**Year 8 Electricity**

Please complete this week’s National Oak Academy lesson.

Once this is completed have a look at this link <https://www.bbc.co.uk/bitesize/topics/zgy39j6> and answer the following questions:-

**What is Electricity?**

Complete the gap fill:

1) Electricity is the presence or flow of **………….. ……………**

2) An electric current is the **…………** of **…………….** around a circuit.

3) **………….. ……………** is the build-up of …………. on an insulator.

Watch the video on how electricity if used to power a car and answer the following questions:

4) What does a car battery produce?

5) What four things does it start on the car?

6) True or False?

Inside the battery stored chemical energy is changed to electrical energy?

7) Where do the electrons produced, got to in the car?

8) The battery gets recharge by the …………………. which turns the kinetic energy of movement back into ………………… energy which ……………… the battery.

Read the section on ‘How is electricity used?’ and answer the following questions:

9) True or False?

Everything is made up of tiny particles which may have positive or negative charges. Electricity is the presence or flow of these charged particles.

10) True or False?

All materials contain positively-charged particles called electrons.

11) Why are electrons good conductors of electricity in metals?

12) What is electric current? Give three examples of its use.

13) What are insulators? Give an example.

**Static Electricity?**

Complete the gap fill:

1. When t….. objects are rubbed together, e………….. are t……………. from one object to the other. One object becomes p………… and the other n…………….. A non-contact force exists between c………….. objects.
2. What is an atom?
3. What charge does an electron have?
4. True or False?

If an atom gains an electron, it becomes positively charged.

If an atom loses an electron, it becomes positively charged.

Static electricity is when an electric charge accumulates on an insulated object, e.g. because of friction.

Complete the gap fill:

1. When you rub two different materials against each other, they become e…………… charged. This only works for electrically ……………. objects and not with materials like ……………, which conduct.
2. Give an example of the above. Hint think about a balloon and your jumper.
3. What is a Van de Graaff generator?

Read the section on ‘Forces from static electricity’ and answer the following questions:

1. What is an electric field?
2. What is a non-contact force?
3. True or False?

Two charged objects will, repel each other if they have like charges (they are both positive or both negative).

Two charged objects will, repel each other if they have opposite charges (one is positive and the other is negative)

1. Draw a diagram to explain how charges repel and attract.
2. How can you tell if an object is charged?

**Current and Potential difference?**

Read the information on what current and potential difference are and answer the following questions:

1. Which statement about electric current is correct?
2. It always flows clockwise
3. It gets used up as it goes around the circuit
4. It does not get used up as it goes around the circuit
5. What is the definition of current?
6. The flow of charge
7. A measure of difference in energy
8. How difficult it is for electrons to flow
9. What term is used instead of voltage?
10. Resistance
11. Potential difference
12. Current

Complete the gap fill:

1. Electric circuits can be s………… or p………….. An a…………. measures current and a v…………… measures a potential difference. Some materials have low r…………… and are c………………; others are insulators.