

# Reactivity

## Lesson 16 - Producing a Voltage L1

Chemistry - Key Stage 3

Miss Fenner



Can you think of a hypothesis to test using the following equipment?

- Metre ruler
- Various masses e.g. 10g, 20g, 50g, 100g
- Spring

**“How does mass impact the extension of a spring?”**



Can you think of a hypothesis to test using the following equipment?

- 3 different size beakers
- Thermometer
- Bunsen burner
- Water

**“How does the size of a beaker affect the time taken for 100ml of water to cool by 10 degrees celsius?”**



# Independent Practice

Here is the **equipment** you have to work with:

- A lemon
- Wires
- Crocodile clips
- Voltmeter
- Electrodes made of various metals

What hypothesis could you test?



# Independent Practice

Which combination of metal electrodes produces the biggest voltage?



# What is the independent variable?

## Option 1

The variable I measure

## Option 2

The variables I keep the same

## Option 3

The variable I change



# What is the dependent variable?

## Option 1

The variable I measure

## Option 2

The variables I keep the same

## Option 3

The variables I change



# Independent Practice

Match each variable to its definition

Independent Variable

The variable I keep the same in a scientific investigation.

Dependent Variable

The variable I change in a scientific investigation.

Control Variable

The variable I measure in a scientific investigation.



# Independent Practice

Match each variable to its definition

Independent Variable

The variable I keep the same in a scientific investigation.

Dependent Variable

The variable I change in a scientific investigation.

Control Variable

The variable I measure in a scientific investigation.



I investigate how the mass of a netball effects how far I can throw it.

What are the independent, dependent and control variables for this experiment?

Independent - mass of the netball.

Dependent - length the netball is thrown.

Control - same person throwing the netball, same weather conditions.



I investigate the volume of liquid that can be absorbed by different brands of kitchen roll.

What are the independent, dependent and control variables for this experiment?

Independent - brand of kitchen roll.

Dependent - volume of liquid absorbed.

Control - quantity of kitchen roll, use the same liquid each time, fold or scrunch the kitchen roll.



I investigate how long it takes different volumes of water to reach 100°C.

What are the independent, dependent and control variables for this experiment?

Independent - volume of water.

Dependent - time taken for the water to reach 100°C.

Control - same starting temperature of the water, same size and shape beaker, same heating method, same thermometer.



# Independent Practice

Which combination of metal electrodes produces the biggest voltage?

Independent -

Dependent -

Control -



# Independent Practice

Independent - the combination of metal electrodes.

Dependent - the voltage produced.

Control - lemon used, size of electrodes, voltmeter used, crocodile clips used, wires used.

