Windmill Hill Academy
Subject Key Summary Points

At Windmill Hill Academy, we inspire pupils to be passionate lifelong learners by providing them with an ambitious broad and balanced curriculum, with the inclusion of a variety of enrichments, which will inspire them to have high aspirations. We inspire all learners to have strong desire to know or learn something and questioning their learning experiences to find out more. Throughout each year group and across the curriculum, pupils will make sustained progress, develop excellent knowledge, understanding and skills, regardless of their different starting points and backgrounds.

Subject	Science
Overall curriculum	An Daras Multi Academy Trust has used the latest pedagogy, research and understanding of local contextual needs to structure the curriculum design to ensure the growth of capability mature children who exhibit a sustained curiosity for learning. The 'lived values and experiences' of pupils are determined by the individual school and should run through all operational elements of curriculum provision. A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. At Windmill Hill Academy, we understand the need for our pupils to recognise the importance of science in every aspect of daily life through curiosity and enquiry. We want to increase pupils' knowledge and understanding of our world, by developing skills associated with science as a process of enquiry. Through a practical and enjoyable curriculum, where working scientifically is interwoven, we strive to inspire and excite our children, feeding their thirst for knowledge. Science at our school promotes and develops transferable skills; such as observation, communication, collaboration and enquiry through real life contexts.
Pedagogy	Our Sceince curriculum focuses on developing our pupils through the acquisition of **WISDOM, KNOWLEDGE, and SKILLS.** These have been selected because they ensure the **whole development of the child** will be prioritised, they enable pupils to meet the expectations of the National Curriculum 14 and have ambitions beyond the NC14. Each theme has a set of curriculum tools which ensure it is fully embedded through the lived experiences of staff, children, and stakeholders. Impact scales will measure the effectiveness of curriculum provision on the growth of children within these three **equally important** themes. Science has changed our lives and is vital to the world's future prosperity, and all pupils should are taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils are encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They are encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. **Knowledge** Children have weekly lessons in science. Teachers draw upon various sources for supporting planning, teaching and resourcing for science. All of which are carefully linked to the school's knowledge and skills

	organiser to ensure there is clear progression. The use of scientific equipment and scientific skills are modelled to the children by staff to ensure concepts are grasped and scientific understanding becomes embedded. Our evolving sustainability curriculum plan has and will continue to have many elements which link to the Science curriculum. **Capabilities** Pupils are given opportunities to develop social and emotional aspects of their development alongside their knowledge about science. Science is a subject which requires peer discussion, so children are given various opportunities to communicate clearly and rationally, listen to each other and develop rational thought processes. They are also given clear planned challenges to work in groups which extend their ability to participate in group work and take a leadership role in investigations. They are also extended regularly to make links and think creatively about the connection between their learning from one conceptual lesson to another. Over the course of a unit, children will have immersed themselves in a variety of lessons which will develop their role as Scientists, with their capabilities being developed alongside the knowledge they acquire. **Wisdom** As children learn to work scientifically and gain deeper understanding of the Science Units of Study, there is a behavioural response expected which exhibits as WISDOM. This will be identified and encouraged in the following ways: • Children test ideas and concepts with a rational approach (rather than accepting ideas without any testing) • Children make rational arguments which follow a clear line of thought (rather than not noticing contradictory arguments) • Children behave with care and respect in the natural environment with plants, animals, their diet, teeth, etc. (rather than knowing what is a healthy behaviour but not aligning their lifestyle with this) • Children make contributions to the wider community based on knowledge of the world around them (such as learning about waste and joining the student council to contribute ideas to school wide change in how we deal with rubbish) • Groups of children become more able to communicate and listen with care • Additional questions are asked which stem from curiosity and a desire for increased understanding as their interest in the world around them brings them a healthier and more informed outlook • Children become more hopeful rather than overwhelmed with climate anxiety; by learning the subject and engaging with visits to Eden, from Biffa, following WWF content, etc., there is a forum for children to contribute towards positive change where they are

	encouraged to study innovation and make new links rather than feel disconnected and overwhelmed by climate change. Teachers will help pupils with SEND to overcome any barriers to participating and learning and make any 'reasonable adjustments' needed to include pupils. To make lessons inclusive, teachers will anticipate what barriers to taking part and learning may pose for pupils with SEND. Some modifications or adjustments will be made or smaller steps to achieve the learning goal. Occasionally, pupils with SEND will have to work on different activities, or towards different learning intentions, from their peers. In EYFS, all areas of learning and development are important and inter-connected. These are stipulated in the 'Statutory framework for the early years foundation stage'. The most relevant statements for science are taken from the following areas of learning: • Communication and Language • Personal, Social and Emotional Development • Understanding the World
Assessment	Assessment is regarded as an integral part of teaching and learning and is a continuous process. There are planned opportunities within the curriculum plan to revisit learning from the current year but also previous year groups. **Formative** The class teacher is responsible for assessing all pupils in their class. This is mainly achieved through mini-plenaries, questioning, observation, end of unit tasks, marking, feedback from support staff and pupil self-assessment. **Summative** Head Start science post unit assessments are used as well as the TAPS approach to assessing working scientifically. Teachers analyse pupil results to identify any gaps and use this to inform their future learning. Summative assessment is used to monitor attainment and progress. End of year assessment is reported on Itrack and features on the annual report to parents. In EYFS, the level of development children should be expected to have attained by the end of the EYFS is defined by the early learning goals (ELGs). These are not used as a curriculum or in any way to limit the wide variety of rich experiences that are crucial to child development. Instead, the ELGs support teachers to make a holistic, best-fit judgement about a child's development, and their readiness for year 1. When assessing pupils with SEND, there will be carefully planned opportunities for them to demonstrate what they know and are able to do, using alternative means where necessary. Where a pupil is unable

	to use particular types of equipment, assessment of attainment will be based on understanding of the processes used as demonstrated through oral and written responses or, where possible, using alternative equipment. The attainment of pupils who require adapted equipment, such as particular switches or voice-activated software, will be assessed using these specialist items.
Culture	We understand the need for our pupils to recognise the importance of science in every aspect of daily life through curiosity and enquiry. We want to increase pupils' knowledge and understanding of our world, by developing skills associated with science as a process of enquiry. Through a practical and enjoyable curriculum, where working scientifically is interwoven, we strive to inspire and excite our children, feeding their thirst for knowledge. Science at our school promotes and develops transferable skills; such as observation, communication, collaboration and enquiry through real life contexts. Our evolving sustainability curriculum plan has and will continue to have many elements which link to the Science curriculum. Teachers will help pupils with SEND to overcome any barriers to participating and learning and make any 'reasonable adjustments' needed to include pupils. To make lessons inclusive, teachers will anticipate what barriers to taking part and learning may pose for pupils with SEND. Some modifications or adjustments will be made or smaller steps to achieve the learning goal. Occasionally, pupils with SEND will have to work on different activities, or towards different learning intentions, from their peers. For some activities, there may need to be a 'parallel' activity for pupils with SEND, so that they can work towards the same learning intentions as their peers, but in a different way. The use of technology to assist learning can removes barrier e.g. Widget, switches, text readers and speech and communicator devices. Using keyboard shortcuts instead of a mouse, enables all pupils to be involved. Generic software, such as Microsoft Office, contains accessibility facilities for SEND pupils. Screen filters may help with glare or using coloured backgrounds e.g. yellow background with blue script for dyslexic learners. Because the range of hardware and software is wide and continually expanding, teachers will always seek to collaborate with the SENDCo or colleagues e.g. previous teacher, on removing barriers to learning and participation for particular pupils with SEND. Pupils will also be able to advise on the technologies that suit them best.
Systems	In EYFS, the most relevant statements for science are taken from the following areas of learning: • Communication and Language • Personal, Social and Emotional Development • Understanding the World

	Reception Communication and Language • Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts. Personal, Social and Emotional Development • Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - healthy eating - toothbrushing - sensible amounts of 'screen time' - having a good sleep routine - being a safe pedestrian Understanding The World • Explore the natural world around them. • Describe what they see, hear and feel while they are outside. • Recognise some environments that are different to the one in which they live. • Understand the effect of changing seasons on the natural world around them. ELG Communication and Language Listening, Attention and Understanding • Make comments about what they have heard and ask questions to clarify their understanding. Personal, Social and Emotional Development Managing Self • Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. Understanding the World The Natural World • Explore the natural world around them, making observations and drawing pictures of animals and plants. • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

	The national curriculum for science aims to ensure that all pupils: ▪ develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics ▪ develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them ▪ are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future ▪ By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. *See the knowledge and skills organiser for science which demonstrates the progression through the year groups.*
Policies/key documents	▪ Whole School Long term horizontal curriculum map ▪ ADMAT Trust Skills Progression Map for Science ▪ Science Knowledge and Skills Organiser ▪ EYFS Long Term Overview ▪ Headstart Science Assessments ▪ TAPS for Science Assessment resources ▪ SEND Policy *All of these can be found on our website under the curriculum/policies tab.*
Perceptions from viewpoints (e.g. pupils/parents/Governors)	The monitoring of the standards of children's learning and the quality of learning and teaching of science is the shared responsibility of the Senior Leadership Team and the subject leader. The work of the subject leader also involves supporting colleagues in the teaching of science, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. A named member of the school governing body is briefed to overview the teaching of the curriculum in the school. Pupil: ▪ The vast majority of pupils (94%) agree that they are learning a lot at this school. *Pupil Survey Summer 2023.* ▪ "What I like about my school... Mathematics, English, science, Wild Tribe, Physical Education, breaktimes and not to forget the after-school clubs." *Pupils Survey Summer 2023.* ▪ "I like how they try to make lessons more fun or exciting!" *Pupils Survey Summer 2023.* Parent: ▪ The vast majority of parents agree (99%) that the teaching is good. *Parent Survey Summer 2023.* ▪ "They always get a warm welcome and the environment seems happy and stimulating for them." *Parent Survey Summer 2023* ▪ "I feel the school offers a friendly, welcoming learning environment, and in my opinion, staff do your utmost to help a child if they are having difficulties, be that with their learning, or well-being." *Parent Survey Summer 2023*

	▪ "My child is very happy to go to school and enjoys the activities that she is given." *Survey Summer 2023* Staff: ▪ All staff agree (100%) that leaders are doing all that they can to improve teaching. *Staff survey Summer 2023.* ▪ "It is a wonderful school to work in and I am very proud of all of our achievements!" *Survey Summer 2023* Governors: ▪ "The school has a lovely warm, happy, inclusive feeling about it. The children appear very engaged and enthusiastic, which is evident by the work displayed on the walls and how all classes appear to have a learning thread running through, incorporating a number of visible subjects such as Maths, English Writing, Art, History etc." *Governor feedback Spring 2022*