**Junior Cert Science Investigations – Coursework B**

**2013**

**Biology**

Compare by means of investigation the vitamin C content of a number of commercial and fresh fruit juices.

**Chemistry**

Compare by means of investigation methanol, propan-l-ol and candle wax in terms of their effectiveness as fuels.

**Physics**

Investigate any 2 factors that affect the output from a solar cell when light is shone on it

**2012**

**Biology**

Investigate named seeds, chosen by you, to examine the effects of (a) placing the seeds in a fridge for a few days before sowing (b) placing the seeds in a hot press for a few days before sowing (i) the percentage of seeds that germinate, (ii) the speed of germination of the seeds

**Chemistry**

Investigate the effects on the amount of carbon dioxide dissolved in a fizzy drink when it is stored in (a) an open container (b) a closed container, at different conditions of (i) temperature, (ii) stirring or shaking, (iii) time elapsed

**Physics**

Investigate the factors that determine the rate at which heat is lost from different types of drinking cups that contain hot liquid.

**2011**

**Biology**  
Carry out an investigation to study the anaerobic respiration of yeast with particular reference to (i) change of temperature with time, (ii) the evolution of carbon dioxide with time and (iii) the change of  
density with time.  
  
**Chemistry**  
Carry out an investigation to study the pH changes that take place when neutralisation reactions occur between two named acids and a named base.  
  
**Physics**  
Investigate the factors that determine the force of friction between a wooden block and the surface on which it is resting.

**2010**

**Biology**

Qualitatively investigate two factors that affect the uptake of water by a plant.

**Chemistry**

Compare by way of investigation the abilities of different indigestion remedies to neutralise excess stomach acid.

[A pre-prepared stock solution of 0.15 M HCl may be used as “stomach acid”.]

**Physics**

Investigate two factors that affect the distance taken for a toy car to stop after rolling down a ramp.

**2009**

**Biology**

Investigate the relationship between reaction temperature and the effectiveness of action of the enzyme amylase on starch.

**Chemistry**

Qualitatively investigate the effectiveness of three methods of preventing an object containing iron from corrosion.

**Physics**

Investigate the relationship between the size of the electric current passing through

a length of wire and its heating effect.

**2008**

**Biology**

Florists often supply a sachet of flower food/preservative with bunches of cut flowers.

Carry out an investigation to compare the effectiveness of using a commercially

supplied flower food/preservative with two other household substances as additives to prolong the life of cut flowers in a container of water.

**Chemistry**

Marble chips react with a dilute hydrochloric acid solution. Carbon dioxide gas is released. Investigate how particle size affects the speed at which mass is lost from the reaction mixture as the gas is released.

**Physics**

Clothes made from certain fabrics, e.g. denim, are not suitable for hill walking or mountain climbing. Carry out an investigation to compare the thermal insulating properties of three different fabrics when they are dry and when they wet. Denim must be included as one of the three fabrics.

**2007**

**Biology**

Carry out a quantitative survey of the plant species in a local habitat.

**Chemistry**

Investigate how the concentration of a hydrogen peroxide solution affects the speed at which it decomposes to produce oxygen gas.

**Physics**

Carry out an investigation of the relationship between the length of a metallic conductor (e.g. nichrome wire) and its resistance.

**2006**

**Biology**

A gardener suggests that the length of time taken for marrowfat peas to germinate is decreased if they are soaked in water in advance. Carry out a quantitative investigation of this suggestion.

**Chemistry**

Investigate a range of plant pigments to evaluate their effectiveness as acid-base indicators.

**Physics**

Investigate the relationship between the temperature of a rubber squash ball and the height to which it bounces.