



# St John's CE Middle School

## Key Performance Indicators

*Pupils who are working at age related expectations at the end of the year will have a secure knowledge of these Key Performance Indicators.*

### KS3 Year 8 Science

#### Biology

<b>Health &amp; Lifestyle</b>
*Explain the role of each nutrient in the body*
*Explain how each part of the digestive system works in sequence, including adaptations of the small intestine for its function and how enzymes affect the rate of digestion*
*Explain the effects of drugs, alcohol and smoking on people's lifestyles*
<b>Ecosystem Processes</b>
*Know the reactants and products of photosynthesis including both the word and symbol equations*
*Label the structures of the leaf and link these to their function. This includes the role of the chloroplast*
*Explain deficiency symptoms in plants*
*Know the reactants and products of aerobic and anaerobic respiration and explain the differences between the two types*
*Explain the link between food chains and energy*
*Explain why toxic materials have greater effect on top predators in a food chain*
*Explain why different organisms within the same ecosystem have different niches*
<b>Adaptions and Inheritance</b>
*Describe how organisms are adapted to their environment*
*Explain trends and draw detailed conclusions about predator-prey relationships*
*Explain how characteristics are inherited through and coded for by genes*
*Explain how natural selection leads to evolution and some factors that may have led to extinction*

## Chemistry

<b>The Periodic Table</b>
*Describe patterns in the properties of Group 1, 7 and 0 elements*
<b>Separation Techniques</b>
*Identify the appropriate separation technique for different mixtures*
*Explain what a solubility graph shows*
*Compare evaporation and distillation*
<b>Metals and Acids</b>
*Use formula equations to show what happens when metals react in different acids*
*Explain the reactivity of metals according to how they react with oxygen*
*Link a metal's reaction with its place in the reactivity series*
*Explain why given displacement reactions are predicted to occur or not occur*
<b>The Earth</b>
*Give a detailed explanation of the sedimentary rock cycle*
*Link properties of igneous and metamorphic rocks to their methods of formation*
*Give a detailed description and explanation of a rock's journey through the rock cycle*

## Physics

<b>Electricity &amp; Magnetism</b>
*Explain, in terms of electrons, why something becomes charged*
*Set up simple circuits (series & parallel) and measure current and potential difference within them. Write conclusions based on their results*
*Calculate resistance of a circuit and plot accurate results on a line graph*
*Explain how an electromagnet works*
<b>Energy</b>
*Compare energy transfers to energy conservation*
*Explain, in terms of particles, how energy is transferred*
*Explain in detail the processes involved during heat transfers, why certain materials are good insulators and why some objects radiate more energy*
*Explain how conservation of energy applies in one example*
<b>Motion &amp; Pressure</b>
*Calculate speed from a distance-time graph*
*Calculate pressure*
*Use calculations to explain situations involving moments*