Design and Technology

STRATHMORE INFANT AND NURSERY SCHOOL

Our Vision and Values

Be kind

Be safe

Be respectful

As members of the Strathmore family, our children will grow intellectually and emotionally in a supportive and stimulating environment.
We foster a lifelong love of learning that is attentive to our students' needs and interests.
Our well-rounded curriculum promotes critical thinking, perseverance, and health and wellbeing. They learn to value themselves, others and the world we live in.
Children are at the heart of our vision.

Nurturing Brilliant, Resilient Minds

Our Curriculum Intent

- Provide our children with opportunities to explore and evaluate a variety of existing products and gain knowledge and skills that will enable them to design and produce purposeful, functional and appealing products for themselves and others.
- We want to instill a confidence within our children that will allow them to express, develop and communicate their ideas in an imaginative and unique way.
- Provide them with the skills necessary to participate meaningfully in an increasingly technological world.
- The children should be explicitly taught how to investigate what makes a successful product and implement their findings into their own success criteria and eventual finished outcome.

Design and Technology in the National Curriculum

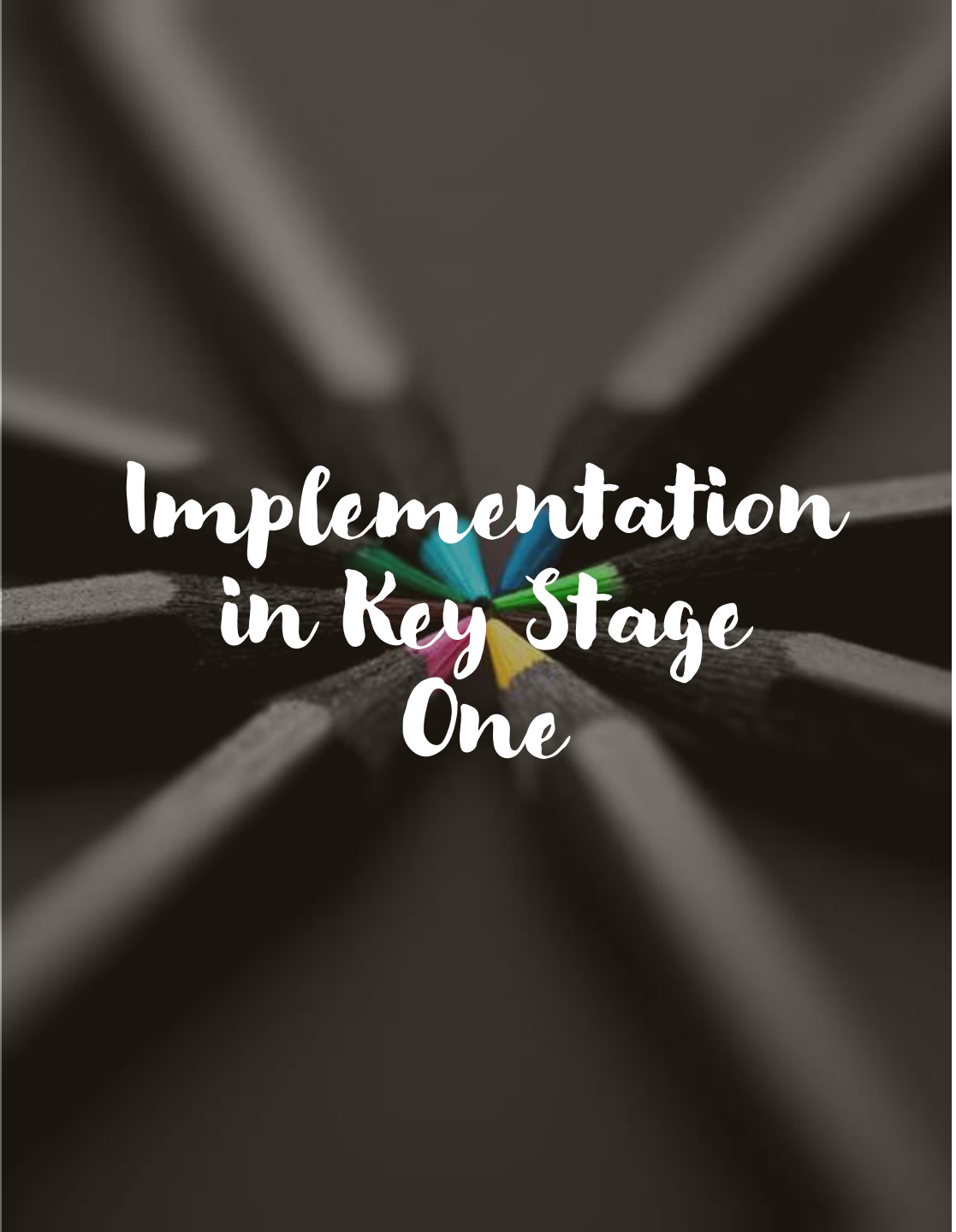
Implementation in the Early Years

Design and Technology falls into the Expressive Art and Design aspect of the updated Early Years Framework. Through the use of our Cornerstones Curriculum, we have adapted a variety of topics to support the Big Ideas that are introduced in the Early Years.

We encourage our children to explore and create imaginative, creative and unique products in order to foster an interest and confidence in this area of the curriculum and their development.

Through adult directed and child led learning, we encourage our children to investigate and experience the world around them, developing their own ideas and making links between their learning.

Our children are taught how to use a variety of basic equipment in a safe way whilst still enabling them to use creativity and experiment with design, texture and function.



Implementation in Key Stage One

Our focus on safety continues in Key Stage One where our children are introduced to a range of complex materials, techniques and equipment. We explicitly teach our children to utilise their skills to design, make and evaluate products by considering a specific design criteria.

Our children learn about a range of diverse craft makers, engineers and designers and are encouraged to describe the similarities and differences between them and their work. They are then able to make links to their own work.

We introduce our children to the basic principles of a healthy and varied diet in order to prepare dishes and understand where food comes from.

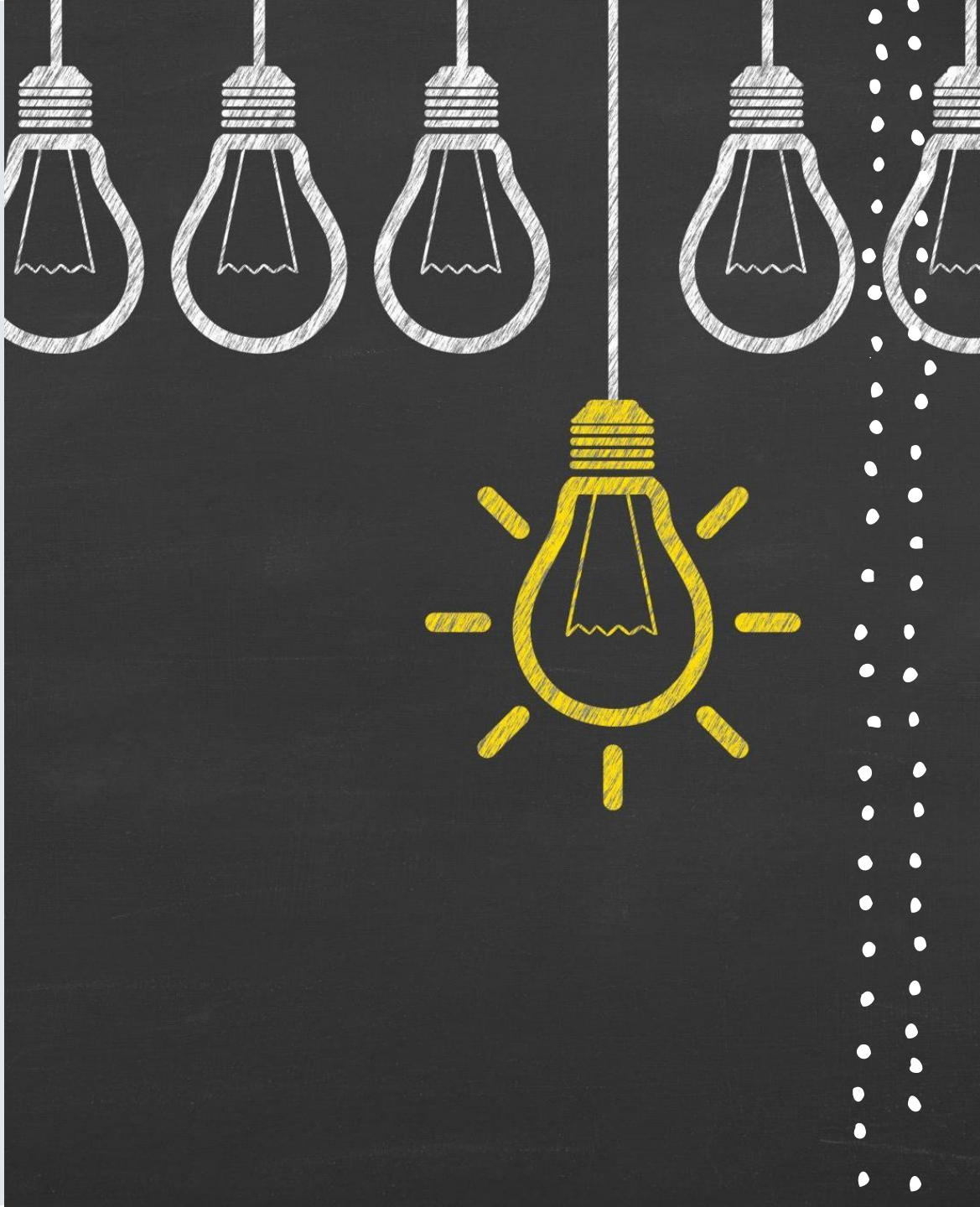
Every child across Key Stage One is provided with a sketchbook which travels throughout the school with them. Our vision is that the children are instilled with a sense of pride and ownership over their learning and their sketchbook will act as a showcase of their development and achievements. The sketchbooks provide an opportunity for the children to record their ideas, thought processes, evaluations and experimentation and demonstrate who they are as people through their creativity and individuality.

Inclusive Learning

From the Early Years to Key Stage One, our Design and Technology lessons, both formal and child led, incorporate a range of teaching strategies including independent tasks, paired and group work. Every lesson and activity is engaging and appeals to all learning styles.

The combination of practical and formal lessons allow our children to focus on evaluating their work once they have completed their finished product.

Our teachers are confident to adapt and differentiate each lesson based on the needs and requirements of their class. This enables all children to access the objective for the lesson and have their learning stretched where appropriate.



Inclusive Learning

Our children have access to a wide variety of resources so that they can achieve the learning objective in a way that is accessible to their needs.

Our children have access to technology as an alternative method of producing a formal piece of work supporting the writing process. Eg. Evaluating at the end of a topic.

The use of technology is also used as an alternative method to planning and designing a final outcome.

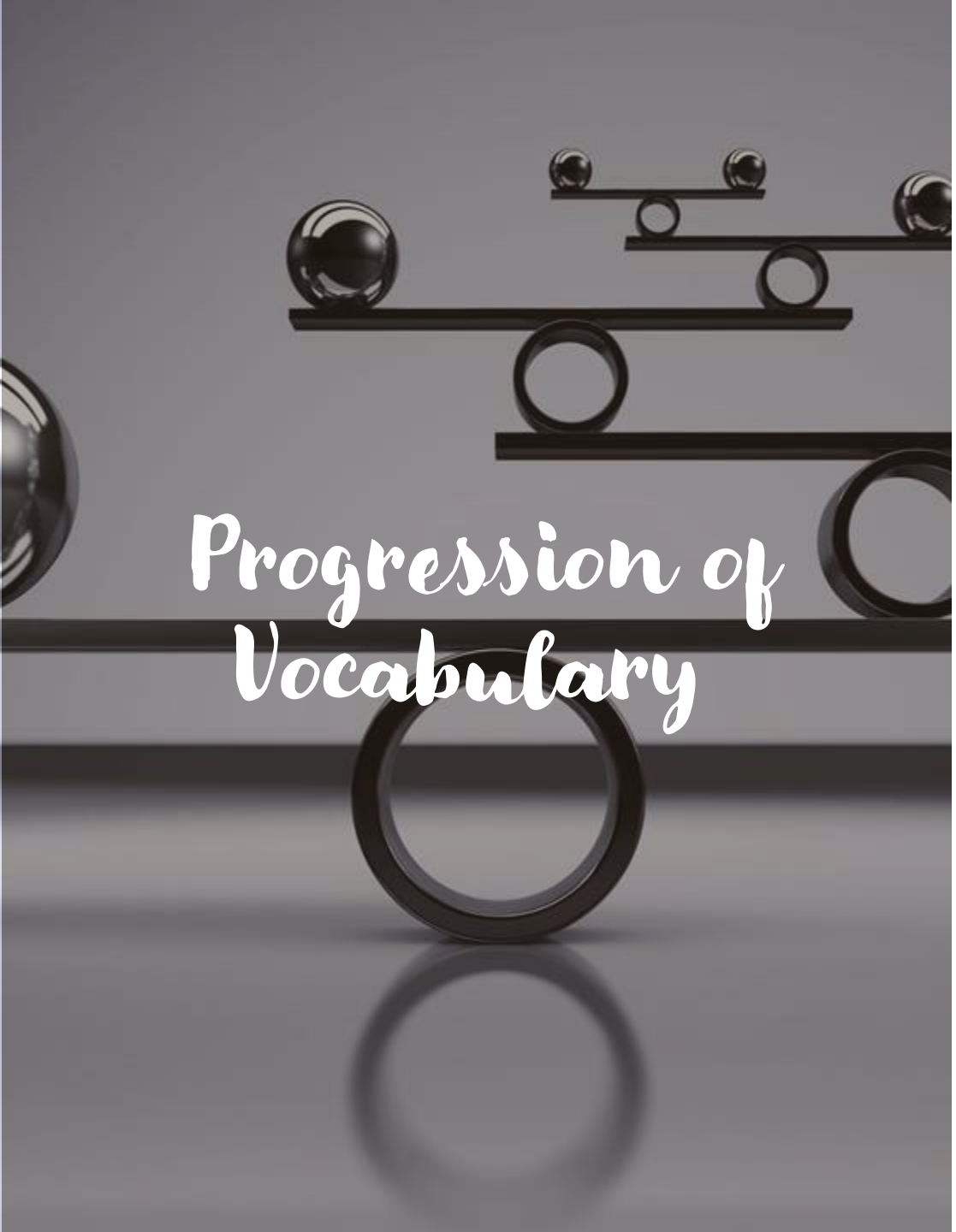
Our children with fine and gross motor challenges can be provided with assistance when holding equipment.

Our teachers are confident to adjust the expectations of an activity by creating a 'parallel activity' for children who may require an adapted learning objective. This is shown through the teacher's weekly planning.

Progression of Vocabulary

EYFS

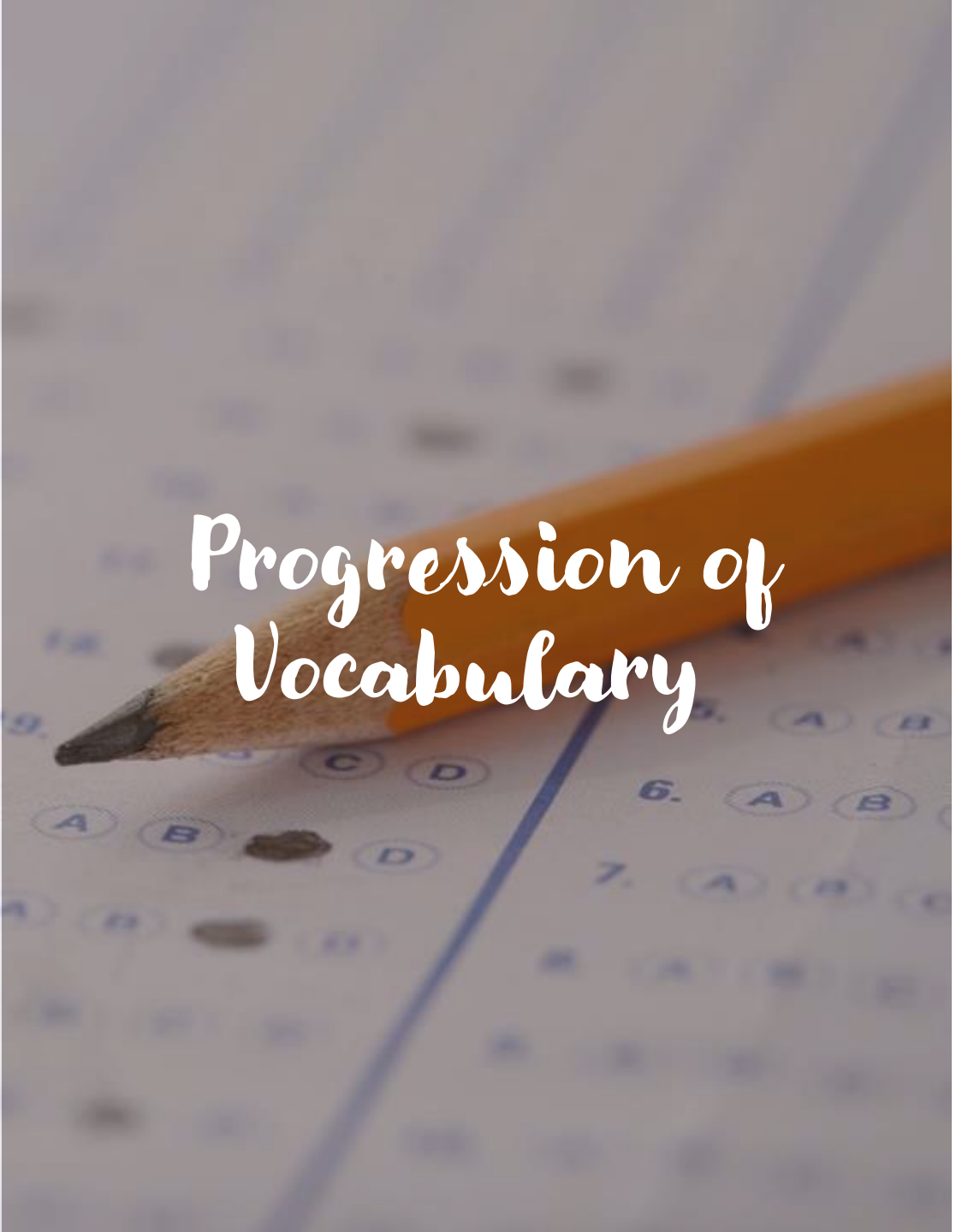
- Investigate
- Make
- Cutting
- Joining
- Observe
- Imagine



Progression of Vocabulary

Year One

- Design
- Properties of Materials
- Mechanism – Wheels, Axis, Chassis
- Sources of food
- Preparation
- Techniques
- Design Criteria
- Evaluate



Progression of Vocabulary

Year Two

- Structure
- Strengthening
- Scoring
- Enhance
- Hygiene

Progression of Skills

Year 1	Year 2
Skill Name and explore a range of everyday products and describe how they are used. Covered x 2	Skill Explain how an everyday product could be improved. Covered x 2
Skill Follow the rules to keep safe during a practical task. Covered x 2	Skill Work safely and hygienically in construction and cooking activities. Covered
Skill Use wheels and axles to make a simple moving model. Covered x 2	Skill Use a range of mechanisms (levers, sliders, wheels and axles) in models or products. Covered x 4
Skill Identify products that use electricity to make them work and describe how to switch them on and off.	Skill Create an operational, simple series circuit.

Year 1	Year 2
Skill Talk about their own and each other's work, identifying strengths or weaknesses and offering support. Covered x 3	Skill Explain how closely their finished products meet their design criteria and say what they could do better in the future. Covered x 4
Skill Cut and join textiles using glue and simple stitches.	Skill Use different methods of joining fabrics, including glue and running stitch. Covered
Skill Select and use a range of materials, beginning to explain their choices. Covered x 2	Skill Choose appropriate components and materials and suggest ways of manipulating them to achieve the desired effect. Covered x 5
Skill Use gluing, stapling or tying to decorate fabric, including buttons and sequins.	Skill Add simple decorative embellishments, such as buttons, prints, sequins and appliqué.

Year 1	
Skill Create a design to meet simple design criteria. Covered x 4	Skill Generate and communicate their ideas through a range of different methods. Covered x 3
Skill Construct simple structures, models or other products using a range of materials. Covered x 10	Skill Explore how a structure can be made stronger, stiffer and more stable. Covered x 3
Skill Use design software to create a simple plan for a design.	Skill Use design software to create a simple labelled design or plan.
Skill Select the appropriate tool for a simple practical task.	Skill Select the appropriate tool for a task and explain their choice.

Our Journey through Design and Technology: Core Skill Tracking

Processes: Mechanisms and Movement	In the EYFS our children are encouraged to explore, build and play with a range of resources and construction kits with wheels and axels.	In Year One we teach our children to use axels and wheels to make a simple moving model.	In Year Two our children can use a range of mechanisms (levers, sliders, wheels and axels) in models or products.

Progression of Knowledge

Year 1	Year 2
Core knowledge • An axle is a rod that is connected to the centre of a wheel, which allows it to turn. • A chassis is the frame of a vehicle. • A shelter is a structure designed to give protection from weather or danger. Covered x 2	Core knowledge • There are many home products made from fabric. • Examples of fabric based products in the home include cushions, curtains, blinds and carpets. • Products can be improved in different ways, such as making them easier to use, more hardwearing or more attractive. Covered x 2
Core knowledge • Rules are made to keep people safe from danger. • Safety rules include always listening carefully, following instructions and using equipment only when told to. Covered x 2	Core knowledge • Hygiene rules include washing hands before handling food, cleaning surfaces, tying long hair back, storing food appropriately and wiping up spills. Covered
Core knowledge	Core knowledge

Year 1	Year 2
• Most vehicles that move on land have axles and wheels that are fixed to a chassis. • An axle fixed to a chassis has freely moving wheels. • A freely moving axle has fixed wheels. Covered x 2	• People build machines to make their work easier. • A machine is made up of different parts that all work together to perform a task. • Individual parts of a machine are called components. • The part of a machine that brings about movement is called the mechanism. • A slider mechanism moves in a straight line. • Real-life examples of slider mechanisms include door bolts and drawers. • A lever mechanism is a bar that moves around a fixed point called a pivot. • Real-life uses of levers include scissors and seesaws. • A linkage mechanism combines levers and sliders.

Year 1	Year 2
Covered x 3	Covered x 4
Broad knowledge Scissors are used to cut fabrics. Glue and simple stitches, such as running stitch, can be used to join fabrics. Running stitch is made by passing a needle in and out of fabric at an even distance.	Core knowledge • A running stitch is a basic stitch used to join two pieces of fabric. Covered
Broad knowledge Different materials are suitable for different purposes, depending on their specific properties. For example, glass is transparent, so it is suitable to be used for windows. Covered x 2	Core knowledge • Properties of components and materials determine how they can and cannot be used. Covered x 5
Broad knowledge Fabric can be decorated using materials and small objects, such as buttons and sequins. Decorations can be attached to the fabric by gluing, stapling or tying.	Core knowledge • Embellishment is a decorative detail or feature added to something to make it more attractive. Covered

Enrichment Opportunities

We aim to provide our children with the experience of observing products first-hand through educational visits and workshops from local designers, engineers and makers.

Every year our school holds a STEM Week – an opportunity for our children to become emersed in the world of Science, Technology, Engineering and Mathematics.

We also hold Christmas Decorations Day - a whole school event where our children have the opportunity to create, make and construct Christmas decorations.

Subject Impact

As a result of our curriculum, our children become confident designers who understand the value and importance of expressing themselves in a unique and individual manner.

The children possess the understanding of how different materials and components can alter the function, purpose and appearance of their finished product.

They are able to understand the importance well designed and purposeful products have on their wider community and overall society; specifically in meeting the needs, expectations and wants of the public.

Our children are able to understand that Design and Technology helps to showcase their ideas and creativity.

Future Opportunities

- As a school, we are developing our Assessment methods for all of our Foundation Subjects. When using Cornerstones, each lesson incorporates a key skill that teachers are able to measure progress against. Our next step is to ensure there is consistency amongst the year groups so that both subject leaders and class teachers are confident in knowing where their cohort's strengths are as well as areas for development.
- We are also reviewing the diversity on offer throughout our curriculum – ensuring that our children are exposed to a wide range of craft makers, designers and engineers.
- The subject leader will also work with staff to ensure that they all have access to the CPD that gives them the confidence to teach Design and Technology effectively.