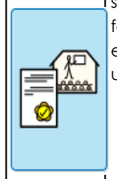
Science Curriculum Rationale

INTENT

National curriculum links

At Castle School, children follow the National Curriculum at an appropriate level. Pre-key stage standards are accessed also. The order of teaching is based upon ensuring the most coherent acquisition of knowledge as well as empowering and inspiring pupils through development of skills linked to their EHCP and ILP targets. Teachers plan systematic repetition of the most crucial content to make sure it can be used functionally across different contexts. Key vocabulary lists are produced by STEM to supplement the National Curriculum ensuring teachers recognise the powerful knowledge and core vocabulary all children must master.

Qualifications



Science is taught as a discrete subject. Scientific and working scientifically skills are consolidated and developed in a semi-formal and formal learning environment. Curriculum targets ensure that learning is meaningful and skills can be functionally used when a learner leaves school.

Sequential Learning

Our curriculum is carefully sequential and follows a termly overview ro ensure scientific concepts are taught at the same time across the whole school. This also informs next steps in learning. Teaching and learning takes place within a range of contexts in order to imrpve scientific aspects of learning across all situations and encironments. Opportunities to consolidate knowledge and undersanding are preset across lessons and from year to year. Through an enquiry based approach, pupils develop their understanding of how the 'small' ideas and details they have previously mastered develope into 'bigger; ideas. This is all part of their learning journey towards an understanding of the 'big ideas' in science.

Pupil Premium

Our approach, reinforced by research from the EEF, prioritises improvements in the quality of education and teaching, including supporting pupils' access to learning. Utilisation of the PPG will benefit wider pupil groupings in school, specifically raising the quality of interventions in supporting best outcomes. We continually monitor the progress and attainment of individual pupils as well as wider cohorts to ensure there is little variation in the performance of different pupil groups.

IMPLEMENTATION

Pedagogical approaches

Retrieval practice which is rooted in cognitive scienve s used at appropriate intervals to ensure key knowledge is consolidated to then build understanding of fundamental and abstract scientific concepts. We adopt a CPA aooroach to science. Lessons follow a starter-main-plenary format in subject specific classrooms. Visual representations are imperative across school and science sees communicational stratefies deploued also; such as colourful semantics and blaks level questioning. Our engagement learners access a learning environment that develops social communication and emotional regulation through targeted transactional support (SCERTS). This enables them in becoming increasingly competent, confident and active participants in social interactions which improves their ability to regulate. Leaners work towards being able toc oper with transitions and actively engage with others. Sience skills are developed consequentially through stimuli on a personal basis: songs, play, sensory input and sensology to develop skills and be able to transfer knowledge to other areas of their learning

Subject Knowledge

Class leads are expected to have good subject and curriculum knowledge. There are CPD opportunities available including lesson observations, courses including online (Reach Out CPD) and moderationto take steps to address gaps in knowledge and skills. There are also regular learning walks which highlight good practice and areas for development. CPD is highlighted as not always a course but by observing good practice around school, regular discussions with other members of staff and classroom based action research projects.

Activities, Expectations & Challenge

Lesson activities are challenging to pupils academically and in regard to their EHCP targets. Personalised learning and individual outcomes are linked to pupil interests ensuring high expectations, appropriate challenge and retention of the content taught as well as the activity itself. Ability grouping ensures pupils are being challenged and planning is sequential over time, to deliver highly engaging and meaningful learning.

Metacognition

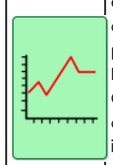
Guided by a focus on metacognition, teachers are intentionally supported to complete enquiries with the goals of gaining insight into teaching and learning, becoming more reflective practitioners and effecting change in the classroom. Through research, teachers have an opportunity to shape their professional development.Investigating their own questions empowers teachers to generate their own knowledge about what works.

IMPACT

Assessment & Progression

Pupils make good progress by accessing appropriate content which is measured using a suitable assessment system. The curricula follow a progression model that identifies the most useful knowledge for cumulative sufficiency. Teachers are aware of previous learning, current learning and future learning. Some pupils (Engagement Pathway) make smaller steps of progress and this is accounted for and monitored through the specific assessment system (MAPP/Cherry Garden for EY/Year 1).

Data



Data is collecetd on a termly basis and is recorded on each pupils' individual pupil progress sheets. Having this data collated on one document allows staff to see the progress and targets all together, for curriculum subjects, ILP/Individual curriculum targets, EHCP categories and Cherry Garden branches. This data is used to determine a child's curriculum, pathway, class and possible interventions. Collecting data over a prolonged period allows staff to set appropriate targets for the next school year.

Interventions

Ongoing assessment identifies pupils that require further support. If children do not meet their attainment target then staff have to fill out triangulation sheets. Staff must state what the high-level indicator was from their data collection before undertaking a deep dive of that pupil's provision. Then they must state the impact of that process and what they want the outcome to be for that pupil. The intervention lead will then assign an appropriate intervention and discuss with with the class team.

Recording Work

Evidence of teaching, learning and progress is specific to each pathway in school. The engagement pathway will consist of more observations and detailed, factual recollections of the learning taking place. Practical lessons are recorded via photographs and videos and these can be uploaded on to Tapestry with comments and next steps evident. When maths is taught as a discrete subject there will be a mix of written evidence and practical-based learning.

Cultural Capital		Integrated Therapies	
	Cultural Capital is the essential knowledge that children need to prepare them for their future success. Our aim is to give children the knowledge and skills to prepare them for what comes next in their lives. This includes the relevant communication skills and vocabulary needed throughout their education and the opportunity to link science to real-world understanding. With our firm belief that scientificl knowledge and working scientifically skills are transferable, our pupils are given every opportunity to participate in a wide range of learning experiences beyond their classroom.		There is a strong collaboration between therapy leads and teachers in planning enabling environments for all pupils. This includes the integrated planning of activities that develop communication, gross and fine motor skills as well as working scientifically skills. The OT works closely with teachers to develop pre-writing and handwriting skills through multi-sensory and carefully graded approaches. There is also a strong focus towards developing access to information and communication technology (ICT) to eradicate motor skills as a barrier to learning.