Design and Technology Curriculum Overview

This Curriculum Overview shows what your child will learn in Design and Technology during their time at The Free School Norwich. This is reviewed annually and may be adapted to meet the needs of individual children or classes, and where appropriate, will be linked to events or places in our local environment.

Year 1		
Christmas **Healthy Food Explorers**	**Spring** **Textile Tales: Exploring Fabrics and Crafts**	**Summer** **Tower Builders: Exploring Structures and Mechanisms**
In the "Healthy Food Explorers" project, children will embark on a culinary adventure to explore different types of healthy foods and develop basic food preparation skills. They will learn about the importance of a balanced diet, food groups, and the benefits of consuming various fruits and vegetables. The project will also focus on developing children's knowledge of kitchen safety and hygiene while fostering teamwork and creativity in a fun and interactive environment.	In the "Textile Tales" project, children will embark on a creative journey to explore different types of fabrics and engage in various textile crafts. They will learn about the properties of different fabrics, develop basic weaving and sewing skills, and create their own textile products. Through storytelling and imagination, the project will promote artistic expression and build children's confidence in using textiles as a medium for their ideas.	In the "Tower Builders" project, children will become young engineers and architects, exploring the world of structures and mechanisms by building their own towers. They will investigate different materials, learn about basic engineering principles, and develop skills in construction and teamwork. Through hands-on activities, the project will encourage problem-solving, creativity, and an understanding of how structures and mechanisms work
Day 1: Food Group Adventure • Introduce different food groups and their benefits (e.g., fruits, vegetables, grains). • Play a "Food Group Adventure" game, where children sort and match pictures of foods to the correct food groups. • Create a class poster with food group illustrations. **Creating a Rainbow Plate** • Discuss the importance of eating a variety of colourful fruits and vegetables. • Introduce the concept of a "rainbow plate" and how it represents a balanced diet.	**Lesson 1 Exploring Fabrics** • Introduce various fabrics (e.g., cotton, wool, silk, felt) and their characteristics. • Discuss the uses of different fabrics in everyday items. • Children touch and examine different fabric swatches. **Lesson 2 Weaving Wonders** • Introduce the concept of weaving and its cultural significance. • Use paper or cardboard looms to teach basic weaving techniques. • Children create small woven patterns or designs.	**Lesson 1 Introduction to Towers** • Discuss different types of towers and their purposes (e.g., skyscrapers, bridges, and historical towers). • Introduce basic engineering principles, such as stability and balance. • Children draw and label their favourite towers. **Lesson 2 Building Materials** • Introduce various building materials (e.g., blocks, cardboard, straws). • Discuss the properties of materials and their suitability for tower construction.

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- Children draw and colour their own rainbow plates with different fruits and vegetables.

Designing a Healthy Snack

- Discuss the components of a healthy snack (e.g., a mix of fruits, vegetables, and dairy).
- Children work in pairs or small groups to design a healthy snack using illustrations or pictures.
- Present and share their snack designs with the class.

Exploring New Flavors

- Conduct a "Taste Test" activity where children taste different fruits and vegetables.
- Encourage them to describe the taste, texture, and appearance of each food.
- Children create a chart to record their favourite tastes and textures.

Day 2: Food Preparation Safety

- Introduce basic kitchen safety rules, such as washing hands and using child-safe knives.
- Children practice cutting soft fruits or vegetables under teacher supervision.
- Create a class "Kitchen Safety Rules" poster.

Making our Healthy Snacks

- Recap the healthy snack designs from Lesson 3.
- Children work in groups to prepare and assemble their healthy snacks.
- Share and enjoy their delicious creations together.

Vocabulary

Food groups/ Nutritious/ Snack/ Ingredients/ Kitchen safety Design/ Healthy choices/ Fruits/ Vegetables/ Taste test

Links to National Curriculum:

Design and Technology - Cooking and Nutrition:

- Understand where food comes from and how it is prepared.
- Identify and name a variety of common fruits and vegetables.

Lesson 3 Fabric Collage Stories

- Read a simple story or fable to the children.
- Discuss the characters, settings, and key elements in the story.
- Children use fabric scraps to create a fabric collage that tells the story.

Lesson 4 Designing and Sewing

- Introduce basic sewing techniques (e.g., running stitch, backstitch).
- Children design and draw their own simple textile product (e.g., bookmark or mini-bag).
- They use fabric and thread to bring their designs to life.

Lesson 5 Textile Art Exploration

- Introduce famous textile artists or traditional textile artworks.
- Children use fabric, threads, and other materials to create their own textile artwork or picture.
- Encourage them to express their creativity and imagination.

Lesson 6 Textile Showcase

- Children present their textile creations to the class, explaining their designs.
- Celebrate their achievements with a class exhibition or display.
- Discuss their learning journey and newfound appreciation for textiles.

Vocabulary

Fabrics/ Weaving/ Sewing/ Textile/ Collage/ Design/ Imagination/ Patterns/ Texture/ Artwork

Links to National Curriculum:

Design and Technology - Textiles and Materials:

- Identify and explore different types of fabrics and their properties.
- Learn basic weaving and sewing techniques.

Design and Technology - Designing:

- Children explore different materials and compare their strengths and weaknesses.

Lesson 3 Tower Designs

- Children work in small groups to design and plan their own towers.
- Encourage creative and imaginative designs.
- They draw their tower plans, indicating the materials they will use.

Lesson 4 Tower Construction

- Provide various building materials and tools for tower construction.
- Children build their towers following their design plans.
- They experiment with different construction techniques to create stable structures.

Lesson 5 Testing and Evaluating

- Children test their towers for stability and height.
- Discuss the successes and challenges faced during construction.
- Encourage them to make improvements based on their evaluations.

Lesson 6 Tower Showcase

- Children present their towers to the class, explaining their designs and construction process.
- Celebrate their achievements with a tower showcase or exhibition.
- Discuss what they have learned about structures and mechanisms.

Vocabulary

Structures/ Mechanisms/ Engineering/ Stability/ Construction/ Materials/ Balance/ Design/ Height/ Teamwork

Links to National Curriculum:

Design and Technology - Structures and Mechanisms:

- Investigate different types of structures and how they are built.

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• Use simple food preparation techniques, such as washing, peeling, and cutting. **Design and Technology - Designing:** • Design and make a healthy snack using a variety of fruits and vegetables. • Discuss ideas and make simple design choices for their food creations. **English - Speaking and Listening:** • Participate in class discussions about healthy foods and their benefits. • Share their experiences and reflections on trying new foods. **Mathematics - Measurement:** • Explore measuring skills (e.g., counting, comparing, and weighing) while preparing ingredients. **Personal, Social, Health, and Economic Education (PSHE) - Health and Wellbeing:** • Discuss the importance of eating a balanced diet for good health. Develop positive attitudes towards trying new foods and making healthy choices.	• Design and create simple textile products, incorporating their knowledge of fabrics. **Art and Design - Creating Artwork:** • Use textile materials to create pictures, patterns, and textures. **English - Speaking and Listening:** • Participate in storytelling sessions, expressing their ideas and imagination. **Mathematics - Measurement:** • Use measuring skills (e.g., counting, comparing lengths) when working with textiles. **Personal, Social, Health, and Economic Education (PSHE) - Expressive Arts:** • Develop self-confidence and creativity through textile crafts.	• Explore basic mechanical principles, such as stability and balance. **Design and Technology - Designing:** • Design and plan their own tower structures using various materials. • Experiment with different construction techniques to build stable towers. **Science - Materials:** • Identify and compare different materials used in tower construction. • Explore the properties of materials and how they affect tower stability. **Mathematics - Measurement:** • Use measuring skills to ensure the stability and height of their towers. **Personal, Social, Health, and Economic Education (PSHE) - Teamwork:** • Collaborate with peers to plan and construct towers. • Practice effective communication and sharing ideas. •

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Year 2		
Christmas **Pasta Palate: Exploring Food and Nutrition through Pasta Salad**	**Spring** **Fairground Adventure: Exploring Structures and Mechanisms**	**Summer** **Puppet Play: Exploring Textiles through Hand Puppets**
In the "Pasta Palate" project, children will become aspiring chefs, exploring the world of food and nutrition by making their own pasta salad. They will investigate different types of ingredients, learn about balanced diets and healthy eating habits, and develop basic food preparation skills. Through hands-on cooking activities, the project will encourage creativity, teamwork, and an understanding of the importance of nutritious and delicious meals.	In the "Fairground Adventure" project, children will become fairground designers and engineers, exploring the world of structures and mechanisms by building their own fairground rides and attractions. They will investigate different types of fairground structures, learn about basic mechanical principles, and develop skills in construction and teamwork. Through hands-on activities, the project will encourage problem-solving, creativity, and an understanding of how structures and mechanisms work in the context of a fairground setting.	In the "Puppet Play" project, children will delve into the creative world of textiles by making their own hand puppets. They will explore different types of fabrics, learn basic sewing techniques, and develop skills in designing and crafting puppets. Through imaginative play and storytelling, the project will encourage self-expression, teamwork, and an appreciation for the art of puppetry
Day 1: Introduction to Pasta Salad • Introduce the concept of pasta salad and its ingredients. • Discuss the importance of a balanced diet and healthy eating habits. • Children draw and label their favorite pasta salad ingredients. **Gathering Ingredients** • Introduce various ingredients used in pasta salad (e.g., pasta, vegetables, dressing). • Discuss the nutritional value of each ingredient and its role in a balanced meal. • Children explore different ingredients and their tastes.	**Lesson 1: Introduction to Fairgrounds** • Explore different types of fairground rides and attractions. • Discuss the components and structures that make up a fairground. • Children draw and label their favourite fairground rides. **Lesson 2: Engineering Marvels** • Introduce basic engineering principles used in fairground rides (e.g., levers, pulleys, and gears). • Discuss how these mechanisms create motion and fun experiences. • Children explore simple mechanical toys to understand basic principles.	**Lesson 1: Introduction to Hand Puppets** • Explore different types of hand puppets and puppetry styles. • Discuss the basic features and characteristics of hand puppets. • Children draw and describe their ideal hand puppet character. **Lesson 2: Fabrics and Materials** • Introduce various fabrics and their properties (e.g., soft, rough, smooth). • Discuss the suitability of different fabrics for puppet making. • Children touch and examine different fabric swatches.

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Designing Pasta Salad • Children work in groups to design and plan their own pasta salad recipes. • Encourage creative and nutritious ingredient combinations. • They draw their salad plans, indicating the ingredients and quantities. **Day 2: Making Pasta Salad** • Provide the necessary ingredients and tools for making pasta salad. • Children prepare their pasta salad following their design plans. • They practice food preparation skills, such as washing, cutting, and mixing. **Taste Testing and Evaluating** • Children taste their pasta salads and evaluate the flavours and textures. • Discuss the successes and challenges faced during preparation. • Encourage them to adjust enhance their salads. **Pasta Palate Showcase** • Children present their pasta salads to the class, explaining their ingredient choices and preparation process. • Celebrate their culinary achievements with a pasta salad showcase or tasting event. • Discuss what they have learned about food, nutrition, and the joy of creating healthy and tasty meals. ***Vocabulary*** Ingredients/ Nutrition/ Balanced diet/ Healthy eating Preparation/ Salad/ Pasta/ Flavors/ Tasting/ Showcase ***Links to National Curriculum:*** **Design and Technology - Cooking and Nutrition:** • Explore where food comes from and how it is prepared.	**Lesson 3: Designing Fairground Rides** • Children work in groups to design and plan their own fairground rides or attractions. • Encourage creative and imaginative designs, considering safety and fun. • They draw their ride plans, indicating the mechanisms they will use. **Lesson 4: Building Fairground Structures** • Provide various materials and tools for building fairground structures. • Children construct their fairground rides following their design plans. • They experiment with different mechanisms to create functional attractions. **Lesson 5: Testing and Evaluating** • Children test their fairground rides for stability and functionality. • Discuss the successes and challenges faced during construction. • Encourage them to make improvements based on their evaluations. **Lesson 6: Fairground Showcase** • Children present their fairground attractions to the class, explaining their designs and mechanisms. • Celebrate their achievements with a fairground showcase or exhibition. • Discuss what they have learned about structures, mechanisms, and the fun of fairgrounds. ***Vocabulary*** Fairground/ Structures/ Mechanisms/ Engineering/ Rides Attractions/ Motion/ Levers/ Gears/ Teamwork ***Links to National Curriculum:*** **Design and Technology - Structures and Mechanisms:** • Investigate different types of fairground rides and structures. • Explore basic mechanical principles, such as levers, gears, and motion.	**Lesson 3: Designing Hand Puppets** • Children work on designing their own hand puppet characters. • Encourage creative and imaginative puppet designs, considering different features and personalities. • They draw their puppet designs, indicating the fabrics and decorations they will use. **Lesson 4: Puppet Crafting** • Provide various materials and tools for puppet crafting. • Children cut and assemble their puppet components following their design plans. • They practice basic sewing techniques to attach fabric pieces together. **Lesson 5: Puppet Play and Storytelling** • Children practice using their hand puppets in role-playing and storytelling activities. • Encourage them to create dialogues and act out puppet stories. • Discuss the importance of creativity and self-expression in puppetry. **Lesson 6: Puppet Showcase** • Children present their hand puppets and share the stories they have created. • Celebrate their artistic achievements with a puppet showcase or puppet show. • Discuss what they have learned about textiles, creativity, and the magic of puppetry. ***Vocabulary*** Textiles/ Fabrics/ Sewing/ Design/ Puppetry/ Hand puppet Crafting/ Puppet characters/ Self-expression/ Showcase **Links to National Curriculum:** **Design and Technology - Textiles and Materials:** • Identify and explore different types of fabrics and their properties.

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• Identify and use a range of tools and equipment for food preparation. **Design and Technology - Designing:** • Design and plan their own pasta salad, considering a variety of ingredients for taste and nutrition. • Experiment with different combinations of ingredients to create a balanced and tasty salad. **Science - Health and Growth:** • Understand the importance of a balanced diet for good health and growth. • Investigate the nutritional value of different ingredients in the pasta salad. **Mathematics - Measurement:** • Use measuring skills to follow recipes and prepare ingredients accurately. **Personal, Social, Health, and Economic Education (PSHE) - Health and Wellbeing:** • Discuss the importance of healthy eating for physical and mental well-being. • Encourage sharing and positive communication during cooking activities.	**Design and Technology - Designing:** • Design and plan their own fairground attractions, considering safety and fun. • Experiment with different construction techniques to build stable and functional fairground rides. **Science - Forces and Motion:** • Explore how forces and motion affect the movement of fairground rides. • Investigate concepts like gravity, friction, and centrifugal force. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and safety of their fairground rides. **Personal, Social, Health, and Economic Education (PSHE) - Teamwork:** • Collaborate with peers to plan and construct fairground attractions. Practice effective communication and sharing ideas.	• Learn basic sewing techniques, such as stitching and attaching buttons. **Design and Technology - Designing:** • Design and plan their own hand puppet characters, considering features and personality. • Experiment with different textiles and decorations to bring their puppets to life. **Art and Design - Creating Artwork:** • Use textiles and other materials to create visual elements for their puppets. • Develop skills in drawing, cutting, and assembling puppet components. **English - Speaking and Listening:** • Participate in puppet play and storytelling activities, expressing their ideas and imagination. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their puppet designs. **Personal, Social, Health, and Economic Education (PSHE) - Expressive Arts:** • Develop self-confidence and creativity through textile crafts and puppetry.

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Year 3		
Christmas **Monstrous Mechanisms: Exploring Moving Monsters**	**Spring** **Sensational Sandwich Snacks: Exploring Food and Nutrition**	**Summer** **Green Thumb Architects: Exploring Mini Greenhouses (Structures)**
In the "Monstrous Mechanisms" project, children will immerse themselves in the captivating world of mechanisms by creating their own moving monsters. They will investigate different types of mechanisms, learn about basic engineering principles, and develop skills in designing and crafting their animated creatures. Through hands-on activities and storytelling, the project will foster creativity, problem-solving, and an understanding of how mechanisms bring monsters to life.	In the "Sensational Sandwich Snacks" project, children will embark on a culinary adventure by creating their own delicious and nutritious sandwich snacks. They will investigate different ingredients, learn about balanced diets and healthy eating habits, and develop basic food preparation skills. Through hands-on cooking activities, the project will foster creativity, teamwork, and an understanding of the importance of making healthy and tasty food choices.	In the "Green Thumb Architects" project, children will become budding architects and gardeners, exploring the world of structures by creating their own mini greenhouses. They will investigate different materials, learn about basic construction techniques, and develop skills in designing and building their small-scale green havens. Through hands-on activities and plant care, the project will foster creativity, teamwork, and an understanding of how structures can nurture plant growth.
Lesson 1: Introduction to Moving Monsters • Explore different types of moving monsters and their characteristics. • Discuss the principles of mechanisms and their role in creating movements. • Children sketch and describe their ideal moving monster designs. **Lesson 2: Mechanism Exploration** • Introduce various mechanisms used in moving monsters, such as levers, cams, and linkages. • Discuss how these mechanisms create specific movements and actions. • Children experiment with simple mechanisms to observe their functions. **Lesson 3: Designing Moving Monsters**	**Day 1: Introduction to Sandwich Snacks** • Explore different types of sandwich snacks and their ingredients. • Discuss the importance of a balanced diet and healthy eating habits. • Children draw and describe their favourite sandwich combinations. **Gathering Ingredients** • Introduce a variety of sandwich ingredients (e.g., bread, vegetables, protein sources). • Discuss the nutritional value of each ingredient and its role in a balanced meal. • Children explore different ingredients and taste combinations. **Designing Sandwich Snacks**	**Lesson 1: Introduction to Mini Greenhouses** • Explore different types of greenhouses and their purposes. • Discuss the benefits of using mini greenhouses for plant care and growth. • Children draw and describe their ideal mini greenhouse designs. **Lesson 2: Building Materials** • Introduce various materials used in building mini greenhouses (e.g., plastic, wood, metal). • Discuss the properties of materials and their suitability for greenhouse construction. • Children touch and examine different material samples. **Lesson 3: Designing Mini Greenhouses**

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• Children work in groups to design and plan their own moving monster characters. • Encourage creative and imaginative monster designs, considering expressions and movements. • They sketch their monster designs, indicating the mechanisms they will use. **Lesson 4: Building Monster Mechanisms** • Provide various materials and tools for building monster mechanisms. • Children construct their monsters' mechanisms following their design plans. • They test and adjust the mechanisms to achieve desired movements. **Lesson 5: Adding Artistic Flair** • Introduce artistic concepts for decorating their moving monsters. • Children use different materials and textures to bring their monsters to life. • Discuss the importance of aesthetics in their monster designs. **Lesson 6: Monster Showcase** • Children present their moving monsters to the class, demonstrating their unique movements. • Celebrate their engineering and artistic achievements with a monster showcase or exhibition. • Discuss what they have learned about mechanisms, forces, and the magic of bringing monsters to life. ***Vocabulary*** Mechanisms/ Engineering/ Moving monsters/ Cams/ Levers Linkages/ Forces/ Friction/ Artistic/ Showcase ***Links to National Curriculum:*** **Design and Technology - Structures and Mechanisms:** • Investigate different types of mechanisms used in moving monsters, such as levers, cams, and linkages.	• Children work in groups to design and plan their own sandwich snack recipes. • Encourage creative and nutritious ingredient combinations. • They draw their sandwich plans, indicating the ingredients and quantities. **Day 2: Preparing Sandwich Snacks** • Provide the necessary ingredients and tools for making sandwich snacks. • Children prepare their sandwich snacks following their design plans. • They practice food preparation skills, such as washing, cutting, and assembling. **Taste Testing and Evaluating** • Children taste their sandwich snacks and evaluate the flavours and textures. • Discuss the successes and challenges faced during preparation. • Encourage them to adjust enhance their recipes. **Sandwich Snack Showcase** • Children present their sandwich snacks to the class, explaining their ingredient choices and preparation process. • Celebrate their culinary achievements with a sandwich snack showcase or tasting event. • Discuss what they have learned about food, nutrition, and the joy of creating healthy and tasty snacks. ***Vocabulary*** Ingredients/ Nutrition/ Balanced diet/ Healthy eating Preparation/ Sandwich snacks/ Recipe/ Flavors/ Tasting Showcase **Links to National Curriculum:** **Design and Technology - Cooking and Nutrition:** • Investigate where food comes from and how it is prepared.	• Children work in groups to design and plan their own mini greenhouse structures. • Encourage creative and functional greenhouse designs, considering plant needs. • They draw their greenhouse plans, indicating the materials and measurements. **Lesson 4: Constructing Mini Greenhouses** • Provide various materials and tools for greenhouse construction. • Children build their mini greenhouses following their design plans. • They practice basic construction techniques to assemble their structures. **Lesson 5: Planting and Caring for Greenhouses** • Introduce different plants suitable for mini greenhouses (e.g., herbs, small vegetables). • Discuss the needs of plants for light, water, and air circulation. • Children plant their chosen crops and learn how to care for them. **Lesson 6: Greenhouse Showcase** • Children present their mini greenhouses to the class, explaining their designs and plant choices. • Celebrate their architectural and gardening achievements with a greenhouse showcase. • Discuss what they have learned about structures, plants, and the joy of nurturing a mini garden. ***Vocabulary*** Mini greenhouse/ Structures/ Construction/ Materials/ Design/ Plants/ Gardeners/ Crops/ Showcase/ Growth **Links to National Curriculum:** **Design and Technology - Structures and Mechanisms:** • Investigate different materials used in building mini greenhouses. • Explore basic construction techniques, such as joining and assembly. **Design and Technology - Designing:**

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• Explore how mechanisms can create various movements and actions in their monsters. **Design and Technology - Designing:** • Design and plan their own unique moving monster characters, considering motions, features, and expressions. • Experiment with different mechanisms to create a range of movements in their monsters. **Science - Forces and Motion:** • Understand how forces, such as push, pull, and gravity, affect the movements of their monsters. • Investigate the role of friction in controlling the speed and smoothness of movements. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their monster designs. **Computing - Programming and Control:** • Explore simple programming concepts, such as cause-and-effect relationships in moving their monsters. • Use control devices (if applicable) to activate specific movements in their monsters. **Art and Design - Creating Artwork:** • Apply artistic skills to design and decorate their monsters' appearances. • Experiment with different materials and textures to bring their monsters to life.	• Identify and use a range of tools and equipment for food preparation. **Design and Technology - Designing:** • Design and plan their own unique sandwich snack recipes, considering taste and nutrition. • Experiment with different combinations of ingredients to create balanced and flavourful sandwiches. **Science - Health and Growth:** • Understand the importance of a balanced diet for good health and growth. • Investigate the nutritional value of different ingredients in their sandwich snacks. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their sandwich recipes. **Personal, Social, Health, and Economic Education (PSHE) - Health and Wellbeing:** • Discuss the importance of healthy eating for physical and mental well-being. • Encourage sharing and positive communication during cooking activities.	• Design and plan their own mini greenhouse structures, considering size and features. • Experiment with different materials and shapes to create functional greenhouses. **Science - Plants:** • Understand the needs of plants for growth and development. • Investigate how the mini greenhouses create favourable environments for plants. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their greenhouse designs. **Geography - Environmental Changes:** • Discuss the impact of greenhouse structures on the local environment. • Explore the benefits of using greenhouses for sustainable gardening. **Art and Design - Creating Artwork:** • Apply creative skills to design and decorate their mini greenhouses. • Experiment with different colours and patterns to enhance the appearance.

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Year 4		
Christmas **Guardian Car Alarms: Exploring Electrical Systems**	**Spring** **Bread Bakers' Delight: Exploring the Art of Bread Making**	**Summer** **Stylish Stitches: Exploring Textiles with Pencil Case Designs**
In the "Guardian Car Alarms" project, children will become ingenious engineers, exploring the world of electrical systems by creating their own car alarms. They will investigate different electrical components, learn about circuitry and wiring, and develop skills in designing and building their security devices. Through hands-on activities and problem-solving, the project will foster creativity, teamwork, and an understanding of how electrical systems can enhance security.	In the "Bread Bakers' Delight" project, children will dive into the delicious world of food by learning the art of bread making. They will investigate different ingredients, learn about the science behind bread fermentation, and develop skills in kneading and baking. Through hands-on cooking activities, the project will foster creativity, teamwork, and an understanding of the cultural significance of bread in various cuisines.	In the "Stylish Stitches" project, children will delve into the captivating world of textiles by creating their own unique pencil cases. They will investigate different fabrics, learn about basic sewing techniques, and develop skills in designing and crafting their pencil case masterpieces. Through hands-on activities and artistic expression, the project will foster creativity, teamwork, and an appreciation for the art of textile design.
Lesson 1: Introduction to Car Alarms • Explore different types of car alarms and their purposes in vehicle security. • Discuss the importance of electrical systems in modern cars. • Children sketch and describe their ideal car alarm designs. **Lesson 2: Electrical Components** • Introduce various electrical components used in car alarms (e.g., sensors, buzzers, batteries). • Discuss the functions of each component in the alarm system. • Children examine and test different electrical parts. **Lesson 3: Designing Car Alarms** • Children work in groups to design and plan their own car alarm systems.	**Day 1: Introduction to Bread Making** • Explore the history and cultural significance of bread in different cuisines. • Discuss the basic ingredients and equipment used in bread making. • Children draw and describe their favourite types of bread. **Ingredients and Measurements** • Introduce various ingredients used in bread making (e.g., flour, yeast, water). • Discuss the importance of accurate measurements in bread recipes. • Children explore different ingredients and their characteristics. **Designing Bread Recipes** • Children work in groups to design and plan their own bread recipes.	**Lesson 1: Introduction to Pencil Case Designs** • Explore different types of pencil cases and their purposes. • Discuss the importance of textiles and sewing in pencil case design. • Children sketch and describe their ideal pencil case designs. **Lesson 2: Fabrics and Patterns** • Introduce various fabrics and their properties (e.g., cotton, denim, felt). • Discuss the suitability of different fabrics for pencil case making. • Children touch and examine different fabric swatches. **Lesson 3: Designing Pencil Cases** • Children work in groups to design and plan their own pencil case patterns.

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• Encourage creative and effective alarm designs, considering safety and security. • They draw their car alarm plans, indicating the electrical components and connections. **Lesson 4: Building Car Alarms** • Provide various materials and tools for building car alarms. • Children construct their car alarm systems following their design plans. • They practice basic wiring techniques to assemble their circuits. **Lesson 5: Testing and Adjusting** • Children test their car alarms and evaluate their effectiveness. • Discuss the successes and challenges faced during construction. • Encourage them to make adjustments to improve their alarm systems. **Lesson 6: Car Alarm Showcase** • Children present their car alarms to the class, demonstrating their functions and features. • Celebrate their engineering achievements with a car alarm showcase. • Discuss what they have learned about electrical systems, security, and the importance of innovation. ***Vocabulary*** Electrical systems /Components/ Circuitry/ Wiring/ Sensors Buzzer/ Electricity/ Conductors/ Insulators/ Showcase ***Links to National Curriculum:*** **Design and Technology - Electrical Systems:** • Investigate different electrical components used in car alarms, such as sensors and buzzers. • Explore basic circuitry and the flow of electricity in electrical systems. **Design and Technology - Designing:**	• Encourage creative and flavourful bread designs, considering different ingredients. • They draw their bread recipe plans, indicating the measurements and steps. **Day 2: Kneading and Fermentation** • Provide dough-making materials and tools for bread preparation. • Children knead and shape their dough following their recipe plans. • Discuss the process of bread fermentation and the role of yeast. **Baking and Tasting** • Introduce the baking process and the use of ovens for bread. • Children bake their bread and observe the transformation during baking. • They taste and evaluate the flavours and textures of their homemade bread. **Bread Showcase** • Children present their bread to the class, explaining their recipe choices and cultural inspirations. • Celebrate their culinary achievements with a bread showcase or tasting event. • Discuss what they have learned about food, cultural traditions, and the joy of baking bread. ***Vocabulary*** Bread/ Ingredients/ Fermentation/ Dough/ Yeast/ Baking Kneading/ Flavour/ Recipe/ Showcase ***Links to National Curriculum:*** **Design and Technology - Cooking and Nutrition:** • Investigate the origins of bread and its importance in the history of cooking. • Identify and use a range of tools and equipment for bread making. **Design and Technology - Designing:**	• Encourage creative and functional pencil case designs, considering pockets and closures. • They draw their pencil case plans, indicating the fabric choices and decorations. **Lesson 4: Sewing Techniques** • Provide sewing materials and tools for pencil case crafting. • Children practice basic sewing techniques, such as stitching and appliqué. • Discuss the importance of precision and patience in sewing. **Lesson 5: Decorating and Personalizing** • Introduce different decorations and embellishments for pencil case designs (e.g., buttons, ribbons). • Children add decorative elements to their pencil cases, expressing their artistic flair. • Discuss the importance of personalizing their creations. **Lesson 6: Pencil Case Showcase** • Children present their pencil cases to the class, explaining their design choices and creative process. • Celebrate their textile achievements with a pencil case showcase or exhibition. • Discuss what they have learned about textiles, sewing, and the joy of designing personalized items. ***Vocabulary*** Textiles/ Fabrics/ Sewing/ Design/ Pencil case/ Patterns Embellishments/ Decorations/ Personalizing/ Stich ***Links to National Curriculum:*** **Design and Technology - Textiles and Materials:** • Investigate different types of fabrics and their properties (e.g., patterns, textures). • Explore basic sewing techniques, such as stitching and appliqué.

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• Design and plan their own car alarm systems, considering safety and functionality. • Experiment with different electrical components to create effective alarms. **Science - Electricity:** • Understand how electricity powers electrical devices and circuits. • Investigate conductors and insulators in electrical systems. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their car alarm designs. **Computing - Programming and Control:** • Explore basic programming concepts if applicable to their car alarm design. • Use control devices (if applicable) to activate specific alarm functions.	• Design and plan their own unique bread recipes, considering flavor and texture. • Experiment with different ingredients to create a variety of bread types. **Science - Changes of State:** • Understand the process of bread fermentation and the role of yeast. • Investigate how heat transforms dough into bread during baking. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their bread recipes. **Geography - Cultural Food Traditions:** • Discuss the cultural significance of bread in various countries and regions. • Explore different bread types from around the world.	**Design and Technology - Designing:** • Design and plan their own pencil case designs, considering functionality and aesthetics. • Experiment with different textiles and decorations to create personalized pencil cases. **Art and Design - Creating Artwork:** • Apply creative skills to design and decorate their pencil case patterns. • Experiment with different colors, patterns, and embellishments. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their pencil case designs. **Personal, Social, Health, and Economic Education (PSHE) - Expressive Arts:** • Develop self-confidence and creativity through textile crafts and design.

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Year 5		
Christmas **Mechanical Marvels: Exploring Moving Toys**	**Spring** **Fabulous Furnishings: Exploring Textiles through Cushion Making**	**Summer** **Pizza Perfection: Exploring Culinary Creations**
In the "Mechanical Marvels" project, children will embark on an exciting journey into the world of mechanisms by creating their own moving toys. They will investigate different types of mechanisms, learn about gears and levers, and develop skills in designing and crafting their animated toys. Through hands-on activities and problem-solving challenges, the project will foster creativity, teamwork, and an understanding of how mechanisms bring toys to life.	In the "Fabulous Furnishings" project, children will delve into the captivating world of textiles by creating their own stylish cushions. They will investigate different fabrics, learn about sewing techniques, and develop skills in designing and crafting their cushion masterpieces. Through hands-on activities and creative expression, the project will foster artistic flair, teamwork, and an understanding of how textiles can transform a living space.	In the "Pizza Perfection" project, children will embark on a culinary adventure by learning the art of making delicious pizzas. They will investigate different ingredients, learn about dough fermentation, and develop skills in creating delectable pizza toppings. Through hands-on cooking activities and teamwork, the project will foster creativity, cultural awareness, and an understanding of the science behind pizza making.
Lesson 1: Introduction to Moving Toys • Explore different types of moving toys and their mechanisms. • Discuss the basic features and characteristics of moving toys. • Children sketch and describe their ideal moving toy characters. **Lesson 2: Mechanism Exploration** • Introduce various mechanisms used in moving toys, such as gears and levers. • Discuss how these mechanisms create specific movements and actions. • Children experiment with simple mechanisms to observe their functions. **Lesson 3: Designing Moving Toys** • Children work in groups to design and plan their own moving toy characters.	**Lesson 1: Introduction to Cushion Making** • Explore different types of cushions and their purposes in home decor. • Discuss the importance of textiles and sewing in cushion design. • Children sketch and describe their ideal cushion designs. **Lesson 2: Fabrics and Patterns** • Introduce various fabrics and their properties (e.g., cotton, linen, velvet). • Discuss the suitability of different fabrics for cushion making. • Children touch and examine different fabric swatches. **Lesson 3: Designing Cushion Patterns** • Children work in groups to design and plan their own cushion patterns.	**Day 1: Introduction to Pizza Making** • Explore the history and cultural significance of pizza in different cuisines. • Discuss the basic ingredients and equipment used in pizza making. • Children draw and describe their favourite pizza combinations. **Dough and Fermentation** • Introduce various pizza dough types (e.g., thin crust, thick crust). • Discuss the process of dough fermentation and the role of yeast. • Children explore the dough-making process and **observe fermentation.** **Designing Pizza Recipes** • Children work in groups to design and plan their own pizza recipes.

Design and Technology Curriculum Overview

• Encourage creative and imaginative toy designs, considering different movements and interactions. • They draw their toy designs, indicating the mechanisms they will use. **Lesson 4: Building Toy Mechanisms** • Provide various materials and tools for building toy mechanisms. • Children construct their toy components following their design plans. • They test and adjust the mechanisms to achieve desired movements. **Lesson 5: Assembling Toy Characters** • Children combine the toy components to assemble their moving toy characters. • Discuss the importance of precision and attention to detail in assembling the toys. • They add decorative elements and colours to bring their toy characters to life. **Lesson 6: Toy Showcase** • Children present their moving toys to the class, demonstrating their unique movements and interactions. • Celebrate their engineering and artistic achievements with a moving toy showcase. • Discuss what they have learned about mechanisms, forces, and the joy of creating animated toys. ***Vocabulary*** Mechanisms/ Gears/ Levers/ Interactions/ Forces/ Motion Friction/ Assembling/ Precision ***Links to National Curriculum:*** **Design and Technology - Structures and Mechanisms:** • Investigate different types of mechanisms used in moving toys, such as gears and levers. • Explore how mechanisms can create various movements and actions in toys. **Design and Technology - Designing:**	• Encourage creative and stylish cushion designs, considering colour combinations. • They draw their cushion pattern plans, indicating the fabric choices and decorations. **Lesson 4: Sewing Techniques** • Provide sewing materials and tools for cushion crafting. • Children practice basic sewing techniques, such as stitching and hemming. • Discuss the importance of precision and patience in sewing. **Lesson 5: Decorating and Personalizing** • Introduce different decorations and embellishments for cushion designs (e.g., buttons, ribbons). • Children add decorative elements to their cushions, expressing their artistic flair. • Discuss the importance of personalizing their creations. **Lesson 6: Cushion Showcase** • Children present their cushions to the class, explaining their design choices and creative process. • Celebrate their textile achievements with a cushion showcase or exhibition. • Discuss what they have learned about textiles, sewing, and the joy of designing cozy furnishings. ***Vocabulary*** Textiles/ Fabrics/ Sewing/ Design/ Cushion/ Patterns Embellishments/ Decorations/ Personalizing **Links to National Curriculum:** **Design and Technology - Textiles and Materials:** • Investigate different types of fabrics and their properties (e.g., patterns, textures). • Explore basic sewing techniques, such as stitching and hemming.	• Encourage creative and flavourful pizza designs, considering different toppings. • They draw their pizza recipe plans, indicating the ingredients and quantities. **Day 2: Preparing Pizza Toppings** • Provide a variety of pizza toppings (e.g., vegetables, meats, cheeses). • Children prepare their chosen toppings and discuss flavour combinations. • They experiment with arranging toppings for visual appeal. **Assembling and Baking Pizzas** • Introduce the pizza baking process and the use of ovens. • Children assemble their pizzas following their recipe plans. • Discuss the importance of baking times and temperature. **Pizza Party** • Children celebrate their culinary achievements with a pizza party. • They present their pizzas to the class, explaining their recipe choices. • Discuss what they have learned about food, cultural traditions, and the joy of creating and sharing delicious pizzas. ***Vocabulary*** Pizza/ Ingredients/ Dough/ Fermentation/ Toppings/ Baking Presentation/ Cultural/ flavour combinations/ Party ***Links to National Curriculum:*** **Design and Technology - Cooking and Nutrition:** • Investigate the origins of pizza and its cultural significance in different cuisines. • Identify and use a range of tools and equipment for pizza making. **Design and Technology - Designing:**

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• Design and plan their own moving toy characters, considering motions and interactions. • Experiment with different mechanisms to create a range of movements in their toys. **Science - Forces and Motion:** • Understand how forces, such as push, pull, and gravity, affect the movements of their toys. • Investigate the role of friction in controlling the speed and smoothness of movements. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their toy designs. **Computing - Programming and Control:** • Explore simple programming concepts if applicable to their moving toys. • Use control devices (if applicable) to activate specific movements in their toys. **Art and Design - Creating Artwork:** • Apply artistic skills to design and decorate their toy characters and components. • Experiment with different materials and colours to bring their toys to life.	**Design and Technology - Designing:** • Design and plan their own cushion designs, considering colour schemes and patterns. • Experiment with different textiles and decorations to create personalized cushions. **Art and Design - Creating Artwork:** • Apply creative skills to design and decorate their cushion patterns. • Experiment with different colours, patterns, and embellishments. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their cushion designs. **Personal, Social, Health, and Economic Education (PSHE) - Expressive Arts:** • Develop self-confidence and creativity through textile crafts and design.	• Design and plan their own pizza recipes, considering taste and presentation. • Experiment with different ingredients to create unique pizza combinations. **Science - Changes of State:** • Understand the process of dough fermentation and the role of yeast in pizza crusts. • Investigate how heat transforms dough and toppings during baking. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their pizza recipes. **Geography - Cultural Food Traditions:** • Discuss the cultural significance of pizza in various countries and regions. • Explore different pizza types from around the world.

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Year 6		
Christmas **Electro-Motion: Exploring Electric Powered Vehicles**	**Spring** **Bridge Builders: Exploring Structural Engineering**	**Summer** **Burger Bonanza: Exploring the Art of Gourmet Burgers**
In the "Electro-Motion" project, children will embark on an electrifying journey into the world of electrical systems by creating their own electric-powered vehicles. They will investigate different electrical components, learn about circuitry and energy efficiency, and develop skills in designing and building their eco-friendly vehicles. Through hands-on activities and innovative thinking, the project will foster creativity, teamwork, and an understanding of sustainable transportation solutions.	In the "Bridge Builders" project, children will become aspiring structural engineers, exploring the fascinating world of bridges by creating their own sturdy and innovative bridge designs. They will investigate different bridge types, learn about key engineering principles, and develop skills in designing and constructing bridges. Through hands-on activities and problem-solving challenges, the project will foster creativity, teamwork, and an understanding of the importance of structural integrity in engineering.	In the "Burger Bonanza" project, children will dive into the delicious world of burgers, exploring the art of creating gourmet burger masterpieces. They will investigate different burger components, learn about culinary techniques, and develop skills in designing and crafting mouthwatering burgers. Through hands-on cooking activities and creative experimentation, the project will foster culinary flair, teamwork, and an appreciation for diverse flavours
Lesson 1: Introduction to Electric-Powered Vehicles • Explore the concept of electric-powered vehicles and their role in sustainable transportation. • Discuss the advantages of electric vehicles over conventional vehicles. • Children sketch and describe their ideal electric-powered vehicle prototypes. **Lesson 2: Electrical Components** • Introduce various electrical components used in electric-powered vehicles (e.g., motors, controllers). • Discuss the functions of each component in the vehicle's electrical system. • Children examine and test different electrical parts. **Lesson 3: Designing Electric-Powered Vehicle Prototypes**	**Lesson 1: Introduction to Bridge Engineering** • Explore different types of bridges and their purposes in transportation and infrastructure. • Discuss the basic features and characteristics of bridge structures. • Children sketch and describe their ideal bridge designs. **Lesson 2: Investigating Bridge Types** • Introduce various bridge types (e.g., beam bridges, arch bridges, suspension bridges). • Discuss the structural differences and advantages of each type. • Children examine and discuss real-life examples of famous bridges. **Lesson 3: Designing Bridge Structures**	**Day 1: The Art of Burgers** • Explore the history and cultural significance of burgers around the world. • Discuss the components that make up a gourmet burger. • Children sketch and describe their dream gourmet burger combinations. **Burger Components and Variations** • Introduce various burger components (e.g., patties, buns, toppings). • Discuss the diversity of burger variations and regional specialties. • Children participate in a burger tasting session to explore different flavours. **Designing Gourmet Burger Recipes**

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• Children work in groups to design and plan their own electric-powered vehicle prototypes. • Encourage creative and efficient vehicle designs, considering energy sources. • They draw their vehicle plans, indicating the electrical components and measurements. **Lesson 4: Building Electric-Powered Vehicle Models** • Provide materials and tools for building electric-powered vehicle models. • Children construct their vehicle prototypes, integrating the electrical components. • They test and adjust the vehicle's functionality and energy efficiency. **Lesson 5: Energy Sources and Sustainability** • Introduce different energy sources used in electric-powered vehicles (e.g., batteries, solar panels). • Discuss the importance of sustainable energy solutions for transportation. • Children explore the benefits and challenges of renewable energy use. **Lesson 6: Vehicle Showcase** • Children present their electric-powered vehicle models to the class, explaining their design choices and energy sources. • Celebrate their engineering achievements with an electric-powered vehicle showcase. • Discuss what they have learned about electrical systems, sustainability, and the potential of electric-powered vehicles for a greener future. ***Vocabulary*** Electric-powered vehicles/ Electrical components/ Circuitry Energy efficiency/ Sustainability/ Prototypes/ Renewable energy/ Solar panels/ Efficiency ***Links to National Curriculum:*** **Design and Technology - Electrical Systems:**	• Children work in groups to design and plan their own bridge structures. • Encourage creative and efficient bridge designs, considering materials and shapes. • They draw their bridge plans, indicating the measurements and key features. **Lesson 4: Building Bridge Prototypes** • Provide various materials and tools for building bridge prototypes. • Children construct their bridge models following their design plans. • They test and adjust the structures for stability and load-bearing capacity. **Lesson 5: Load Testing and Improving** • Introduce the concept of load testing in bridge engineering. • Children load their bridge prototypes with weights to measure their strength. • Discuss the results and improvements needed for better structural integrity. **Lesson 6: Bridge Showcase** • Children present their bridge models to the class, explaining their design choices and load-testing results. • Celebrate their engineering achievements with a bridge showcase or exhibition. • Discuss what they have learned about structures, forces, and the excitement of creating functional bridges. ***Vocabulary*** Bridges/ Structural engineering/ Materials/ Load testing Tension/ Compression/ Stability/ Sustainability/ Prototypes ***Links to National Curriculum:*** **Design and Technology - Structures and Mechanisms:** • Investigate different types of bridges and their unique structural features.	• Children work in groups to design and plan their own gourmet burger recipes. • Encourage creative and flavourful burgers, considering various ingredients and seasonings. • They write down their burger recipes, indicating the cooking steps and measurements. **Day 2: Cooking and Assembling Gourmet Burgers** • Provide ingredients and cooking equipment for preparing gourmet burgers. • Children cook their burger patties and assemble their gourmet creations. • They present their burgers for taste-testing and evaluation. **Cultural Burger Extravaganza** • Introduce unique burger creations from different cultural cuisines. • Discuss the ingredients and preparation methods used in these burgers. • Children explore the cultural diversity of burger variations. **Burger Bonanza Showcase** • Children present their gourmet burgers to the class, explaining their design choices and cultural inspirations. • Celebrate their culinary achievements with a Burger Bonanza showcase or tasting event. • Discuss what they have learned about burgers, culinary techniques, cultural traditions, and the joy of creating and savouring gourmet delights. ***Vocabulary*** Burgers/ Gourmet/ Culinary/ Ingredients/ Variations/ Flavors Seasonings/ Texture/ Cultural **Links to National Curriculum:** **Design and Technology - Cooking and Nutrition:** • Investigate the origins of burgers and their cultural significance.

Design and Technology Curriculum Overview

• Investigate different electrical components used in electric-powered vehicles (e.g., motors, batteries). • Explore basic circuitry and the flow of electricity in electrical systems. **Design and Technology - Designing:** • Design and plan their own electric-powered vehicle prototypes, considering efficiency and aesthetics. • Experiment with different materials and technologies to create functional vehicles. **Science - Energy:** • Understand the concept of energy and its importance in electrical systems. • Investigate renewable energy sources used in electric vehicles. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their vehicle designs. **Geography - Sustainable Transport:** • Discuss the impact of electric-powered vehicles on the environment and transportation.	• Explore how various materials and shapes affect bridge stability. **Design and Technology - Designing:** • Design and plan their own bridge structures, considering strength and aesthetics. • Experiment with different bridge designs to create durable and efficient structures. **Science - Forces and Motion:** • Understand how forces, such as tension and compression, act on bridges. • Investigate the impact of weight and load distribution on bridge stability. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their bridge designs. **Geography - Environmental Changes:** • Discuss the impact of bridges on the local environment and communities. • Explore the importance of sustainable engineering practices.	• Identify and use a range of tools and equipment for burger-making. **Design and Technology - Designing:** • Design and plan their own gourmet burger recipes, considering taste and presentation. • Experiment with different ingredients to create unique and flavorful burgers. **Science - Changes of State:** • Understand the cooking process for burger patties and the chemical changes that occur. • Investigate how different cooking methods affect the texture and taste of burgers. **Mathematics - Measurement:** • Use measuring skills to ensure the accuracy and proportions of their burger recipes. **Geography - Cultural Food Traditions:** • Discuss the cultural diversity of burgers and their variations worldwide. • Explore unique burger creations from different countries and regions.