


# Westfield Academy - Curriculum Information

*In year 7 your child will gain the foundational knowledge in fundament topics in science. They will also be introduced to the scientific method.*

## Science

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| <b>Head of Department</b>                    | Ms Zainab Khan & Mr Benjamin Waite   |  |
| <b>Head of Department email</b>              | <a href="mailto:ZKH@westfield.academy">ZKH@westfield.academy</a><br><a href="mailto:BWA@westfield.academy">BWA@westfield.academy</a> |   |
| <b>Lessons per 2 week cycle</b>              | 7 lessons  |   |
| <b>Specification/Board details/Key stage</b> | KS3 – Springboard science curriculum   |   |

## Term by term

| Autumn 1                           | Autumn 2                      | Spring 1                           |
|------------------------------------|-------------------------------|------------------------------------|
| Yr7 – Ecology                      | Yr7 – Particle Model & Energy | Yr 7 – Organisation: Major systems |
| Spring 2                           | Summer 1                      | Summer 2                           |
| Yr7 – Atoms compounds and elements | Yr7 – Cells                   | Yr7 – Forces                       |

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| <b>Key Skills developed</b> | <p><b>Biology:</b> Students learn the fundamentals of biology which starts with the ecology. They learn the different kingdoms that all organisms are part of and their characteristics. They then learn how organisms work with the non-living parts of the habitat. Students learn what organisms compete for and how they are adapted to survive and reproduce. Finally students learn how to sample species in a habitat. The next topic is organisation. They learn about the major organs that humans and animals have. They learn the structure and function of muscles, digestive system, nervous system, circulatory system and gas exchange system. Finally, in biology that focus on the basic unit of all life the cell. They learn how to observe cells using a microscope, how to calculate the magnification of small objects, the structure and function of sub-cellular structures, the movement of particles via diffusion, and learn about unicellular structures.</p> |
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|   | <p>They then learn how the human body is organised hierarchically explaining the role of larger structures that govern the human body like muscles, tendons, bones and ligaments.</p> <p><b>Chemistry:</b> Students learn the fundamentals of chemistry with the particle model. They learn that all substances are made of particles, they can represent states of matter, explain how states change when heated, describe what a property is a relate it to solid, liquids and gases, explain what gas pressure is and the factors that affect it. They then learn that a particle is an atom or compound. They learn how to draw atoms and their sub-atomic particles, they are introduced to the periodic table and use it to complete electron configurations. Student define, elements, compounds and mixtures and understand that the elements that make up a compound have different properties to the elements themselves. Students then move onto distinguish between pure and impure substances and describe different processes of how to separate a substance.</p> <p><b>Physics:</b> Student are first introduced to energy a fundament physics topic that helps us understand chemistry and biology. They learn how energy is transferred, the energy stores and how energy is generated via different energy resources that are renewable or non-renewable. Students then learn their first physics equation which is energy transferred = power x time. They learn how to convert units. Students then move onto forces. They recall examples of forces, they learn how to represent them in force diagrams.</p> |
| <p><b>Useful Websites</b></p>                   | <p>Senecalearning.com<br/>BBCbitesize.co.uk<br/>Carouselearning</p>   |
| <p>Reading/Literacy requirements /Key Words</p> | <p>In our curriculum we have in-house textbooks which students can take home for revision. Keywords or phrases are highlighted and/or underlined so students know what terminology they should be prioritising.</p>   |
| <p>Homework requirements</p>                    | <p>Homework revolves around retrieval of a set of core questions from a topic that students will be quizzed on each week.</p>   |
| <p>Personal Development Links</p>               | <p>An example of how Science contributes to Personal Development is by encouraging our students to have a growth mindset and attempt all tasks to the best of their ability. We also have a number of schemes of learning linking to topics on the PD curriculum; one example is when we study energy. We look at the responsible forms of energy generation and discuss disadvantages of renewable and non-renewable forms. We promote equality and diversity by exposing students to famous scientists of</p>   |

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|                              | different genders and ethnicities throughout our curriculum. |
| Trips/Visits (If applicable) | Space masterclass<br>RAF drone workshop                      |