S T E M

Science, Technology, Engeneering and Mathematics

S T E M: Electric circuits

We are surrounded by technology and innovation.

Electricity is one of the greatest technological innovations of mankind.

Scientists and inventors have worked to decipher the principles of electricity since the 1600s.

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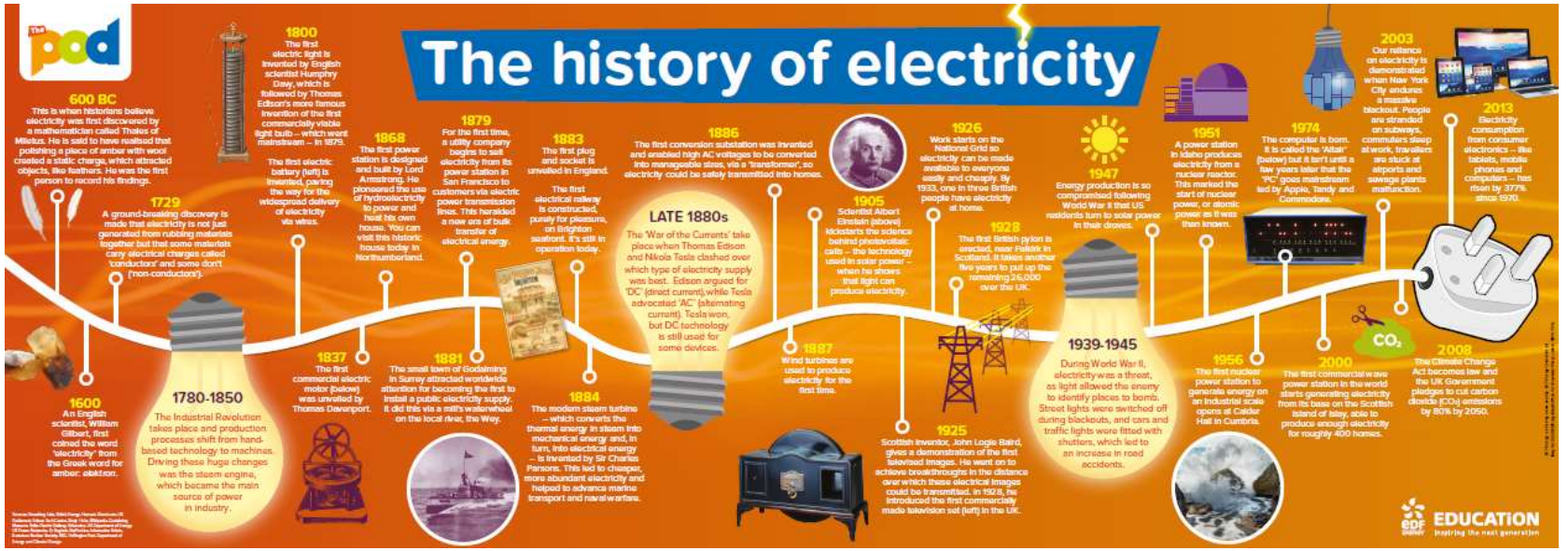

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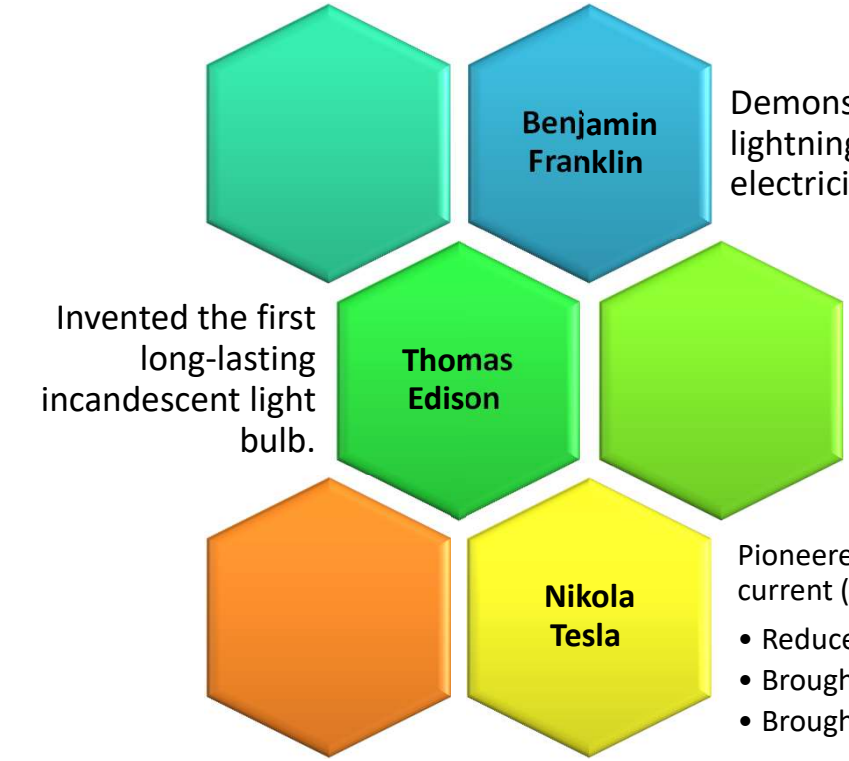

Demonstrated that lightning is electricity.

Invented the first long-lasting incandescent light bulb.

Pioneered the generation, transmission, and use of alternating current (AC) electricity:

- Reduce the cost of transmitting electricity over long distances.
- Brought electricity into homes to power indoor lighting
- Brought electricity into factories to power industrial machines.

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1st Experiment – Conductive dough

Materials:

- 230 g water
- 150 g salt
- 1 table spoon vegetable oil
- 160 g flour
- table spoons of cream of tartar
- food coloring

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2nd Experiment – Spooky electric circuits

Materials:

- Conductive dough of different colors
- Electric wires
- Battery 9 V
- LED's

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3rd Experiment – Electric messages

Materials:

- LED's (or buzzer)
- Electric wires
- Battery
- Switch
- Paper and pencil

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4th Experiment – Mini aspirator

Materials:

- Plastic bottles of 1,5 L and 0,5L
- Hot glue
- Welding iron
- Cutter X-ato
- Empty milk package 1L
- Scissors
- Pencil
- Electric motor
- Connecting wires
- 1.5V batteries and stand
- Adhesive tape
- Card
- Flexible tube, about 30 cm
- Ruler

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The science behind it…

- Electricity
- Circuit
- Conductor and insulator
- Battery and it's polarity
- Current
- Voltage
- Resistance
- Short circuit

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S T E M: Electric circuits

The science behind it…

1st Experiment	Students learn what makes a substance conductive on a chemical level. With some creativity, experimentation, and research, different materials can be used to construct circuits.
2nd Experiment	Playdough is not extremely conductive and is malleable, allowing students to make a big range of circuits without worrying about including additional components.
3rd Experiment	Students can discover electric message systems, like International Morse Code
4th Experiment	Students make a small vacuum cleaner using their electric circuits knowledge. The experiment also allows them to learn how vacuum and atmospheric pressure work.

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Inspiramos hoje os líderes de amanhã!

Inspire today the leaders for tomorrow!