

Science Intent

At Wargrave House School, we aim to provide a nurturing, inclusive, and stimulating environment where all learners are supported in their understanding of the natural world. Our Science curriculum is designed to engage learners with diverse learning needs, fostering curiosity, observation skills, and critical thinking. Through hands-on, sensory-rich outdoor learning experiences, we aim to cultivate a love of science, environmental stewardship, and independence in our students.

The Science curriculum at Wargrave House School, will enable all learners, to:

- Develop a solid foundation in scientific inquiry and environmental understanding.
- Explore and connect with the natural world in a meaningful and accessible way through outdoor learning experiences.
- Enhance sensory, social, and motor skills through hands-on, real-world scientific exploration.
- Encourage self-confidence, independence, and problem-solving through direct interaction with nature and practical activities.
- Understand and appreciate the role of science in daily life, focusing on sustainability, conservation, and the environment.

Implementation

All learners are baselined on entry and access our enriched Science curriculum in a stage over age manner to ensure that gaps are filled, and learners are accessing the curriculum in an appropriate, accessible yet sufficiently challenge manner. We believe that all learning should be practical and linked to the real world, locally, nationally, and globally. As such, we are lucky to have a unique and exclusive link with a local outdoor learning area, called 'The puddle' which offers a poly tunnel; a forest schools' area; animals, a pond and an outdoor learning classroom. This helps us to embed a science enquiry-based model where Science comes to life for our learners.

Key Principles of Scientific learning at The Puddle:

1. **Inclusivity and Accessibility:** Our outdoor learning spaces, including the pond, poly tunnel, animal areas, forest schools' area, and outdoor classroom, are designed to be sensory-friendly, safe, and engaging for all learners. Each space allows for a range of learning styles and ensures every learner can participate in an enriching experience, whether through observation, touch, or movement.
2. **Sensory and Experiential Learning:** The outdoor areas offer a rich sensory environment where students can interact with nature. Whether it is feeling the soil in the poly tunnel, observing the life cycle of plants in the pond, or listening to the sounds of the forest, we aim to build connections to the natural world that go beyond traditional classroom learning.

3. **Holistic Development:** Outdoor learning supports the development of cognitive, emotional, physical, and social skills. Learners will have the opportunity to engage in cooperative activities, build fine and gross motor skills, and practice communication and social interaction in a natural setting. These experiences are tailored to each learner's needs and abilities.
4. **Real-World Connections:** The outdoor learning spaces serve as a platform for learners to make real-world connections to scientific concepts such as ecosystems, biodiversity, plant biology, animal care, and environmental sustainability. Our intention is to provide meaningful, hands-on learning experiences that students can relate to their everyday lives.

Outdoor Learning Areas and their Educational Focus:

1. **The Pond:**
 - a. **Focus:** Ecology, biology, and environmental science.
 - b. **Learning Activities:** Learners will observe aquatic life, investigate water quality, monitor pond health, and explore the life cycles of amphibians and insects.
 - c. **Example:** Learners will create a simple chart to track changes in the pond throughout the year.
2. **The Poly Tunnel:**
 - a. **Focus:** Plant biology, gardening, and sustainability.
 - b. **Learning Activities:** Learners will plant, care for, and harvest vegetables and flowers. They will learn about photosynthesis, plant growth, and seasonal cycles.
 - c. **Example:** Learners will learn how to compost, understanding the importance of recycling organic material.
3. **The Animal Area:**
 - a. **Focus:** Animal care, responsibility, and biology.
 - b. **Learning Activities:** Learners will care for a variety of animals, learn about their needs and behaviour, and explore the role animals play in ecosystems.
 - c. **Example:** Learners will learn how to safely handle animals, clean enclosures, and track animal health.
4. **The Forest Schools Area:**
 - a. **Focus:** Outdoor exploration, teamwork, and environmental science.
 - b. **Learning Activities:** Learners will engage in outdoor activities such as shelter building, outdoor cooking, and wildlife exploration. This space encourages learners to engage with nature in an active and creative way.
 - c. **Example:** Learners will learn how to identify trees, shrubs, and other plant species in the forest, building an understanding of biodiversity.
5. **The Outdoor Classroom:**
 - a. **Focus:** Collaborative learning, reflection, and sharing.

- b. **Learning Activities:** The outdoor classroom is a space for group discussions, project-based learning, and scientific investigations. Learners will present their findings and share ideas with their peers.
- c. **Example:** Learners will use the outdoor classroom to discuss their observations of the pond or share results from their gardening projects.

Through our comprehensive, hands-on science curriculum, students at [Wargrave House School will develop a deeper understanding of the natural world. By engaging with our outdoor learning areas, learners will gain practical, real-world experience that enhances their cognitive, sensory, and social development. We aim to nurture a lifelong interest in science and the environment, empowering students to make informed, responsible decisions about the world around them.

KS1-3 Curriculum

Science Key Stage 1 Standard						
	Animals & Humans		Materials & matter		Plants & ecology	
A G E	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
1	Animals and Human: Ourselves_	Animals and Humans: Our Pets	Everyday Materials: Let's Build	Everyday Materials: Marvellous Materials	Seasonal Changes: Wonderful Weather	Plants: What's Growing in our Garden
2	Animal Life Cycles: Healthy Animals	Living Things and their Habitats: Habitats	Everyday Materials: Materials Matter	Everyday Materials: Squash, bend, twist, stretch	Living things and their habitats: Gardens and Allotments	Plants: Ready, steady, grow

Science Key Stage 2 Standard						
A G E	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
3	Animals and Humans: Keeping Healthy	Rocks: Rocks and Fossils	Forces and Magnets: Amazing Magnets	Light: Light and Shadows	Plants: Roots and Shoots	Plants: Artful flowers, fruits and seeds
4	Animals and Humans: Excuse me are these your teeth?	Living Things: Name that Living Thing	States of Matter: States of Matter Scientists	Electricity: It's Electric	Sound: Listen Up	Living Things: Help our Habitats
5	Animals and Humans: Life Explorers	Living Things: The Art of Living	Forces: May the forces be with you	Materials: Changing Materials	Materials: Festival Materials	Earth and Space: Space!
6	Animals and Humans: Being Human	Animals and Humans: Survival	Working Scientifically: The science of sport	Electricity: Electric Celebrations	Living Things: Classifications	Light: Crime Lab Investigations

Science Key Stage 3-4 Standard						
A G E	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
7	Cells	Reproduction	Acids and Alkalis	Electrical Circuits	Environment and Relationships	The Solar System and Beyond
8	Food and Digestion	Respiration	Magnets and Electromagnets	Light	Rocks and weathering	Ecological Relationships
9	Fit and Healthy	Inheritance and Selection	Gravity and Space	Energy and Electricity	The Rock Cycle	Plants and Photosynthesis

KS4 Curriculum

All KS4 learners, working at Entry level 3 or higher cover an Asdan Science short. These are the module choices for each level:

- Human machine
- Forces and motion
- Chemical change
- Biological challenges
- Space physics
- Performance in sport

Enrichment

To enrich our curriculum, offer further, we have embedded additional opportunities to broaden our learners' Scientific knowledge, experiences, and contacts. We participate in Science week on a yearly basis. Usually within this week there are experiments, zoo lab visits, zoo visits and a focus on the scientific knowledge base linked to each years' themes and focus. We also have a therapy dog, which learners have access to throughout the week, term, and year. In addition to this, learners explore environmental issues through weekly assemblies.

Community learning

We encourage are learners to expand their scientific knowledge through their community contact and access. Therefore, learners visit different venues across the Northwest to learn about new environments and how to respect them, care for them and help maintain them.

Preparation for life

To develop our learners' functional awareness of the world around them, we have developed our own bespoke preparation for life curriculum. This supports the development of specific targets outlined in a learner's EHCP to prepare them for adulthood, including, exploring and looking after ourselves and the environment. This may include the following:

Independent living skills

- Personal care & hygiene

Good health

- Health management
- Healthy lifestyle choices
- Illness & injury
- Mental health

- Physical health
- Sexual health
- Respecting the environment
- Illness & injury

Friends, relationships, community

- Respecting the environment

Capital of culture

We pride ourselves on creating a capital of culture that perpetually grows to broaden the experiences and world views of our learners. As such, we are continually looking at new ways to deliver this. Therefore, we encourage opportunities for learners to care for animals both in the school and local communities. Learners care for all the animals' needs at 'The Puddle' and in class through adopting class pets or through caring for the unhatched chicks that arrive every spring/ summer ready for us to hatch!

Complimentary courses

All learners in KS4, engage in a Btec pre-vocational studies - Entry to vocational studies course at E1-L2 level. Whichever level of course is being accessed, all learners participate in a variety of modules, designed to deepen their understanding of different work sectors and employability skills.

At Entry level 1, the learners can cover the following modules:

Pearson BTEC Entry Level 1 Subsidiary Award in Pre-vocational Study			
Unit reference	Unit title	GLH	Type
	Optional unit		
1	Engaging in New Situations	30	Optional
2	Following Given Instructions	30	Optional
3	Handling Own Money	30	Optional
4	Preparing a Meal for Yourself	30	Optional
5	Going on a Prepared Visit	30	Optional
6	Engaging in Personal Health and Wellbeing	30	Optional
7	Helping with an Event	30	Optional
8	Contributing to a Customer Service	30	Optional
9	Developing Digital Communication Skills	30	Optional
10	Participating in a Performance	30	Optional
11	Communicating with Others	30	Optional
12	Participating in a Sports Activity	30	Optional
13	Producing a Product	30	Optional
14	Taking Part in a Creative Activity	30	Optional
15	Exploring an Enterprise Activity	30	Optional
16	Exploring Future Options in the Local Community	30	Optional
17	Engaging in a Team Activity	30	Optional
18	Working Towards a Given Target	30	Optional
19	Producing a Basic Document	30	Optional
20	Navigating from One Place to Another	30	Optional

At entry level 2, the learners can cover the following modules:

Pearson BTEC Entry Level 2 Subsidiary Award in Pre-vocational Study			
Unit reference	Unit title	GLH	Type
Optional unit			
1	Adapting to New Situations	30	Optional
2	Following Instructions to Carry Out a Task	30	Optional
3	Handling Money Transactions	30	Optional
4	Preparing a Meal for Others	30	Optional
5	Participating in a Visit	30	Optional
6	Understanding Personal Health and Wellbeing	30	Optional
7	Contribute to Running an Event	30	Optional
8	Providing a Customer Service	30	Optional
9	Using Digital Skills	30	Optional
10	Contributing to a Performance	30	Optional
11	Communicating with Others	30	Optional
12	Contribute to a Team Sport Activity	30	Optional
13	Create a Product	30	Optional
14	Being Creative	30	Optional
15	Contribute to an Enterprise Activity	30	Optional
16	Planning for the Future	30	Optional
17	Being Part of the Team	30	Optional
18	Working Towards an Agreed Target	30	Optional
19	Create a Document	30	Optional
20	Using Public Transport	30	Optional

At entry level 3, the learners can cover the following modules:

Pearson BTEC Level Entry 3 Subsidiary Award in Entry to Vocational Study			
Unit reference	Unit title	GLH	Type
Mandatory unit			
1	Skills for Learning	30	Mandatory
Optional units			
3	Finding Out About a Topic	40	Optional
4	Designing a Product	40	Optional
5	Creating a Product	40	Optional
6	Presenting to Others	40	Optional
7	Making an Event a Success	40	Optional
8	Providing Customer Service	40	Optional
9	Going on a Visit	40	Optional
10	Financial Awareness	40	Optional
11	Living with Online Technology	40	Optional
12	Using Technology for a Purpose	40	Optional
13	Supporting Other Individuals	40	Optional
14	Communicating with People	40	Optional
15	Problem Solving by Thinking Creatively	40	Optional
16	Contributing to the Community	40	Optional
17	Managing Time	40	Optional
18	Responding to a Situation	40	Optional
19	Health and Wellbeing for the Workplace	40	Optional
20	Using Guidance	40	Optional

All learners at Level 1 & Level 2 also engage with the Asdan Personal and social development course, which offers the following modules:

Level 1

Unit code	ASDAN code	Unit title	Credit value
M/502/0473	CA1	Community action	2
Y/502/0659	EA1	Environmental awareness	2
H/502/3094	FSC1	Food safety in the home and community	2
K/502/3355	HE1	Healthy eating	2
F/502/0476	HL1	Healthy living	2
M/502/3356	ICD1	Identity and cultural diversity	2
K/502/0472	IRR1	Individual rights and responsibilities	1
K/502/0651	MLT1	Making the most of leisure time	2
R/502/0479	MOM1	Managing own money	2
J/502/0656	PA1	Parenting awareness	2
D/502/0470	MSR1	Managing social relationships	2
J/502/0477	PW1	Preparation for work	2
H/502/3354	YMF1	Your money in the future	2

Level 2

Unit code	ASDAN code	Unit title	Credit value
H/502/3404	CA2	Community action	2
K/502/3405	EA2	Environmental awareness	2
Y/502/4081	FSC2	Food safety in the home and community	2
A/501/3994	HE2	Healthy eating	2
M/601/8829	HL2	Healthy living	3
M/501/3961	ICD2	Identity and cultural diversity	2
M/502/3406	IRR2	Individual rights and responsibilities	1
T/501/3993	MLT2	Making the most of leisure time	2
Y/501/3971	MOM2	Managing own money	2
M/601/8832	PA2	Parenting awareness	3
H/601/8827	MSR2	Managing social relationships	2
T/502/3407	PW2	Preparation for work	2
F/501/3981	YMF2	Your money in the future	2