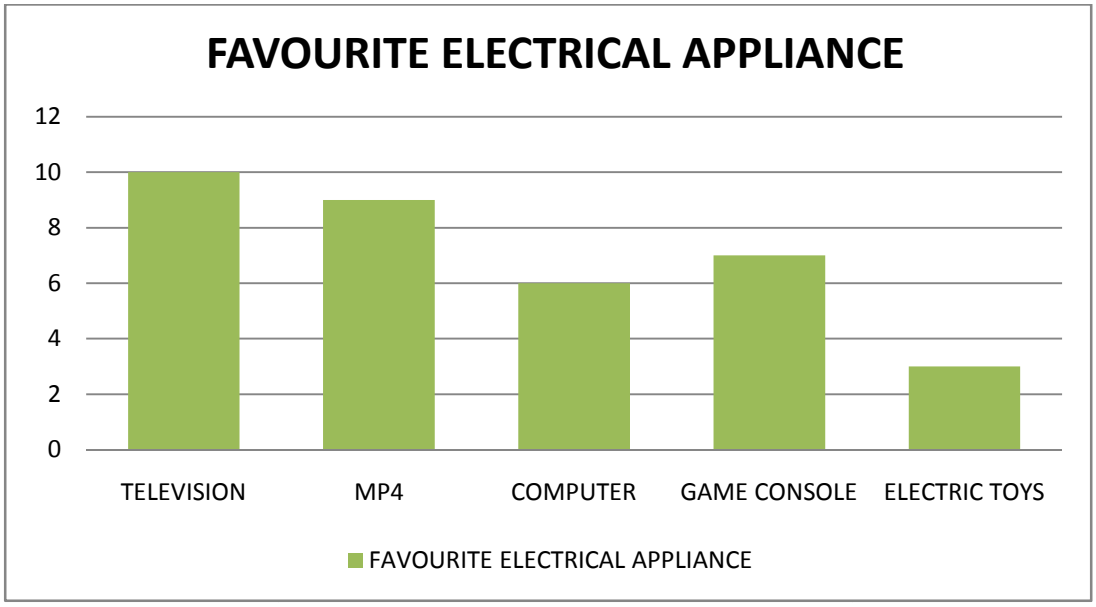
LET'S DO A SURVEY!

3rd STEP

Studying a bar chart

- Look at the chart and answer the questions below.

- The following chart shows the result from a survey in which 35 children from 10 to 12 years old were interviewed.



- What was the survey about?

- What does the chart show?

- What is the data on the horizontal line?

- What is the data on the vertical lines?

- How many more children say the MP4 is their favourite electrical appliance?

- How many children say the computer is their favourite electrical appliance?

- If you were asked, what would you answer?

LET'S DO A SURVEY!

Making a bar chart

4th STEP

- Read the instructions and make your bar chart.

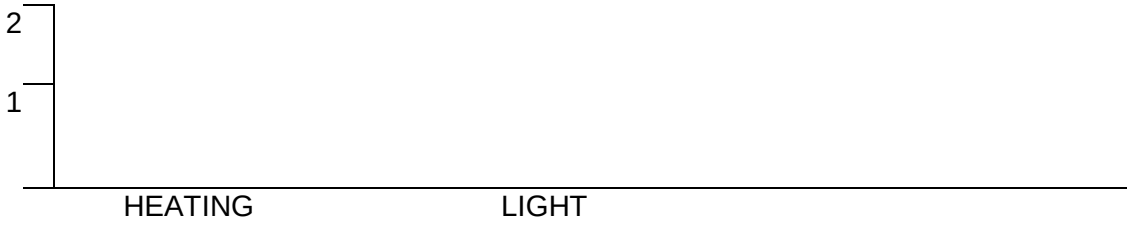
YOU NEED: A3 SQUARED/GRAPH PAPER, RULER, PENCIL, RUBBER CRAYONS

1. Draw two perpendicular lines

2. Label the vertical line as number of people. Label the horizontal line as electrical appliances.

3. Mark the centimetres on the vertical line. Each centimetre will represent one person, so draw bars to show the number of people you asked in the survey. (e.g. 10 cms = 10 people 5 cms = _____ people)

4. Mark the electrical appliances on the horizontal line.



5. Take your survey results grid and draw the bars. Remember that each person you counted is equivalent to one centimetre on the vertical line.

6. Think about a title and a short introduction for your chart.

LET'S DO A SURVEY!

5th STEP

Present your bar chart

- Prepare you presentation using the boxes below.

Our survey is about	what people would miss the most what people could live without	if there wasn't electricity

We asked	fifteen twenty twenty-five …….. (total people asked)	students teachers parents …….. (group of people)

Our bar chart shows that	students teachers parents …….. (group of people)	would miss	light heating computer ……..	the most
		could live without	light fridge ……..	

Our bar chart shows that	light heating computer …… (electrical appliance)	Is the second third forth	electrical appliance	students teachers parents …….. (group of people)	would miss the most could live without

POWER CUT

IF AN EVIL CREATURE CAME

AND CAUSED A GLOBAL POWER CUT

I WOULD SURE BECOME

SO SO SO SAD

BUT IF A MAGIC FAIRY CAME

AND GAVE JUST ONE WISH TO M

I WOULD LIKE TO HAVE BRIGHT LIGHT

AFTER COUNTING ONE TWO THREE.

SAVE ELECTRICITY=SAVE THE ENVIRONMENT

- **Read the text in the boxes below. Cut and stick them in the correct arrow.**

IF WE DON'T USE IT PROPERLY	THANKS TO ELECTRICITY, WE CAN ……, …… AND MANY OTHER THINGS.	AND CONTRIBUTE TO GLOBAL WARMING 	WE POLLUTE THE ENVIRONMENT	ELECTRICITY IS VERY IMPORTANT FOR US.	 PROTECT THE ENVIRONMENT	WE HAVE TO USE IT RESPONSIBLY AND WE'LL

KEY

SAVE ELECTRICITY=SAVE THE ENVIRONMENT

- **Read the text in the boxes below. Cut and stick them in the correct arrow.**

ELECTRICITY IS VERY IMPORTANT FOR US.	THANKS TO ELECTRICITY, WE CAN ……., ……. AND MANY OTHER THINGS.	IF WE DON'T USE IT PROPERLY	WE POLLUTE THE ENVIRONMENT	AND CONTRIBUTE TO GLOBAL WARMING 	WE HAVE TO USE IT RESPONSIBLY AND WE'LL	 PROTECT THE ENVIRONMENT

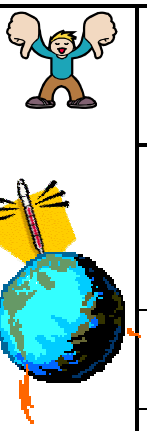
20

LET'S DO… an electricity eco-audit

- Go around the school and find three places where electricity is used properly and three where it isn't. You can have a look at:

  - HEATING
  - LIGHTING
  - APPLIANCES
  - …

WHERE?	WHAT?
6B Class	The heating is on and the windows are closed.



WHERE?	WHAT?	WHAT SHOULD BE DONE?
CORRIDOR	Lights are on and there's sun light	Turn lights off and use sun light.

LET'S CHOOSE... our TOP 3 tips for saving electricity

WHAT ARE YOUR TOP 3 TIPS FOR SAVING ELECTRICITY?

ME

OUR GROUP

OUR CLASS TOP 3

ARE YOU AN ELECTRISAVER?

- **What about you? Are you taking care of the environment??**

1. **Do you really think before switching on the light when you get into a room?**
   A. Sometimes.
   B. Never.
   C. Most of the times.

2. **When you get into a room and you see light is on unnecessarily, what do you do?**
   A. I leave it on.
   B. I switch it off.
   C. I don't mind.

3. **When you get out of a room and there's no one inside, do you switch off the lights?**
   A. No, I don't.
   B. Sometimes.
   C. Yes, of course.

4. **When it's cold inside a room and you see a window is opened, what do you do?**
   A. Nothing.
   B. I close it.
   C. I put on my jacket.

5. **When the heating is too high and you feel very hot, what do you do?**
   A. I say it to the person in charge.
   B. I take off some clothes.
   C. I open the windows.

6. **Who can contribute to protect the environment and avoid global warming**
   A. Politicians.
   B. Me.
   C. Everybody.

7. **Have you learnt that you can do something to protect the environment?**

   A. Yes, I do. I try to protect the environment.
   B. I think I can't protect the environment.
   C. I think I can do very little for the environment.

SCORE

1	2	3	4	5	6	7
A: 2	A: 1	A: 1	A: 1	A: 3	A: 2	A: 3
B: 1	B: 3	B: 2	B: 3	B: 2	B: 2	B: 1
C: 3	C: 1	C: 3	C: 2	C: 1	C: 3	C: 2

From 7 to 11 LOW ENVIRONMENTAL AWARENESS / NOT VERY GOOD ELECTRISAVER

From 12 to 16 MEDIUM ENVIRONMENTAL AWARENESS / GOOD ELECTRISAVER

From 17 to 21 points HIGH ENVIRONMENTAL AWARENESS /VERY GOOD ELECTRISAVER.

ELECTRISAVERS LEAFLET

TIPS FOR MAKING A NICE LEAFLET		
PRESENTATION	CONTENT	IMPACT
☐ Do nice handwriting ☐ Use colours ☐ Use pictures	☐ Use short sentences ☐ Support text with pictures	☐ Persuade people to save electricity

COVER:

-Write a slogan here

-It has to be short and clear

- You can include pictures.

WHY IS SAVING ELECTRICITY IMPORTANT?

-Most of the electricity we use comes from…

-The environment…

TIPS

- Write your best tips for saving electricity.

WHAT I THINK ABOUT MY LEAFLET

PRESENTATION	INFORMATION	IMPACT
☐ Have I used nice handwriting? ☐ Have I used colours? ☐ Have I used pictures?	☐ Have I used short sentences? ☐ Have I supported the text with pictures?	☐ Is it going to convince people to save electricity?
I think it's BRILLIANT VERY GOOD OK	I think it's	I think it's

My favourite part is ……..

I should improve ……

- Did you like making the leaflet?

……..

LEAFLET PRESENTATION

- **Here you have some tips for the oral presentation:**

☐ Speak clearly
☐ Show the parts you are talking about
☐ Look at the audience.

My slogan is	

Here it says saving electricity is important because...	

My tips for saving electricity are	

WHAT I THINK ABOUT MY CLASSMATE LEAFLET

My response partner is.....

PRESENTATION	INFORMATION	IMPACT
☐ Has he/she used nice handwriting? ☐ Has he/she used colours? ☐ Has he/she used pictures?	☐ Has he/she used short sentences? ☐ Has he/she supported the text with pictures?	☐ Is it going to convince people to save electricity?
I think it's BRILLIANT VERY GOOD OK	I think it's	I think it's

- **What do you like the most of the leaflet?**

……

- **What did you like from the oral presentation?**

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