**Junior Cert Experiments Master-Checklist**

**Biology**

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| OB3 | Qualitative food tests for starch, reducing sugar, protein and fat. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OB5 | Investigate the conversion of chemical energy in food to heat energy. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OB8 | Investigate the action of amylase on starch; identify the substrate, product and enzyme. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OB11 | Carbon dioxide levels in inhaled and exhaled air. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OB39 | Investigate the variety of living things |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OB44 | Prepare a slide from plant tissue and sketch the cells under magnification. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OB49 | Show that starch is produced by a photosynthesising plant. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OB58 | Investigate the conditions necessary  for germination |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OB59 | Study a local habitat, using appropriate  Instruments and simple keys to show the variety and distribution of named organisms. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OB65 | Investigate the presence of micro-organisms in air and soil. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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**Chemistry**

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| OP2 | Separate mixtures using a variety of techniques: filtration, evaporation, distillation and paper chromatography. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP17 | Grow crystals using alum or copper sulphate. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP19 | Investigate the pH of a variety of materials using the pH scale |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP22 | Show that approximately one fifth of the air is oxygen; show that there is CO 2 and water vapour in air. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP24 | Prepare a sample of oxygen by decomposing H2O2 using MnO2 as a catalyst. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP27 | Prepare carbon dioxide and show that it does not support combustion. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP30 | Conduct a qualitative experiment to detect the presence of dissolved solids in water samples, and test water for hardness (soap test). |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP38 | Titrate HCl against NaOH, and prepare a sample of NaCl. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP46 | Carry out an experiment to demonstrate that oxygen and water are necessary for rusting. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP51 | Investigate the reaction between zinc and HCl, and test for hydrogen. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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**Physics**

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| OP2 | Measure the mass and volume of a variety of solids and liquids and hence determine their densities. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP6 | Investigate the relationship between the extension of a spring and the applied force. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP20 | Identify different forms of energy and carry out simple experiments to show the following energy conversions:  (a) chemical to electrical to heat energy  (b) electrical to magnetic to kinetic energy  (c) light to electric to kinetic energy. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP23 | Investigate and describe the expansion of solids, liquids and gases when heated, and contraction when cooled. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP31 | Carry out simple experiments to show the transfer of heat energy by conduction, convection and radiation; investigate conduction and convection in water. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP34 | Show that light travels in straight lines. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP38 | Investigate the reflection of light by plane mirrors, and  illustrate this using ray diagrams; demonstrate and explain the operation of a simple periscope. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP46 | Plot the magnetic field of a bar magnet. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP49 | Test electrical conduction in a variety of materials, and classify each material as a conductor or insulator. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OP50 | Set up a simple electric circuit; use appropriate instruments to measure current, potential difference (voltage) and resistance, and establish the relationship between them. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |