



Knowledge and skills: Introduction

At Polehampton, we first considered the concept of knowing more, doing more and remembering more. Therefore, from our research, we have a shared and consistent understanding of different types of knowledge. Each subject will have a different ratio of distribution for these types of knowledge, and the types of knowledge can (and most often do) intersect.

1. Knowledge refers to the body of facts, information, understanding, principles and concepts etc. of a subject. In other words, this could be referred to as the main component knowledge that pupils might learn (e.g. how a pulley works or the knowledge of different materials and their properties), as well as the understanding that pupils may develop about how those facts were established (aka disciplinary knowledge). Finally, as well as considering how a fact was established, we may also consider its degree of certainty and how it continues to be revised. Pupils need to know information in some form in every subject, even in practical subjects, because there will be an element of theory behind the skill that can be shown/displayed.

2. Skills refers to the techniques required to complete a procedure or task. It is the 'know how' of the processes required in a subject (e.g. the actual skill of being able to thread a needle and sew using a cross-stitch). Skills are often incremental and require regular practice. It is about being able to know how to actually demonstrate that skill or procedure.



Polehampton's Infographic on Knowledge and Skills

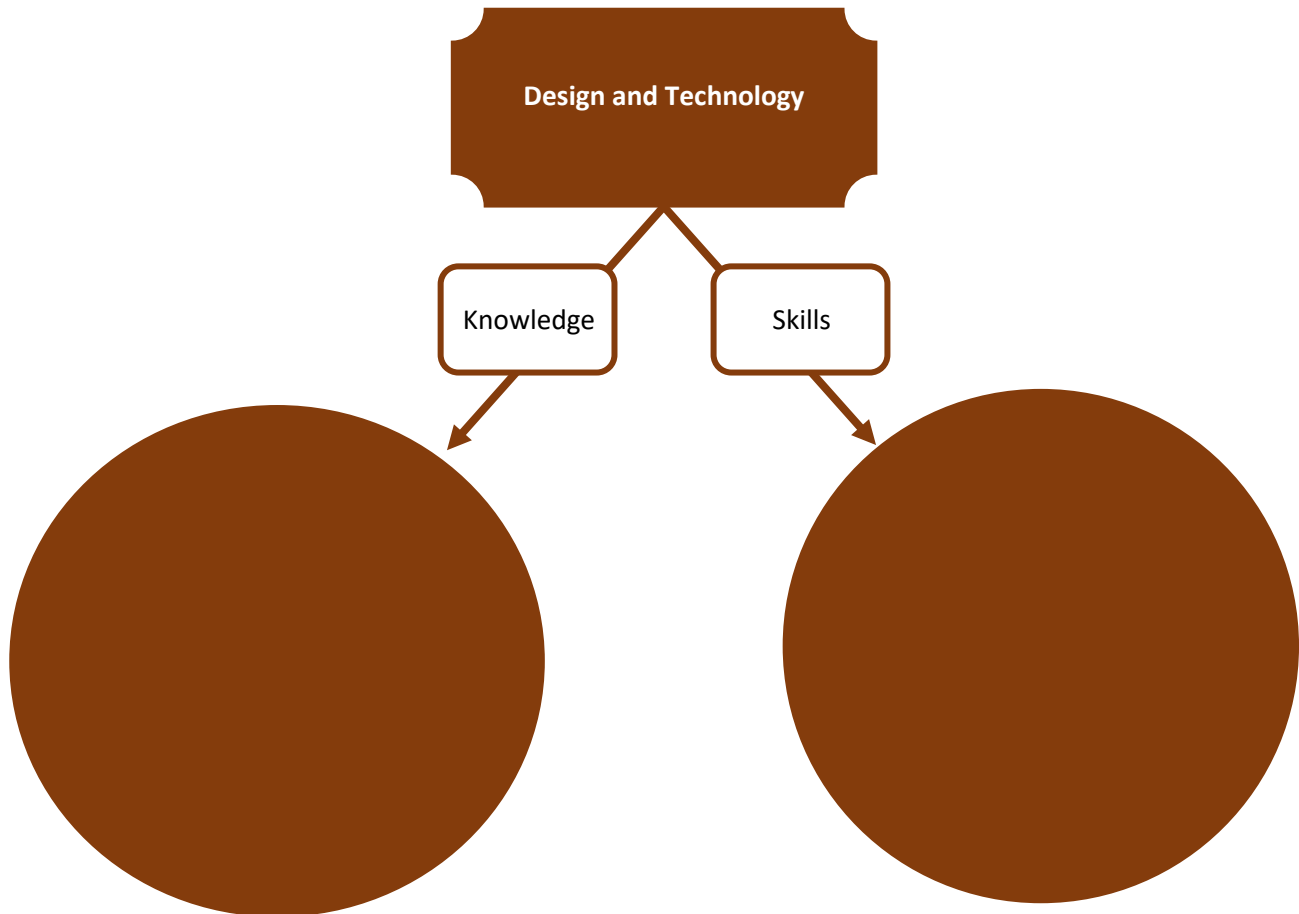
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Knowledge distribution

We recognise that different subjects have different weightings of knowledge and skills. The infographic below highlights what we consider to be the ratio of each form of knowledge within this subject:



Our vision

Design and Technology at Polehampton provides pupils with the opportunity to participate in a range of different activities where they develop a variety of practical skills. Our vision for Design and Technology is for pupils to develop the theory and practical skills necessary to build strong foundations for success in the future as critical thinkers, developers, designers and makers. By learning core skills in researching others' work, designing their own products, learning the skills to create these products and evaluating the success of their work, pupils will embed core skills that will help them not just in Design and Technology, but across their academic and working lives and will enable them to contribute positively and effectively to society. Design and Technology is taught as a discrete subject however, at all stages, there is an emphasis on linking Design and Technology with other subjects, where possible and appropriate.

Early Years Foundation Stage

In the Early Years Foundation Stage (EYFS), the foundations for Design and Technology (DT) are developed through hands-on exploration, creativity and problem-solving. Children learn how to generate ideas, plan and create with increasing independence, using a variety of tools and materials including scissors and cutlery. Through practical experiences, they develop key skills in cutting, joining and manipulating materials, building confidence in their ability to construct and design. Through the EYFS, children develop knowledge and skills across seven areas of learning, which

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Polehampton CE Infant and Junior Schools

Curriculum Vision: Design and Technology V1



include Physical Development, Expressive Arts and Design, Understanding the World, and Communication and Language – all of which provide strong foundations for Design and Technology (DT) in the National Curriculum:

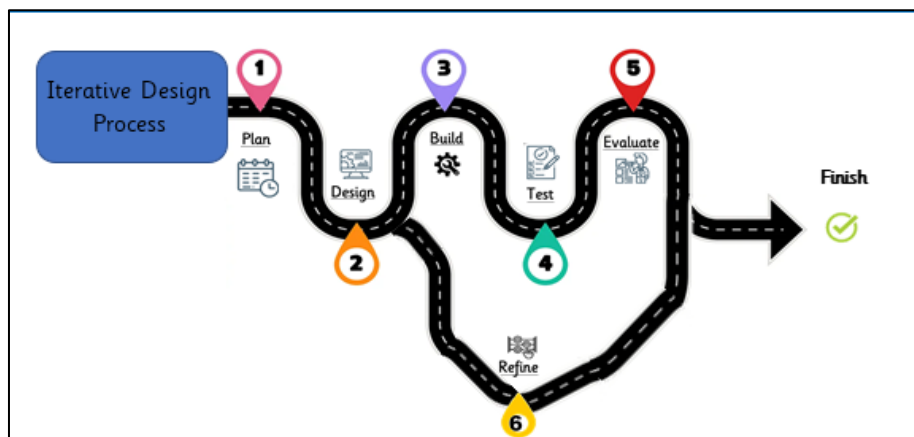
- Physical Development supports fine motor skills needed for cutting, threading, and assembling materials, as seen in activities such as threading wool through a single hole punch to create a flower.
- Expressive Arts and Design encourages creativity and problem-solving allowing children to explore different textures, structures, and materials particularly through junk modelling.
- Understanding the World fosters curiosity about how things work, linking to designing, making, evaluating products and introduces concepts such as food preparation and healthy eating, such as in Cooking and Nutrition, where the children create pumpkin soup.
- Communication and Language is essential for articulating ideas, discussing processes, and evaluating outcomes.

This aligns with the Early Learning Goals, as children develop fine motor control and coordination when handling tools such as scissors, hole punches, and cooking utensils. Through expressive arts and design, they explore materials safely, experiment with construction techniques, and use their creativity to bring ideas to life. Understanding the world is embedded in their learning as they discover where food comes from and make informed choices about healthy eating. Additionally, communication and language are key, as children express their ideas, explain processes, and reflect on their creations, developing confidence in speaking and sharing their thoughts.

These early experiences align with the DT National Curriculum, where pupils build on these foundations through structured design, making and evaluation tasks using various materials and techniques. EYFS provides exploratory, play-based learning, while the National Curriculum formalises these skills into a structured approach to problem-solving and product design.

Key Stage 1

In Key Stage 1 (KS1), the DT curriculum focuses on developing pupils' creativity, technical knowledge, and practical skills through structured projects. Pupils will learn about the iterative design process, and learn to design, make and evaluate products with a clear purpose, developing problem-solving abilities and resilience. They explore a range of materials, including construction materials, textiles and food. They will utilise research and planning, learning the skills to suit their unit and putting those skills into action when making a product. They will review their products and use peer and teacher evaluation to suggest improvements. With adult support, pupils have the opportunity to use a range of cooking utensils, sew in small groups and begin develop discipline-specific skills. A key element is cooking and nutrition, where children learn about healthy eating, basic food preparation and the importance of a varied diet. Through these activities, they develop essential skills in planning, collaboration and iterative thinking, laying the groundwork for more complex DT learning in Key Stage 2.



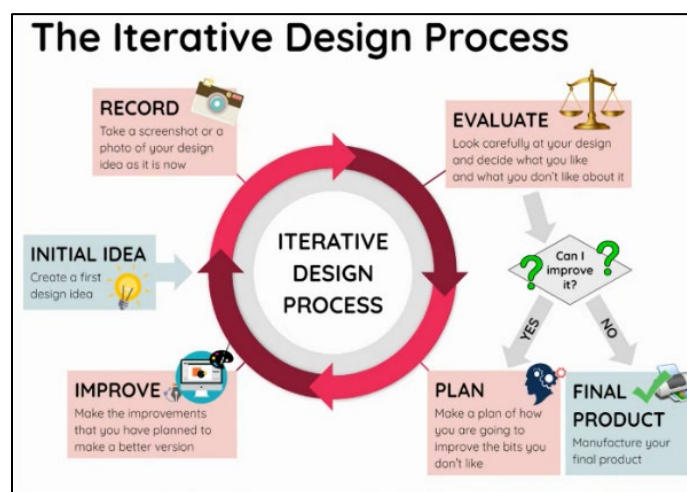
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Key Stage 2

In Key Stage 2 (KS2), the DT curriculum builds on the foundations from Key Stage 1, developing pupils' skills in designing, making, evaluating and applying technical knowledge. This will enable them to be more detailed, accurate and competent in every part of iterative design process. Pupils will design increasingly complex and challenging products, including using pulleys, pneumatics and electrical circuits. They will have the opportunity to use a greater range of cooking methods and tools including saws, drills, glue guns and finishing methods to produce aesthetically pleasing final products. Cooking and nutrition continue to be a key focus, with pupils learning about seasonality, food sourcing, and preparing a wider range of dishes using appropriate tools and techniques. Pupils are then encouraged to build on the technical skills acquired in previous units (as well as Science and Computing) and apply these with increasing independence. Throughout Key Stage 2, pupils engage in iterative design, testing and improving their products, developing problem-solving skills, resilience, and creativity in preparation for more advanced study in Key Stage 3.



The curriculum

At Polehampton, we follow the National Curriculum for all our subjects. However, we have chosen Kapow to match our ambitions for the subject. To ensure the National Curriculum is covered effectively, there is an edited version of the National Curriculum which has notes to highlight where in our Milestones a statement or section is covered within our strategic documents and planning.

Schemes of work

In Design and Technology, we use a scheme called Kapow to support the subject in Years 1 to 6. We have also reviewed the Kapow progression of knowledge and skills documents to ensure that this strategic planning is appropriate for our school community and links with our curriculum vision (and the National Curriculum).

Curriculum structure

Design and Technology is blocked and taught during one half term of a full term. This ensures that three units are taught in each year group, covering a range of knowledge and skills and where possible, cross curricular links are made. Years 5 and 6 have an extra unit, centred around 'Digital World'. We will encourage children to use the evaluation process as a time of reflection considering both the positive and negative elements of their project and using this to improve their future projects. We believe Cooking and Nutrition to be invaluable in the knowledge and build-up of practical skills, which will build foundations for life-long healthy relationships with food. For this reason, every class will have the opportunity to cook and prepare a range of foods. We use retrieval practice, knowledge organisers and

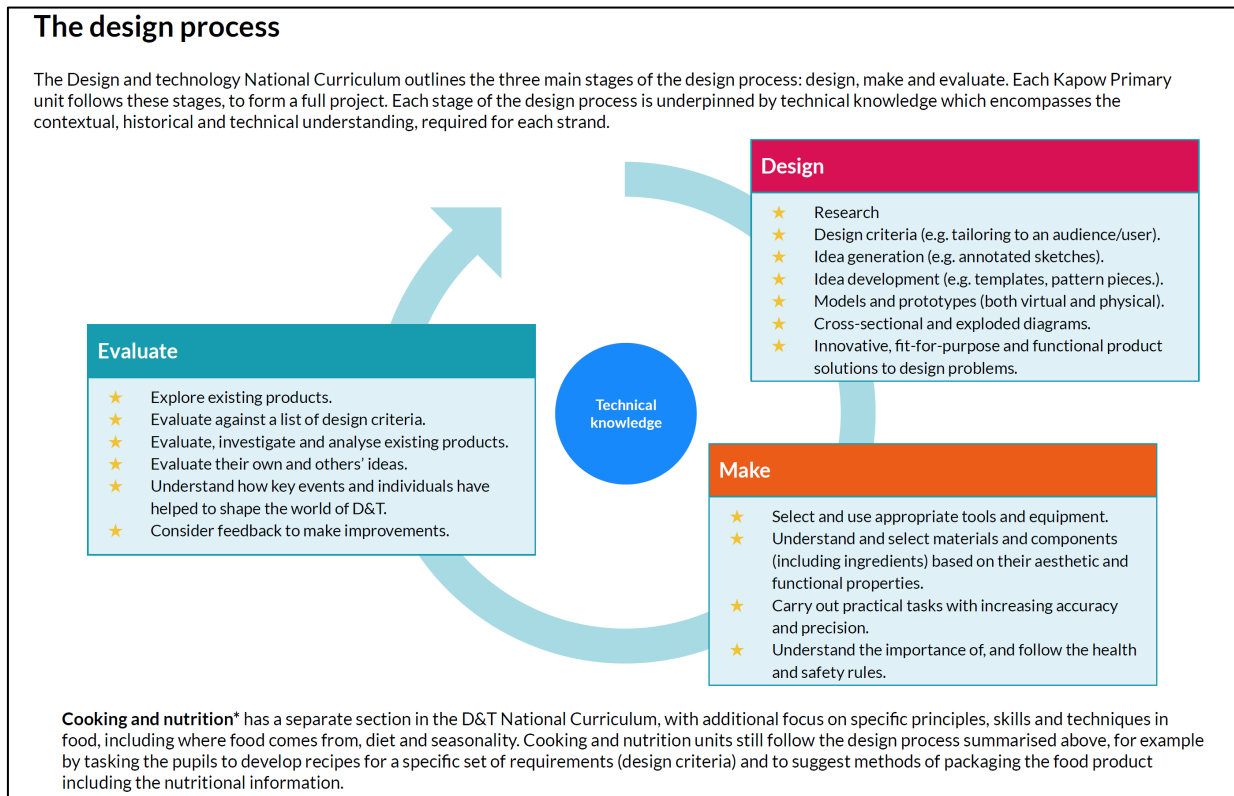
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other methods to ensure that pupils are prepared for their subject and focus on the right objectives during lessons. Subject-specific vocabulary is taught and we aim to deepen understanding through questioning.

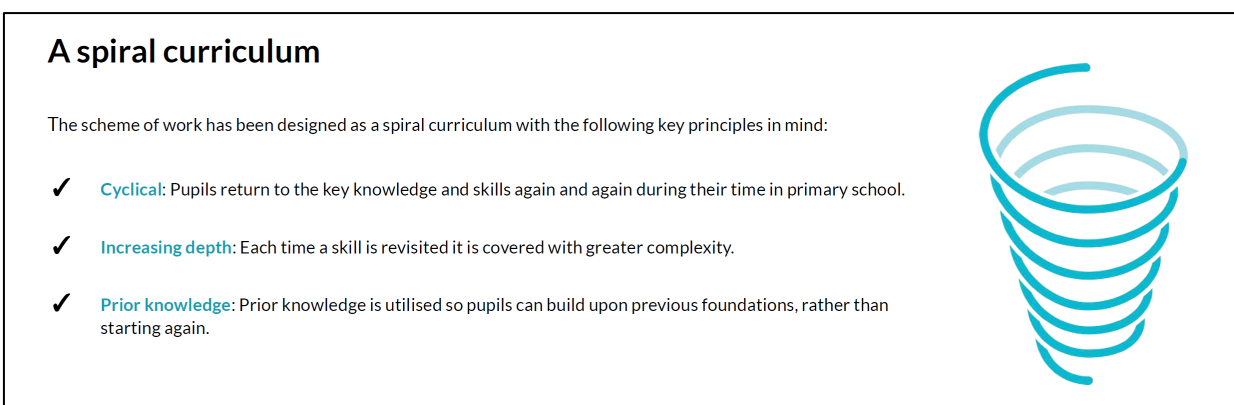
As well as the prior information on the Iterative Process, Kapow's 'Design, Make and Evaluate' process is considered:



Taken from Kapow's LTP document

Building on and revisiting learning

Our units rely on a 'spiral curriculum' model, which ensure we can revisit concepts and cumulatively build knowledge and skills.



Taken from Kapow's LTP document

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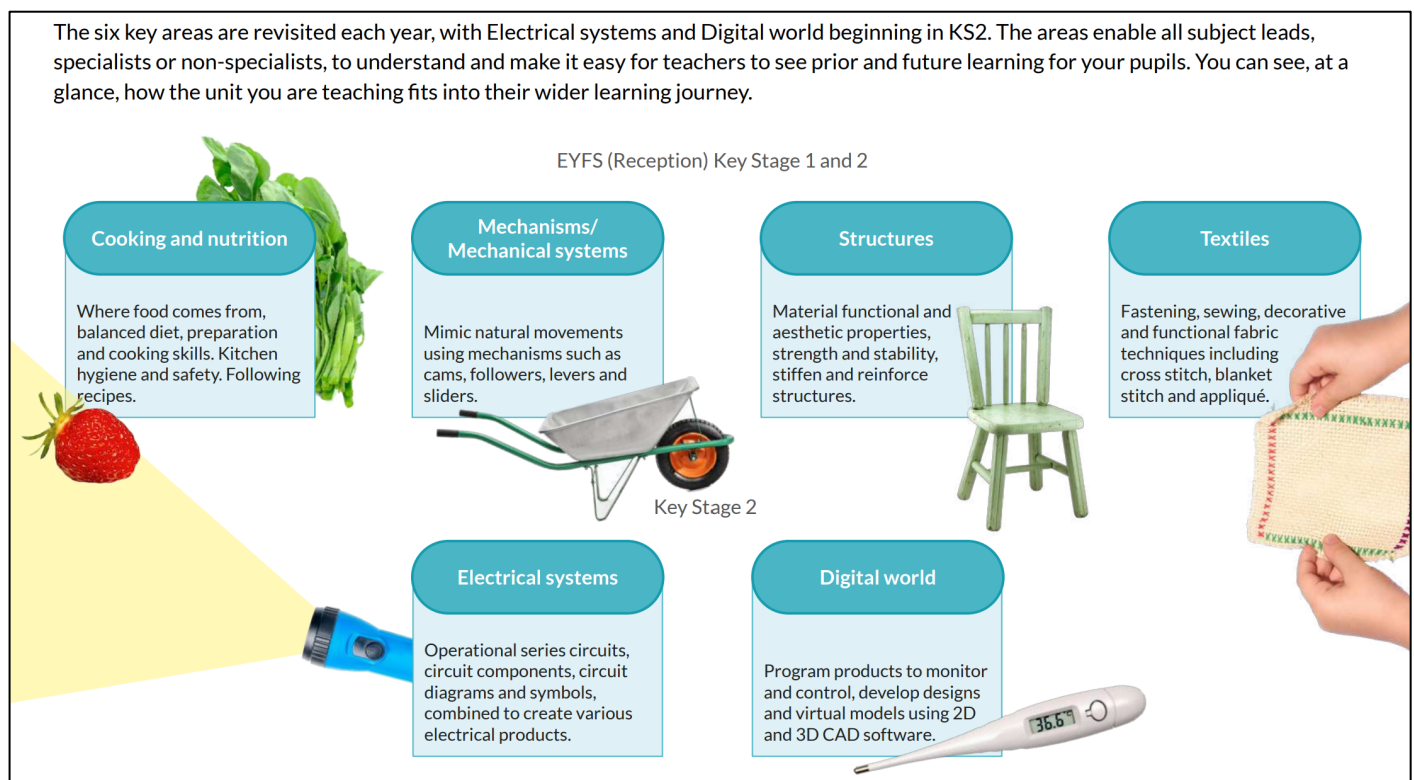


Concepts

Across all subjects, core concepts are woven through each unit and year group, ensuring consistent focus and progressive development from foundational to advanced understanding. Our Design and Technology key concepts are as follows:

Appraisal and Knowledge of Others' Work	Developing Ideas and Planning	Making and Producing	Evaluating and Improving
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Kapow expands on these concepts, which Kapow refers to as 'key areas'. Any National Curriculum objectives or expectations are still covered throughout our units and other Concepts.



Taken from Kapow's LTP document

How we plan our units

We have chosen to use the Kapow scheme because it offers engaging, curriculum-aligned resources that foster a development of curiosity, skill development and critical thinking in pupils.

Prior to beginning a unit, class teachers will review all the documentation mentioned in this vision document as well as the lesson plans and online resources, in order to understand the direction of the units and lessons. It also ensures that teachers have time to address any subject knowledge gaps they have themselves, or seek support. As part of this professional development support, teachers use the teacher knowledge videos that are provided within the Kapow units to enrich and refine subject knowledge ahead of lessons.

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Because of the comprehensive nature of the planning on Kapow, teachers are not expected to produce individual written plans for each lesson. However, teachers are expected to ensure that the teaching resources produced for the lesson are comprehensive and well-planned, as well as being adapted where necessary to suit the needs of the cohort.

This could take the form of the following:

- Using the pre-prepared presentations on Kapow (extra slides can be added to the deck if needed).
- If teachers prefer, they can create their own PowerPoint, ensuring the key information from the Kapow lesson is covered and add any additional slides they feel are necessary.

The most important aspect for us, as a school, is ensuring that teachers feel prepared to (and, therefore, deliver) high-quality lessons to pupils which support our vision of developing knowledge and skills over time. It also enables teachers to consider how these lessons will fit in to the wider picture of a child's learning journey.

Vocabulary development and knowledge organisers

As part of our focus on oracy, we utilise Kapow's unit plans, which outline the key vocabulary for that lesson or unit, which allows progression in vocabulary development over each unit and year.

A knowledge organiser, in line with our school's format, is shared with pupils from the beginning of the unit and referred to throughout lessons to help embed key concepts and vocabulary.

Cross curricular links

It is important to understand how subjects can work with each other, so there are specific links to other subjects where relevant. However, it is important to note that this does not detract from the focus we have on teaching each unit as part of a discrete subject.

Milestones and assessment opportunities

When assessing progress, we use a range of methods, including the use of Kapow's formative and summative assessment opportunities.

Formative assessment

To begin each lesson, teachers employ targeted retrieval practice through a 'recap and recall' section. This allows for a swift assessment of prior learning, highlighting any gaps that need addressing. Throughout the lesson, ongoing formative assessment strategies are key. Teachers utilise a range of methods, including effective questioning, observation, peer and self-assessment, oracy, and presentations, to inform real-time adjustments to instruction. Specific assessment for learning (AfL) strategies, such as providing descriptive feedback and establishing clear learning intentions, are consistently implemented and help teachers track where each child is at. These assessments not only shape immediate instruction but also inform future planning. Unit-level assessments, coupled with integrated retrieval practice, serve to consolidate learning and reinforce essential vocabulary. Ultimately, this continuous assessment cycle ensures responsive and effective teaching, tailored to the needs of each learner.

Summative assessment

Within Kapow, each unit of work assesses children's understanding and retention of key knowledge using an assessment quiz with multiple choice questions and one open-ended question. These assessment quizzes offer teachers valuable summative records, serving as evidence of pupil progression throughout the year and as they transition between key stages. In addition, each unit uses a knowledge catcher. This can be used at the beginning and/or end of a unit, and gives children the opportunity to further demonstrate their understanding of the key concepts covered.

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Milestones and assessment opportunities

Clear progression and effective assessment are achieved through our milestone objectives and targeted assessment opportunities within each unit. Teachers are guided by these milestones, which are derived from the National Curriculum and cross-referenced with Kapow's progression framework, to ensure pupils develop the necessary knowledge and skills for success.

Measuring impact

We measure the effectiveness of our curriculum in the following ways:

- Pupil data tracking (Sonar and other internal tracking methods)
- Work scrutiny
- Monitoring of lessons and planning (including from SLT, governors and external validation, e.g. TKAT)
- Pupil conferencing.

When evaluating our curriculum, we also ask ourselves the following questions:

Do we provide a high-quality curriculum and inspires pupils?

- To what extent do our children show independence, resilience and high aspirations in the subject?
- To what extent does our curriculum provide new experiences and challenges?
- To what extent do the children engage with high quality resources?

Do we ensure pupils know more, do more and remember more?

- To what extent do children retain the knowledge learnt?
- To what extent does the curriculum build over time?
- To what extent do children make progress against milestones over time?

Does our curriculum allow oracy development and the opportunity for pupils to collaborate?

- To what extent does our curriculum use/teach high quality language?
- To what extent does the curriculum provide opportunities to work collaboratively?
- To what extent does the curriculum support children with oracy skills?

Is our curriculum inclusive?

- How well is learning broken down, explained and scaffolded/adapted appropriately in the subject?
- How well are assessment forms used to inform planning in the subject?
- To what extent does the curriculum meet the needs of all learners including SEND/ EAL etc?

Do we help our pupils become better people in the wider world and prepare them for life in Modern Britain?

- To what extent does the curriculum allow children to take responsibility for their learning?
- To what extent does our curriculum allow for diversity?
- To what extent does the curriculum offer opportunities to present work in creative ways?
- To what extent does the curriculum offer opportunities to discuss content and/or questions and consider them in an open forum?
- To what extent does offer opportunities to utilise the skills of the wider community?

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