Volts and Current Video – Answer key

1) What is one important property of a river?

One important property of a river is how much current of water is flowing.

2) What do you measure the amount of charge passing a certain point in?

Charge is measured in coulombs.

3) What is the formula for calculating current?

I = current C = coulombs s = 1 second

$$I = \frac{C}{S}$$

4) How is measuring current in electricity similar to measuring current in water?

Measuring current in each is similar because you need to calculate the number of units that are flowing past a point for both. In electrical current, the units are coulombs/second. In water current, it might be buckets/second

6) What is the special name given to a coulomb per second?

The name given to a coulomb per second is called an amp.

7) What does it mean when there is a current of 5 amps?

When there is a current of 5 amps it means that 5 coulombs are flowing past a point in one second.

8) What is another name for voltage?

Another name for voltage is potential difference.

9) What object can be compared to voltage?

Voltage can be compared to a lake.

10) Why is there little current in a lake?

There is little current in a lake because it is flat.

11) What would happen if you started to raise one side of the lake?

If you started to raise one side of a lake, then the water would start to flow from the raised end to the lower end.

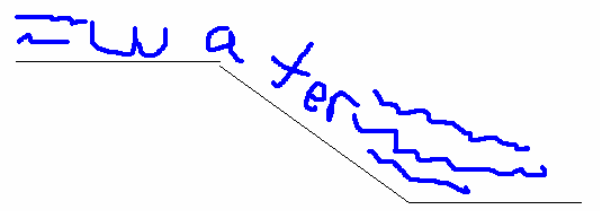
12) What type of potential difference is it when you raise one side of the lake? Explain

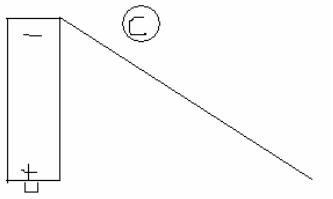
Once you raise one side of a lake, you create a difference in gravitational potential because the side that was lifted up has more potential to flow than the lower side.

13) How do you make electrical current flow?

To make electrical current flow, you need to create a potential difference in charge.

14) Compare electrical potential to gravitational potential. Include a diagram.





15) How do electrons tend to flow? Electrons flow from the higher potential (negative terminal of battery) to the lower potential (positive terminal of battery).

16) What happens when you lift one side of the lake even higher?

The water will start to flow even quicker and you have just raised the gravitational potential.

17) What happens when you increase the electrical potential?

When you increase the electrical potential the greater the current will become or the faster the electrons will flow.

18) What does the word potential mean? The word potential means the potential to do work.

19) How can the potential to do work be represented?

The potential to do work can be represented as joules per coulomb. 1 volt = $\frac{J}{C}$

20) What is the special name for 1 J per coulomb called?

The name for 1 J per coulomb is called the volt.

21) What does in mean if there is a potential difference across a wire of 10 volts?

That means that each coulomb of charge has the potential to do 10 Joules of work before it renters the battery.

22) How much work can 1 coulomb of charge do in a 1.5 volt battery?

I coulomb of charge in a 1.5 volt battery can do 1.5 Joules of work before it renters the battery.

23) What are the two fundamental quantities in electricity?

The two fundamental quantities is electricity are current (I) and Volts (V)