Wardley CE Primary School
Design Technology Policy
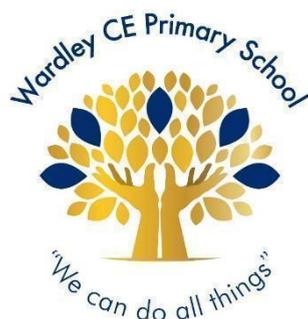
Name of Reviewer	Andrew Tinkler
Date of Approval of Governing Body	September 2023
Signature of Chair	*Alan Johns*
Signature of Head	*Mark Foster*
Date Due for Review	September 2026

EQUALITY STATEMENT

As a school we welcome our duties under the Equality Act 2010. The general duties are to:

- eliminate discrimination, harassment and victimisation

- advance equality of opportunity

- foster good relations

We review all policies and procedures we operate to ensure there are no negative equality impacts based on the following protected characteristics: age, disability, ethnicity & race, gender (sex), gender identity & reassignment, pregnancy & maternity, sexual orientation, religion & belief and non-belief as outlined in the Equality Act 2010. If you feel, on reading this policy that there may be a negative equality impact, please tell us about this. Please also let us know if you need to access this policy in a different format. You can do this by contacting the school office.

Our school vision

We are a Church of England school that values and recognises the uniqueness of each individual child and acknowledges their fundamental right to be educated to their full potential in a safe, secure and caring environment. Our ethos is built on Christian foundations and drives our belief that we can do all things.

Wardley CE Primary School is committed to continual improvement to ensure that what we do today is even better tomorrow. We provide a happy, secure and supportive learning environment where the children develop independence and work hard to make the most of their talents, and that 'We can do all things' within a deep and rich curriculum.

We can do all things through Christ who strengthens us. Phillippians 4:13

Practical ways in which we attempt to carry out our school vision

Through the Christian value of respect:
-Having strong ethics to underpin our decision making and actions.
-Creating an environment which promotes the Christian ethos of trust, respect and honesty to enable people to flourish.
-Promoting a sense of justice.
-Creating a strong moral purpose which underpins everything we do

Through the Christian value of friendship:
-Having an inclusive ethos to create a school in which everyone is welcome and everyone is equal.
-In celebrating diversity, we value the strengths of all and embrace differences.
-Engaging stakeholders within and beyond the school.

Through the Christian value of trust:
-Having a strong sense of teamwork amongst all members of the school community.
-No matter how small, we value every contribution and support each other to reach our goals.
-In respecting each other, we strive to not let each other down.
-In feeling valued and empowered people have a desire to go the extra mile.

Through the Christian value of courage
-Recognising, supporting and developing everyone's potential.
-Nurturing skills and promoting opportunities.
-Creating an environment for people to think positively and take risks.

Through the Christian value of perseverance:
-Through continual enhancement we are constantly striving to achieve high standards, we never stand still.
-All improvements are underpinned with high aspirations.
-When problems arise, we must hold on to our vision and find solutions.

-We inspire and innovate and we support others to do the same.

Spiritual Moral Social & Cultural Statement

At Wardley CE Primary School we are all designers and technologists. We want our pupils to appreciate Design and Technology and have no limits to what their ambitions are and grow up wanting to be architects, graphic designers, chefs, engineers or carpenters.

We want them to embody our Christian values of *Respect, Trust, Friendship, Courage* and *Perseverance,* both spiritually and academically and embrace the school mission statement of: *'We can do all things through Christ who strengthens us.'*

The Design and Technology curriculum at Wardley has been designed with the ultimate goal to engage, inspire and challenge all pupils, equipping them with the knowledge and skills to design, invent, assemble and evaluate their own products for people to use. It aims to provide the pupils with opportunities to think critically and develop a more rigorous understanding of Design and Technology.

In Design and Technology, we will endeavour to create an atmosphere of mutual respect in our relationships with every other member of the school. With a consistently positive attitude we will act with fairness to everybody. We will endeavour to be consistent in our speech and manner to all members of the school, fostering caring, loving attitudes towards everyone, and setting a good example through our relationships with each other.

We will endeavour to create a safe and secure environment, emotionally and physically, making Design and Technology a wonderful, joyful, awe-inspiring subject to be involved in. We will encourage the children to feel an important part of every step and value every contribution by encouraging each person's involvement in Design and Technology lessons.

It is set within our school's framework for developing spiritual, moral, social and cultural (SMSC) understanding.

Spiritual education in the Design and Technology curriculum at Wardley CE Primary School is seen when the work of children becomes a spiritual encounter as it develops from the initial learning of skills. They are reminded 'We can do all things' as they set off on their new project. They are introduced to the work of great designers, from chocolatiers to engineers and experience wonder and awe at the achievements of these inspirational products. They also experience great admiration and respect for themselves and their peers' work when they see the level of achievement and progress that has been reached. Pupils understand that this standard of work does not happen immediately but requires *perseverance* and *courage*; two of our values at Wardley.

Moral education in the Design and Technology curriculum at Wardley CE Primary School is seen when the children incorporate mutual respect and the consideration for others' work. Using the values of *trust* and *friendship*, Pupils are encouraged to show compassion when assessing the work of others. Understanding how their comments can build up or destroy another's self-belief. The display in the hall shows a variety of different design work from all age groups and abilities, including EYFS. This display is viewed every single day and promotes children to be positive about their work and increases self-esteem.

Social education in the Design and Technology curriculum at Wardley CE Primary School is seen when children collaborate on their designing, assembling, mastery of new skills and evaluation. This requires cooperation and communication, linking to the school's values of *trust*, *friendship* and *respect*. The children often share their products with other people, like bags and boxes containing gifts for a family member, artisan breads to share with an evening meal and puppets to play with at home. There are also social aspects in art from visiting various places such as the Year 3 visit to Bolton Museum.

Cultural education in the Design and Technology curriculum at Wardley CE primary School is seen through the links that the curriculum has through contextual themes to a wide range of cultures and civilizations from around the world. This leads to children gaining a greater understanding of different ways of life and a respect for cultures that are very different from our own; how they can enrich our own lives. The fusion of art work between our own and other cultures leads to pupils incorporating designs, patterns and motifs in their own work developed by a deeper understanding of the culture. A great example of this can be found in Year 5 where the children are immersed in the Mayan civilisation, not only through Design and Technology, but in History and Art too.

Intent

What is Design and Technology?

Design & Technology is an inspiring, rigorous and practical subject at Wardley. The curriculum allows opportunities for pupils to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.

The Design and Technology curriculum promotes curiosity and a love and thirst for learning. It is ambitious and empowers our pupils to become independent and resilient. We want to equip pupils with ambition beyond the minimum statutory requirements of the Design and Technology National Curriculum and prepare them for the opportunities, responsibilities and experiences of later life.

The curriculum is meticulously planned with the intention to address social disadvantage and ensure that all pupils, including those with SEND, have an

opportunity to engage with a challenging curriculum and achieve success. Any gaps in pupils' knowledge are quickly identified and addressed to ensure that pupils are supported to meet the ambitious intended end points of the curriculum in design and technology.

"Design creates culture. Culture shapes values. Values determine the future."
Robert L. Peters (Designer and Author)

"Design is not just what it looks like and feels like. Design is how it works."
Steve Jobs (Co-founder and CEO of Apple)

"Creativity is inventing, experimenting, growing, taking risks, breaking rules, making mistakes and having fun."
Mary Lou Cook (Actress)

The children are reminded of what Design and Technology is and what it means to study Design and Technology.

In EYFS and Key Stage 1 the statement reads:
'Design and Technology is the designing and making of things for people to use.'

In Key Stage 2 the statement reads:
'Design and Technology is a study that focuses on planning, designing and creating products for people to use.'

Through Design and Technology, the children will acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils will learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education make an essential contribution to the creativity, culture, wealth and well-being of the nation.

Design and Technology inspires a curiosity and fascination about important things in our world from an early age. The subject is therefore well placed to play an important part in developing the school's vision to enable the children to make the most of their talents and see that 'we can do all things' within a deep and rich curriculum.

Our subject intent for Design and Technology is that the children will aim to:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world

- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.

- critique, evaluate and test their ideas and products and the work of others.

- understand and apply the principles of nutrition and learn how to cook.

We expect:

- The willingness to take creative risks to produce innovative ideas and prototypes.

- An excellent attitude to learning independently and with others.

- The ability to carry out thorough research and ask questions to develop a detailed knowledge of users' needs.

- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely.

- A thorough knowledge of which tools, equipment and materials to use to make their products.

- The ability to apply mathematical and scientific knowledge.

- The ability to manage risks exceptionally well to manufacture products safely and hygienically.

- A passion for the subject and knowledge of up-to-date technological innovations in materials, products and systems.

Our Wardley values and our core values are placed at the heart of everything we do. These continually feed into the Design and Technology curriculum. We enrich pupils' time in our school with memorable, unforgettable experiences and provide opportunities to engender an appreciation of human creativity and achievement.

Implementation

At Wardley Primary School our Design and Technology has identified three key threshold concepts that the children will keep returning to in their Design and Technology work. These set out the disciplinary knowledge for the subject. The objectives of Design and Technology teaching in the school are based on the requirements of the National Curriculum programmes of study for Key Stages 1 and 2. Within each academic year, children will study three Design and Technology topics. Across the whole school, there are three key Design and Technology threshold concepts that the children will keep returning to in their Design and Technology work.

The children know these as the 'Big Ideas'.

The children are assessed by the teacher during each unit against the age-related expectations for these key Design and Technology threshold concepts. They are:

- To master practical skills

- To design, make, evaluate and improve

- To take inspiration from design throughout history

Over the course of an academic year, pupils experience three Design and Technology weeks consisting of carefully planned projects which provide full coverage of skills.

During these weeks the pupils:

- are presented with a sequenced booklet with an exciting design brief
- given opportunities to explore famous designers.
- reminded of the Threshold Concepts (Big Ideas)
- introduced and re-introduced to Design and Technology vocabulary
- practise and master Design and Technology skills
- become resourceful, innovative and enterprising
- draw on disciplines such as mathematics, science, computing and art.
- evaluate their abilities and final product

In Key stage 1 pupils design, make and evaluate. They are taught to:

- use knowledge, understanding and skills needed to engage in an iterative process of designing and making

- design purposeful, functional, appealing products for themselves and other users based on design criteria

- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]

- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

- explore and evaluate a range of existing products

- evaluate their ideas and products against design criteria

- build structures, exploring how they can be made stronger, stiffer and more stable

- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

In Key stage 2 pupils design, make and evaluate. They are taught to:

- use knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups

- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]

- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

- investigate and analyse a range of existing products

- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures

- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]

- apply their understanding of computing to program, monitor and control their products.

At Wardley CE Primary School the children experience 'Food Technology' and the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to

cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

In Key Stage 1 pupils are taught to:

- use the basic principles of a healthy and varied diet to prepare dishes

- understand where food comes from.

In Key Stage 2 pupils are taught to:

- understand and apply the principles of a healthy and varied diet

- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques

- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

At Wardley CE Primary, all design projects begin by gathering background research and are taught how to effectively evaluate past and present design and technology and develop a critical understanding of its impact on daily life and the wider world. Pupils take inspiration from designers and technologists throughout history to help generate ideas for their work.

They also learn the importance of the target audience and the relevance of market research. The pupils learn how to write design specifications, developing their ability to plan for products that are fit for purpose.

Teachers ensure the subject is delivered in creative and engaging ways, to develop pupils' technical knowledge. This can span from learning how mechanical systems such as gears, pulleys, cams and levers function to preparing and cooking a variety of dishes using a range of cooking techniques.

Teaching is highly effective for all pupils. Teachers present the curriculum content clearly through component parts of the Design and Technology project booklets.

Each lesson within a unit of work is carefully crafted and builds upon what has been previously taught from one year to the next as well as from the previous lesson. The Design and Technology curriculum is adapted to build upon the learning opportunities and assessment end points for each year group and ensures progression and repetition in terms of embedding key learning, knowledge and skills.

Design and Technology subject specific characteristics, which we expect the pupils to demonstrate, have been developed and shared with all stakeholders. These characteristics underpin all work in Design and Technology and form a focal point for

display areas and provide a common subject specific vocabulary for staff and pupils. These characteristics are:

The teaching of the design and technology curriculum is planned and delivered to support pupils to transfer key knowledge into their long-term memory and therefore improve the progress they make. Essential vocabulary is identified within each lesson and unit of work to ensure that our pupils can discuss and evaluate the design and technology content effectively.

Whilst delivering the curriculum, teachers are constantly checking to ensure that pupils are learning the necessary knowledge and identifying and addressing misunderstandings. Assessment is used as a tool to support pupil learning.

At Wardley CE Primary School we place five pedagogical principles at the heart of our Design and Technology curriculum and we have ensured that there is time spent on the intent of how we deliver this. Our aim is for the children to 'remember more and know more".
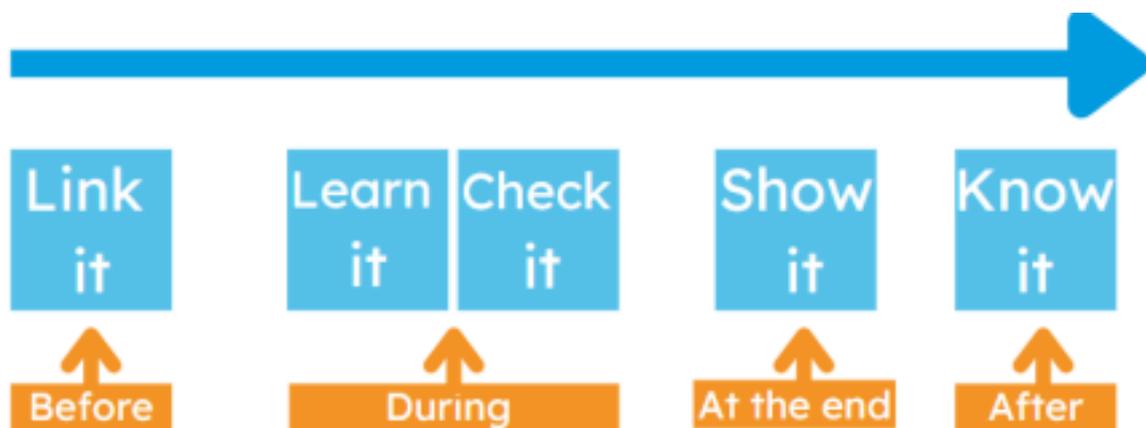
Link It: At the beginning of a unit of learning teachers carefully link the children's prior learning. Learning starts with igniting pupils' prior knowledge. Research on cognitive load recognises the potential benefits this will have upon long-term retention. Once established, we move onto the 'Learn It' stage where the composite learning is broken down into manageable components.

Learn It: This is new learning. It is often taught through a sequence of lessons that follow a 'line of enquiry'. These are shaped by key questions which guide the children's exposure to new knowledge and link it back to the overarching line of enquiry. Children learn the substantive knowledge required for the area of learning (based on the essential opportunities) whilst developing their disciplinary knowledge for the subject through the threshold concepts.

Check It: Throughout the 'Learn It' phase, teacher's plan 'Check It' opportunities for adults to review their learning to date. This gives teachers the opportunity to recognise gaps in pupils' knowledge and to enable them to make future decisions

based on these assessments. Throughout lessons, the children's understanding will be checked by the teacher through a range of 'Check It' tasks.

Show it: At the end of a sequence of learning, we use 'show it' which is beneficial in enabling pupils to showcase their learning. The children present their learning at the end of each area of learning. This often takes the form of an end of unit reflection activity in which the children bring together their ideas in response to the 'line of enquiry' that they have been following. Importantly, there is encouragement for pupils to come up with innovative ideas.

Know It: At Wardley CE Primary School, we check that the children know more and remember more with a summative activity at the end of each area of learning. As well as this, the children have regular retrieval sessions to retrieve their prior learning to ensure that it is not lost. This would normally be after the area of learning has been concluded and could be later, or even much later, in the school year.

Links to the Wider Curriculum

At Wardley CE Primary School Design and Technology is taught through a blocked curriculum approach and we teach each project discreetly. We try to link Design and Technology to other subjects, such as Art and Design, Mathematics, Science and History to help build on prior knowledge whilst ensuring no tenuous link is made.

Design and Technology in the EYFS

Specific Design and Technology techniques will be used to help develop these strands within the context of an art curriculum that extends throughout the school. The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas. The aim of this document is to help to understand how the skills taught across EYFS feed into national curriculum subjects.

This section demonstrates which statements from the 2020 Development Matters are prerequisite skills for Design and Technology within the national curriculum. Here are the Early Learning Goals in the EYFS statutory framework and the Development Matters age ranges for Three and Four- Year-Olds and Reception to match the programme of study for Design and Technology.

The most relevant statements for Design and Technology are taken from the following areas of learning:
- Physical Development
- Understanding the World
- Expressive Arts and Design

The Development Matters 2020 statements are, therefore, a more detailed means to achieve these goals and an indication of where they are heading towards.

Physical Development in the EYFS
- Use large-muscle movements to wave flags and streamers, paint and make marks.

- Choose the right resources to carry out their own plan.

- Use one-handed tools and equipment, for example, making snips in paper with scissors.

- Develop their small motor skills so that they can use a range of tools competently, safely and confidently.

- Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.

Understanding the World in the EYFS
- Explore how things work.

Expressive Arts and Design in the EYFS
- Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.

- Explore different materials freely, to develop their ideas about how to use them and what to make.

- Develop their own ideas and then decide which materials to use to express them.

- Create closed shapes with continuous lines and begin to use these shapes to represent objects.

- Explore, use and refine a variety of artistic effects to express their ideas and feelings.

- Return to and build on their previous learning, refining ideas and developing their ability to represent them.

- Create collaboratively, sharing ideas, resources and skills.

The Early Learning Goals are a suggestion of where a child is at the end of Reception. By the end of EYFS we expect the children to be able to:

Physical Development (Fine Motor Skills)
- Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases.

- Use a range of small tools, including scissors, paintbrushes and cutlery.

- Begin to show accuracy and care when drawing.

Expressive Art and Design (Creating with Materials)

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

- Share their creations, explaining the process they have used. The key link for art within the EYFS is in expressive arts and design.

Within this strand of the EYFS curriculum, the development of children's artistic and cultural awareness supports their imagination and creativity. We feel that it is important that our children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through designs and technologies. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.

Impact

The impact of Design and Technology can be seen in the progress that the pupils make. This can be seen as knowing more, remembering more and being able to do more. It is about the pupils developing their ability to think geographically. It is about connecting existing and new knowledge, developing competence and making links. Assessment is both formative as children learn and summative to evaluate the gains that have been made. It is kept to the minimum necessary to be fit for its purpose.

The way we assess this progress includes the following practice (as set out in the school's teaching & learning policy and assessment policy):

On-going formative assessment - this includes the use of day to day assessment for learning classroom practice and feedback. It looks at the pupil's development of key knowledge and skills through each project, through each year and from previous years. It can include recaps, short quizzes and pupil reflections. The aim is to reactivate thinking, make links and connect ideas to better embed them in the long-term memory.

Long term summative assessment - this looks at substantial conceptual & procedural knowledge. It involves the pupils drawing their learning together, for example in their final design piece. It can provide a snapshot of whole school progress e.g. whole pupil reflection at the end of each project.

Role of the subject leader.

The Design and Technology subject leader at Wardley CE Primary School is Andrew Tinkler.

Their role as a subject leader is to act as a guardian of the standards in the subject.

This means that they know:

• How well pupils achieve.

• What the strengths of provision are

• What needs to be done to improve outcomes.

To achieve this, subject leaders undertake the following monitoring activities on a termly basis:

• Lesson observations.

• Monitoring of children's books.

• Discussions with both adults and children.

• Looking at classroom displays.

In addition, subject leaders will:

• Support staff in their development of planning and to monitor planning.

• Facilitate the sharing of good practice among staff.

• Work together with colleagues to raise standards.

• Ensure that the policy documents and curriculum resources remain useful and current.

Design and Technology and links to home.

Ideas about how parents and carers can help their child with Design and Technology at home are sent out on the class curriculum leaflets each half-term.

Design and Technology can be the focus of the half-term homework project. This allows the children to use their imagination to present their projects in a variety of ways such as in written, pictorial or physical product form as well as using ICT.

Every project, the Design and Technology subject leader creates a blog which is put onto the school website. The blog celebrates each year group's project, from EYFS to Year 6, and contains text and photographs of the week's activities. This can be viewed by children and their families at home.

Inclusion

At Wardley CE Primary School all children have access to Design and Technology lessons and activities regardless of their characteristics or ability. Teaching approaches provide equality of opportunity by making sure the work is suitable for all, regardless of gender, considering religious and cultural beliefs and enabling those with disabilities to have full participation

Through adaptive teaching we provide all children with the tools and support to be involved and access every history lesson. This is the 'low threshold, high ceiling' model of teaching and learning that is set out in our teaching and learning policy.

To promote an inclusive environment in Design and Technology we will use the following provision model:

Wave 1 Support

Inclusive Quality First Teaching

Adaptations planning and work
Additional concrete resources to support learning in class e.g. number lines, word mat, visualiser
Inclusive ethos and learning environment – SEN Policy, Accessibility Policy, SEN Information Report.
Behaviour management
Effective deployment of staff and support staff
Consideration of teaching programs and planning for varied learning styles
Accurate assessments
Pupil progress meetings
Working closely with parents
Being mindful of cultural and social differences / influences in the community

Wave 2 Support

Additional Interventions to enable children to work at age-related expectations or above

Provision mapping
Interventions – both evidence based and informal e.g. Phonics, Mr Goodguess, SALT, Lego therapy
Use of marking and assessment to identify children who need a re-cap focus
Pre-teaching / Post teaching follow up
Small group phonics
Well-being groups
Social communication resources in class e.g. timetables, social stories
visual cards
SALT strategies used in class e.g. visuals to support, use of gestures/sign language

Wave 3 Support

Targeted provision for those who require a high level of personalised and specialised support

IEPs
SALT intervention or 1:1 specialist SALT
1;1 emotional therapy – iThrive
1:1 input LSS and PIT
Enhanced SALT support (School Buy-in)
Precision teaching
Behaviour plans
Personalised reward programs
Personalised strategies used in class – e.g. dyslexia overlays, specific formats for writing on