

Oasis Academy Lister Park Science Curriculum: Statement of Intent



Purpose of study

The Science Curriculum will equip students with the knowledge of the key scientific principles that allow us to make sense of the world around us and the disciplinary knowledge which enables them to be good scientists in their lives – providing opportunities to investigate scientific theories and unpick evidence to derive their own conclusions that will enable them to make good choices for themselves, their families, community and our planet.

We value character, competence and community in our curriculum:

Character: the curriculum aims to ensure that students feel successful during their science education, that they feel knowledgeable and that they have become curious, critical thinkers that are able to make well informed decisions that they can communicate and justify effectively.

- **Competence:** We want our students to be curious learners who can apply their knowledge to the real world. To do this, we equip them with the fundamental substantive and disciplinary knowledge that allows them to ask good questions, evaluate information, access a range of scenarios and communicate their ideas and conclusions effectively and with confidence.
- **Community:** Our curriculum ensures that our students understand the impact of their decisions on themselves, their families, local communities and our planet. It demonstrates the complexity of these decisions and the importance of individual decisions on the collective. It will encourage students to be advocates for diversity, access to healthcare and a more sustainable way of living.



Core concepts and principles of progression

Our curriculum is designed to ensure that our students are **knowledgeable**. This is made up of substantive and disciplinary knowledge. Our curriculum is **well sequenced** so that students learn the most **fundamental knowledge first**, laying the foundations on which all other understanding rest. Over their science education, students will build on this knowledge in order to gain a deeper understanding of the **big, overarching ideas** in biology, chemistry and physics. Our core concepts are:

- **Secure Substantive Knowledge:** we believe that if they have secure substantive **knowledge**, they will feel confident in explaining the key scientific principles that govern everything that occurs within our universe. Concepts are revisited throughout their curriculum to ensure that fundamental knowledge is mastered first and then developed throughout the schemes of learning.
- **Develop Disciplinary Knowledge:** we also want to ensure that students have mastered the disciplinary knowledge – they understand how to be ‘*a scientist*’ and develop the skills necessary to be successful in science.
- **Secure subject specific literacy:** We want to ensure that students are equipped with a wide range of scientific vocabulary, an understanding of how scientific ideas are presented and communicated and an opportunity to engage in scientific literature within the curriculum and at home so that they are able to communicate their ideas effectively.
- **Link the ‘Big Ideas’ in science:** over their science education, students will build on this knowledge in order to gain a deeper understanding of the **big, overarching ideas** in biology, chemistry and physics. From understanding that all material in the Universe is made of very small particles, to the concept that energy cannot be created or destroyed to the key ethical arguments governing science; knowledge **is constructed and deepened** from the foundations up.
- **Concrete examples and real life contexts:** students have the opportunity to practice application of knowledge and interact with modelled examples repeatedly so that we ensure it is flexible and that they can apply it to a range of different situations & scenarios both within the classroom and more importantly, their real lives.
- **Practical work:** class practicals and teacher demonstrations are integrated into the curriculum so that it builds on and helps to enrich their substantive and disciplinary knowledge. Students complete work **accurately and precisely** in order to develop their procedural knowledge of the **scientific method**, giving deeper meaning to their understanding and providing students with the foundations to study science at a higher level.