



Science Policy – Key Stage One and above.

Ratifying Committee	Curriculum & Standards Committee
Date	June 2025
Review	Annually

Rationale

Exploration is at the core of our Science curriculum at The Bridge School. We encourage pupils to explore the world around them, in a way that is purposeful and meaningful to them.

Our science curriculum allows pupils to follow their own natural curiosity, through child-led investigation and experimentation. Pupils have access to a wide range of motivating and engaging multi-sensory activities to facilitate their learning and develop their practical scientific skills.

Within all Science lessons, pupils consistently have opportunities to extend their learning. Practitioners provide differentiated support to promote working scientifically and scaffold pupils' next steps. Pupils are motivated to use their skills, e.g. observing, identifying, and asking scientific questions to find out more.

At The Bridge School, we use bespoke, sequenced, small-step descriptors that outline the key knowledge and skills within science. These descriptors provide an easy to use, aspirational framework that ensures all pupils make progress in what they know, what they can do and what they can remember.

Across all subjects and at all key stages, the overall intent is that the pupil engages, achieves, and makes the most personal progress they can over time to enable them to have the most fulfilling, enjoyable, and independent life possible.

Intent

At all key stages, the overall intent is that each pupil engages, achieves, and makes the most personal progress they can over time to enable them to have the most fulfilling, enjoyable, and independent life possible.

The school has mapped out:

- the intended progression of fundamental key skills and knowledge for pupils working at below pre-key stage standards that are pre-subject specific. School defines this as working at the level of Early Development (ED). The Science planned units of work provide a context/theme for pupils to engage in learning and to achieve pre subject cross-curricular specific skills and knowledge/targeted outcomes linked to EHCP set with parents/carers and from any advice from other professionals.
- the progression/intended sequence of learning of early foundational skills and knowledge including linked key vocabulary and concepts for Science working towards the NC programmes of study (Appendix A), defined as Subject Specific (SS). Subject specific descriptors linked to the following areas of the EYFS Curriculum;
 - Understanding the world
 - Communication and language (Speaking/listening and attention/ understanding.
 - Literacy (Comprehension)
 - Physical development (fine motor)
 - Expressive arts and design (Creating with materials)
 - Personal, social and emotional development (managing self)
 - Maths (Shape, space and measure)

Early Development (ED) and Subject Specific (SS) descriptors are detailed on our online assessment system – Onwards and Upwards, and within the Curriculum Booklet – T:\Bridge\Bridge K Drive\POLICIES & DOCUMENTS\A SCHOOL SUBJECT POLICIES\Curriculum Progression Booklet.

The lead adult may need to break steps down into smaller steps or add or widen.

For each pupil their next step will be based on their assessed previous skills and knowledge rather than for their age or year group- it will be highly personalised. Due to the particular special needs of an individual pupil, some pupils may not have an even profile and steps may be broken down and further personalised. The curriculum provides the opportunity for pupils to access a broad and balanced curriculum at a differentiated level meeting statutory requirements.

The following form the foundation of all delivery:

- engagement and enjoyment
- communication and understanding
- personal and social development including increasing awareness of self, their own emotions and relationships with others.
- independence including life-skill

Progress within the Curriculum

- For our pupils, progression is not necessarily only movement up a ladder of skills and knowledge. Lateral progression is also important in being able to apply the skills and knowledge they have learned e.g. to different contexts, situations, with different people, in different environments.
- Retention of the foundation fundamental learned skills and knowledge to embed into the long-term memory is also important- to know more and remember more. Key targeted areas link to the 12-month outcomes in the annual review set with parents/carers.

Implementation

- Science is taught as specific subject (enabling mixed year classes to support classes with appropriate groupings and friendships) (Appendix B) enabling the lead adult to plan lesson and sequence of lesson to:
 - Support pupil engagement in learning
 - Consolidate existing skills and knowledge to retain them and embed in the long-term memory.
 - Work on the next steps (understanding for some pupils this can be an uneven profile linked to their SEN's) and break steps down further if needed.
 - For some pupils exposing them to the foundations of higher skills as pupils may have particular strengths or motivations and it may lay foundations for later learning.
 - Work on the application of the skills and knowledge e.g. using in a different context, with different materials, with different people or applying within a different task.
 - Work on early underpinning foundational knowledge that build into different types of knowledge (e.g. disciplinary and procedural- see Appendix C)
 - To have varied content to widen engagement and experiences of pupils.

- Science skills can also be consolidated in delivery through other subjects- strong links with Design and Technology skills.
 - The school covers each year Investigating Materials, Plants and Humans/Animals and habitats each year enabling revisiting and repetition. There are units with suggested activities that teachers can add to via the Science Co-ordinator, this supports sharing of best practice and reduces teacher work load. Teachers select based on the intent for each or groups of pupils. There are on-line resources and also physical resources in school.
 - High quality teaching with engagement strategies outlined in Support Plans and EHCP outcomes, communication systems and integration of therapy advice where relevant.
 - Time in a lesson if required to target and consolidate a specific skill, this may include a skill covered in a previous unit that may be learned or mastered with continued repetition but not covered in the current unit.
 - Correct modelling by staff and the addressing of any misconceptions linked to Science.
 - Exciting, motivating, and varied content to support engagement with opportunities taken to enhance cultural capital within curriculum delivery in school and out of school when possible.
 - Time Allocations:
 - There is no specific time allocation given by the DFE
 - Most classes in each key stage have a weekly lesson. For pupils who are working at pre-subject specific levels and pupils in specialist classes, teachers may reduce content and cover reduced units to enable other priority areas including therapy programmes to be implemented.
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- An annual Science week linked to a whole school theme. Throughout many themed days and events Science knowledge and skills are used.
 - There are planned work packs to support remote learning and the Lead adult of the class can provide specific work linked to the pupil and skills as needed.
 - Primary and Secondary phase have a coordinator linked to the Science curriculum. EYFS has a coordinator for the linked area of the EYFS curriculum. The Primary and Secondary phase coordinators alongside the Heads of Phase (who oversee the phase curriculum)- See Appendix D for roles and responsibilities
 - Some pupils may have specific needs that need to be carefully considered and planned for to support their access the Science curriculum, for example, physical disabilities, sensory impairment, or sensory issues such as tactile defensiveness. Through the planning and delivery process the coordinator may need to consider the following:
 - Alternative access e.g. use of software programmes
 - Use of adapted tools
 - Providing opportunities to participate and engage with adult support to ensure pupil has access to any relevant curriculum opportunities based on prior assessment
 - Alternative Science activities to work

Resources

The Subject Co-Ordinator will be able to advise staff on resources in school and where to locate them. This includes on-line resources, unit resource boxes, detailed medium-term planning, shared PowerPoints. Further shared planning and shared resource making is encouraged with the proviso that the teacher is clear for their individual pupils what they want them to learn/next steps and the planned lesson enable this learning to take place. All of these structures reduce teacher workload.

Training of staff

For new staff, there will be some essential initial training priorities e.g., Safeguarding/ Prevent, Fire and Health and Safety, Safer feeding, Safer Positioning, Moving and Handling etc. New staff induction year also prioritises underpinning skills and knowledge e.g., linked to communication and understanding and the school ethos and values. The Lead adult will support new and existing staff in understanding the pupils' work tasks and expected learning/ access for the pupils staff are working with. The Lead adult may provide some wider training on skills and knowledge relevant to the class and pupil. Staff will during their induction period and for staff on an on-going basis have training in subject knowledge. Subject training packs are completed (or in process of being amended) for staff to access. Staff can access with personal work devices. Further training is prioritised through self-review process.

Health and Safety

Staff should work in accordance with the School Health and Safety Policy and risk assessments.

- Lead staff member alongside all staff are responsible for checking that there are no obvious breaches of Health and Safety guidelines.
- Lead staff member will take into account pupils individual risk assessments and their ability level when planning use of tools and equipment. Staff to assess hazards and risks specific to individual pupils' pupil.
- All staff will dynamically risk assess throughout delivery and seek advice or stop if they have concerns.
- Risk assessments in relation to equipment will be followed but with an understanding that the risks for each pupil in relation to pupil's individual profile need to be dynamically risk assessed.
- Visits risk assessments need to be completed and agreed.
- Lead adult needs to ensure that COSSH assessments have been carried out and known for materials use- see Health and Safety Support Assistant
- Electrical item checks should be carried out as per risk assessment. Checks on equipment and environments for safety before use
- Lead adult ensures assessments are compiled and followed for all visits and permission has been granted.
- All health guidelines are followed when handling substances that could be harmful to health.
- Sensory rooms are used appropriately and guidelines followed.
- All pupils are aware of safety issues when using accessing equipment – at a level appropriate to their learning needs and understanding

- All staff understand hazards and risks when using tools and equipment

Impact

The aspiration for all pupils who attend the Bridge School is they achieve their potential in all aspects of their development. All pupils who attend the Bridge School, have severe/ profound learning difficulties. Many pupils have additional needs such as autism, physical disabilities, sensory impairments, complex medical needs etc. We work in a determined way to ensure that all pupils can achieve the most they can.

The outcome of the curriculum is highly individual. All achievement and progress is celebrated. Progress for our pupils can be demonstrated by:

- Pupils making progress towards/achieving their intended outcomes set with parents/carers for 12 months within the EHCP annual meetings. These outcomes are informed by any relevant professionals working with the pupils.
- Pupils making progress towards outcomes when reviewed in 6-month review meetings with parents/carers.
- Pupils making progress/achieving in the Science curriculum planned by teachers either demonstrating pre subject cross curricular skills and knowledge or subject specific skills and knowledge. Progress and achievement in all subjects are within reports to parents in either EHCP (Annual Review) report or annual Curriculum report.
- Achieving external accreditation for secondary aged pupils e.g. OCR accreditation.
- Using existing skills in a wider range of contexts.
- Supported transition within, in and out of the setting.

NB

- *Please note that the intended skills and knowledge are on school tracking documents and may have been updated. If there have been any revisions this will be updated in this policy when it is reviewed annually.*
- This policy is set alongside the Curriculum (Key stage one and above policy), Teaching and Learning Policy, Engagement Policy, Planning Assessment and Reporting Policy (EYFS / Primary / Secondary) and subject curriculum policies.

Appendix A

The Bridge skills and knowledge curriculum leads to the skills and knowledge progression outlined in the National Curriculum below.

Science National Curriculum - Key Stage One (Year 1 and 2 programme of study)

Plants

Pupils should be taught to:

- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
- identify and describe the basic structure of a variety of common flowering plants, including trees
- observe and describe how seeds and bulbs grow into mature plants
- find out and describe how plants need water, light and a suitable temperature to grow and stay healthy

Animals, including humans

Pupils should be taught to:

- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- identify and name a variety of common animals that are carnivores, herbivores and omnivores
- describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)
- identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense
- notice that animals, including humans, have offspring which grow into adults
- find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
- describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene

Living things and their habitats

Pupils should be taught to:

- explore and compare the differences between things that are living, dead, and things that have never been alive
- identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- identify and name a variety of plants and animals in their habitats, including microhabitats
- describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food

Everyday materials

Pupils should be taught to:

- distinguish between an object and the material from which it is made
- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
- describe the simple physical properties of a variety of everyday materials
- compare and group together a variety of everyday materials on the basis of their simple physical properties
- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching

Appendix B

The annual programme of units provides an enriching context for pupils to be engaged, extend their motivation and enjoyment, new experiences whilst working on retention and application of skills and knowledge and also to progress to next steps. It is designed to reduce teacher workload. key remains that when using the units to support delivery the lead adult is clear on the learning in the lesson or series of lessons for each pupil is and that the unit content can be adapted as the priority is the targeted learning for the pupils in the class.

Rolling Programme of Science Units

Theme one	Theme two	Theme 3
Investigating Materials	Plants Investigating Materials	Animals including humans Living things and their habitats Investigating Materials

The themes are visited each year and teachers work is based on what pupils already know, understand and can do – revisiting to remember and retain and also the next steps. The medium-term planning has activities to select from and can be added to by teachers with the co-ordinator updated so that relevant activities can be added to support other teachers to the future.

Appendix C

Different types of knowledge- examples and context of the Bridge School

Substantive knowledge. This is about learning established facts. For pupils with severe and profound learning difficulties this may be pupils understanding core words and concepts linked to

the subject, e.g. identifying materials (including natural), animals and knowing what things need to survive.

Procedural knowledge. This is the understanding of how something is done, the series of steps or actions taken to accomplish a goal. This will be important for pupils with severe and profound learning difficulties in learning how to do something e.g. as a life-skill. This may need to be broken down into small steps building forwards or backwards in a sequence. It may be that a pupil is supporting with step-by-step instructions or visual information, e.g. following symbolised instructions to carry out an experiment.

Disciplinary knowledge. This relates to individual's understanding of subject matter concepts and how these concepts relate to form a larger body of knowledge. This requires an understanding of how substantive knowledge is gained. At the earliest level it may involve, asking relevant questions, setting up simple investigations, predicting/explaining and coming to conclusions, observing carefully, gathering/recording and presenting data in range of ways.

Appendix D

Roles and responsibilities

Science Co-ordinator

- Ensure that the curriculum meets the statutory requirements
- Ensure the rolling programme provides coverage of the key aspects required
- Ensure the planned units are reviewed prior to delivery in relation to the breadth of ability, the special educational needs of pupils in relation to their access to the curriculum, any progression in technology/research and any internal data.
- Review the intended skills and knowledge progression in relation to any changes to the school population, research, advice from professionals and teacher/parent/carer feedback.
- Ensure that they are professionally up to date in their subject area including self-identifying required training opportunities.
- Provide training for teachers and support staff including highlighting any common misconceptions.
- Liaise with the schools ECF coordinator/mentor to provide training and support for newly qualified teachers.
- Liaise with Head of Phase to support new teachers.
- Work with whole school assessment coordinator on internal moderation.
- Work with Heads of Phase on use of curriculum coordinator time to observe practice and carry out deep dives in Science.
- Ensure that the unit delivery is well resourced including online shared resources.
- Complete annual self-evaluation reviews to inform whole school improvement planning.
- Liaise with the EYFS coordinator for the linked area of the curriculum.
- Design and deliver training to parents/carers as part any agreed parent offer.

Teachers

Ensure that they have current subject knowledge to effectively teach their designated group of pupils.

- Ensure that they follow the medium-term planning for Science and liaise with subject coordinators over any content or specific resources.
- Ensure they differentiate the Science curriculum in the units of work and set appropriate unit objectives/lesson targets in line with pupils assessed levels and the intended skills and knowledge.
- Extends unit content/context for their designated group of pupils if necessary and feeds back to the Science Co-ordinator.
- Ensure that Science work in other subjects links to the pupils assessed level of skills and knowledge.
- Ensure that they contact coordinators or Heads of Phase for any specific advice or to ask questions.
- Ensure they assist their support staff in their understanding of the Science curriculum and their subject knowledge.
- Complete assessment, recording and reporting in relation to whole school policy.

HLTA's

If this is the area of curriculum they are planning- work as above in liaison and with support of class teacher.

Support staff:

- Engage with training and self-identify If they require further training, advice and support in relation to the delivery of Science to their designated group of pupils.
- Implement the teacher/HLTA planning and direction and follow the whole school policy on assessment.
- Effectively support the pupils to access the curriculum
- Make accurate observations and feedback on learning to inform next steps. Complete assessment, recording and reporting in relation to whole school policy.

Governors:

- Task the head teacher (via the Science Co-ordinator) to ensure that the curriculum being taught meets statutory standards.
- Review the Science Policy by asking challenging questions to ensure that delivery matches the school's ethos and aims, inclusion for all, progression pathway and assessment shows pupil progress.
- Monitor the Science aspect of the SIP to ensure tasks are completed.