Year R

Early Years - Autumn 1: Food – Research and Design – sandwich filling exploration		
Milestone LO **ELG**: Children will learn to explore a variety of materials (foods) (sensory tests for a range of healthy sandwich fillings)		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Research Inspiration Exploration Function **Food**	Know that… • Food is something that we eat to help us move, grow and have energy. • Different foods do different jobs within our body and we need more of some foods than we do of others • Foods come in all different colours, shapes and sizes • Some foods grow and other foods are made • Different foods have different tastes, smells and textures	Research disciplinary knowledge Know how to… - Use their senses (how a product looks, smells and feels) to explore a range of different foods - To use appropriate language to describe their experiences of different foods e.g. sweet, sour, sticky -Make healthy choices about food and drink
Vocabulary		
Enrichment & wider development		

<table>
<tr><th colspan="3">Early Years - Autumn 2: Food – Research and Design – Designing and making a sandwich</th></tr>
<tr><td colspan="3"><u>Milestone LO</u>
ELG: Children will learn to explore a variety of materials (food) to design and make a healthy sandwich
They will learn to use a range of cutlery.
Development matters: Develop their small motor skills to use knives, forks and spoon competently, safely and confidently.</td></tr>
<tr><td>Concepts</td><td>Substantive Knowledge</td><td>Disciplinary Knowledge</td></tr>
<tr><td>Research
Inspiration
Exploration
Function

Food</td><td>Know that…

• Food is something that we eat to help us move, grow and have energy.
• Different foods do different jobs within our body and we need more of some foods than we do of others
• Foods come in all different colours, shapes and sizes
• Some foods grow and other foods are made
• Different foods have different tastes, smells and textures (Revisit from Autumn 1)

Know that…

• A design is a drawing of your idea to help you plan what it is that you are going to make
• Some foods taste better together than other</td><td>Design disciplinary knowledge

Know how to…
- to select ingredients in order to plan (they could do this by drawing, selecting from pre- cut pictures and assembling, cutting and sticking)
-to use knowledge from research to inform design
- to use their preferences from earlier food tasting to select sandwich fillings

Making disciplinary knowledge

Know how to…

- follow simple hygiene rules, (e.g. washing hands before eating, washing hands before cooking)
- use a range of cutlery</td></tr>
<tr><td>Vocabulary</td><td colspan="2"></td></tr>
<tr><td>Enrichment & wider development</td><td colspan="2"></td></tr>
</table>

Early Years - Spring 1: Make Structures (clay)		
Milestone LO **ELG**: To safely use and explore a variety of materials and tools and techniques, experimenting with texture and form. **Development matters**: Develop their small motor skills so that they can use a range of tools competently, safely and confidently. (rolling pin, blunt knife, forks, cutters etc.)		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Make	Know that… • Know that a material is a matter from which other things can be made • Know that an object is a thing made from one or more materials • Know that a texture is the feel, appearance or consistency of a material/object • Know that the form is the shape of something • Explore the appearance, form and texture of a variety of materials/objects • Pieces of clay can be joined when they are pushed together and smoothed over with a little water,	Make disciplinary knowledge Know how to… - Use a blunt knife to cut clay - Roll clay between their hands - To use a rolling pin to flatten clay - To use cutters to cut simple shapes from clay - To use simple tools to create patterns in clay - To join separate pieces of clay together
Vocabulary		
Enrichment & wider development		

Early Years - Spring 2: Make Structures (junk modelling)		
Milestone LO **ELG**: To safely use and explore a variety of materials and tools and techniques, experimenting with colour, texture and form. **Development matters**: Use one handed tools and equipment for example making snips in paper with scissors (3 and 4 year olds) Develop their small motor skills so that they can use a range of tools competently, safely and confidently. (scissors, sellotape, string etc.)		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Make	Know that… • Know that a material is a matter from which other things can be made • Know that an object is a thing made from one or more materials • Know that a texture is the feel, appearance or consistency of a material/object • Know that the form is the shape of something • Explore the appearance, colour, form and texture of a variety of materials/objects	Make disciplinary knowledge Know how to… - use their fine motor/scissor skills with a variety of materials. - join materials in a variety of ways (temporary and permanent). -join different materials together. - describe the junk model, and how they intend to put it together.
Vocabulary		
Enrichment & wider development		

Early Years - Summer 1: Evaluate a range of exiting transportation devices (toy cars, boats etc)		
Milestone LO **ELG**: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function Development matters:		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Evaluate	Know that… - Evaluate means considering if you or someone else has done something in the best possible way or if something could be improved. - Transport means moving one thing from one place to another - Cars, boats, lorries, planes and trains can all be used as transportation devices - A transportation device has to be able to move effectively - A transportation device has to have enough room to carry the thing that is being transported - A transportation device has to be strong enough to carry the thing that is being transported. - Devices that transport on land need wheels to move	Evaluate disciplinary knowledge Know how to… - give a verbal evaluation of an existing transportation device (toy car, boat etc.) with adult support. -consider what the toy maker might do differently if they were to do it again. -describe their favourite and least favourite part of the device.
Vocabulary		
Enrichment & wider development		

Early Years - Summer 2: Evaluate – Using construction kits to make their own transportation devices and evaluating		
Milestone LO **ELG**: Share their creations, explaining the process they have used **Development matters**: Create collaboratively		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Evaluate	Know that… - Evaluate means considering if you or someone else has done something in the best possible way or if something could be improved. - Transport means moving one thing from one place to another - Cars, boats, lorries, planes and trains can all be used as transportation devices - A transportation device has to be able to move effectively - A transportation device has to have enough room to carry the thing that is being transported	Evaluate disciplinary knowledge Know how to… - give a verbal evaluation of their own transportation device with adult support. -check to see if their device matches their plan. -consider what they would do differently if I was to do it again. -describe their favourite and least favourite part of their device.
Vocabulary		
Enrichment & wider development		

Year 1

Year 1 - Autumn 1: Food (Research) Sampling different fruit with a view to making a healthy fruit salad		
Milestone LO: During this unit the children will learn more about fruits and the role they play within a healthy, balanced diet. They will use their senses to explore a variety of different fruits and develop the appropriate vocabulary. The knowledge gained will allow them to plan and create a healthy fruit based dish (Autumn 2)		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Research **Inspiration** **Exploration** **Function** **Food**	**Know that…** (Revisit from Year R Autumn 1) • Food is something that we eat to help us move, grow and have energy. • Different foods do different jobs within our body and we need more of some foods than we do of others • Foods come in all different colours, shapes and sizes • Some foods grow and other foods are made • Different foods have different tastes, smells and textures Know that…. • There are lots of different fruits, all with different favours, textures and appearance • We should eat at least 5 portions of fruit and veg every day to keep our bodies healthy • A portion is an amount of a particular food • A handful is roughly one portion • We can try different fruits to see if we like them. • Some fruits taste better together than other fruits. • Fruits can be eaten fresh or dried • Dried fruits have had the liquid removed. This changes the appearance, texture and flavour of the fruit. • Dried fruits last longer. • Evaluate means deciding if something has been done in the best way or if anything could be improved. • Some foods taste better together than others	**Know how to…** (Revisit from Year R Autumn 1) • Use their senses (how a product looks, smells and feels) to explore a range of different foods • To use appropriate language to describe their experiences of different foods e.g. sweet, sour, sticky • Make healthy choices about food and drink • follow simple hygiene rules, (e.g. washing hands before eating, washing hands before cooking) • use a range of cutlery Know how to…. • Say which fruits they like/dislike, giving basic reasons for their responses. • Talk about the appearance and texture of fruits using appropriate vocabulary • Create a simple evaluation criteria • Draw or use simple sentences to describe their experiences of tasting fruits. • Describe the difference between dried and fresh fruits. • Identify the most/least popular fruit
Vocabulary		
Enrichment & wider development		

Year 1 - Autumn 2: Food (Design)		
Milestone LO: The children will use the knowledge gained in Autumn 1 to design a healthy fruit based dish that promotes 5 a day.		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Design and Creativity Innovation Making choices (colour, texture, finish, form, materials) Processes Equipment Drawing **Food**	**Know that…** (Revisit from Year R Autumn 1) • Food is something that we eat to help us move, grow and have energy. • Different foods do different jobs within our body and we need more of some foods than we do of others • Foods come in all different colours, shapes and sizes • Some foods grow and other foods are made • Different foods have different tastes, smells and textures (Revisit from Autumn 1) • A design is a drawing of your idea to help you plan what it is that you are going to make Know that….Revisit from Year 1 Autumn 1 • There are lots of different fruits, all with different favours, textures and appearance • We should eat at least 5 portions of fruit and veg every day to keep our bodies healthy • A portion is an amount of a particular food • A handful is roughly one portion • We can try different fruits to see if we like them. • Some fruits taste better together than other fruits. • Fruits can be eaten fresh or dried • Dried fruits have had the liquid removed. This changes the appearance, texture and flavour of the fruit. • Dried fruits last longer. • Evaluate means deciding if something has been done in the best way or if anything could be improved. Some foods taste better together than others Know that…. • Designers draw their ideas and use labels to communicate their thinking	**Know how…** (Revisit from Year R Autumn 1) - to select ingredients in order to plan (they could do this by drawing, selecting from pre- cut pictures and assembling, cutting and sticking) -to use knowledge from research to inform design - to use their preferences from earlier food tasting to select sandwich fillings Know how to… - follow simple hygiene rules, (e.g. washing hands before eating, washing hands before cooking) - use a range of cutlery Know how to… • Create a simple design using a template • Explain their design through the use of discussion (Teacher or TA to scribe) or with simple labels (may be pre prepared)
Vocabulary		
Enrichment & wider development		

<table>
<tr><th colspan="3">Year 1 - Spring 1: Structures (Make)</th></tr>
<tr><td colspan="3"><u>Milestone LO:</u>
The children will practise using a variety of materials/construction kits to make free-standing structures capable of holding a certain amount of weight.</td></tr>
<tr><td>Concepts</td><td>Substantive Knowledge</td><td>Disciplinary Knowledge</td></tr>
<tr><td>Making
Experimenting
Safety
Accuracy

Structures</td><td>Know that… (Revisit from Year R Spring 1)
Know that a material is a matter from which other things can be made
Know that an object is a thing made from one or more materials
Know that a texture is the feel, appearance or consistency of a material/object
Know that the form is the shape of something
Explore the appearance, form and texture of a variety of materials/objects
Know that…
Structures are things that are built for a purpose.
Structures can be large (e.g. buildings and bridges) or small (e.g. chairs and tables).
Freestanding structures are structures that can stand up without being attached to something else.
Freestanding structures need to support their own weight and also the weight of the things/people using them.
So that they can do this, freestanding structures need to be well-designed: strong, rigid and stable.
Examples of freestanding structures include the Burj Khalifa and the Forth Bridge
A structure that is stable is less likely to fall over.
Structures are more stable when they have a wider base.
Buttresses can also make a structure more stable. A buttress is something that is built against a structure to give it more stability. The buttress adds width to the base, making the structure more stable.
A structure that is strong and rigid is able to support more weight.
Some materials are stronger and more rigid (stiffer) than others, e.g. card is stronger and more rigid than paper.
Structures can also be made stronger and more rigid by making sure that parts and materials are properly joined together, e.g. with glue or tape.
Folding and layering (adding an extra layer) of materials can also be used to strengthen and stiffen structures.</td><td>Know how…. (Revisit from Year R Spring 1)
Know how to…
use their fine motor/scissor skills with a variety of materials.
join materials in a variety of ways (temporary and permanent).
join different materials together.
describe the junk model, and how they intend to put it together.
Know how to….
Measure, mark out, cut, shape and join materials with a range of tools.
Discuss how suitable the materials are for their purpose, according to their characteristics.
Explore and build a variety of freestanding structures such as wooden blocks, Lego
Suggest ways in which they could stop a structure falling over
Fold paper or card in different ways to make them stiffer and more stable
Add tape or glue to a structure to make it stiffer and more stable
Add a buttress to a structure</td></tr>
<tr><td>Vocabulary</td><td colspan="2"></td></tr>
<tr><td>Enrichment & wider development</td><td colspan="2"></td></tr>
</table>

Year 1 - Spring 2: Structures (Make)		
Milestone LO: the children will build upon the knowledge gained in Spring 1 to make a free standing bridge, capable of supporting the weight of a toy car.		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Making Experimenting Safety Accuracy Structures	Know that… Revisit from Year 1 Spring 1 • Structures are things that are built for a purpose. • Structures can be large (e.g. buildings and bridges) or small (e.g. chairs and tables). • Freestanding structures are structures that can stand up without being attached to something else. • Freestanding structures need to support their own weight and also the weight of the things/people using them. • So that they can do this, freestanding structures need to be well-designed: strong, rigid and stable. • Examples of freestanding structures include the Burj Khalifa and the Forth Bridge • A structure that is stable is less likely to fall over. • Structures are more stable when they have a wider base. • Buttresses can also make a structure more stable. A buttress is something that is built against a structure to give it more stability. The buttress adds width to the base, making the structure more stable. • A structure that is strong and rigid is able to support more weight. • Some materials are stronger and more rigid (stiffer) than others, e.g. card is stronger and more rigid than paper. • Structures can also be made stronger and more rigid by making sure that parts and materials are properly joined together, e.g. with glue or tape. • Folding and layering (adding an extra layer) of materials can also be used to strengthen and stiffen structures.	Know how… • Measure, mark out, cut, shape and join materials with a range of tools. • Discuss how suitable the materials are for their purpose, according to their characteristics. • Explore and build a variety of freestanding structures such as wooden blocks, Lego • Suggest ways in which they could stop a structure falling over • Fold paper or card in different ways to make them stiffer and more stable • Add tape or glue to a structure to make it stiffer and more stable • Add a buttress to a structure
Vocabulary		
Enrichment & wider development		

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Year 1 - Summer 1: Mechanisms (Evaluate)		
Milestone LO: The children will explore and evaluate a range of wheeled products such as toys and everyday objects. They will explore and evaluate a range of products with wheels and axles with a view to making their own in Summer 2. Summer 2 – The children will make their own wheeled product. They will evaluate their ideas throughout and their products against original criteria.		
Concepts Evaluate Using Criteria Responding to feedback Making comparisons Referring back to design brief Recognising potential for improvement Considering aesthetics **Mechanisms**	**Substantive Knowledge** Know that…(Revisit from Year R Summer 1) • Evaluate means considering if you or someone else has done something in the best possible way or if something could be improved. • Transport means moving one thing from one place to another • Cars, boats, lorries, planes and trains can all be used as transportation devices • A transportation device has to be able to move effectively • A transportation device has to have enough room to carry the thing that is being transported • A transportation device has to be strong enough to carry the thing that is being transported. • Devices that transport on land need wheels to move Know that … • An axle is a rod that enables a wheel to rotate. The wheel can rotate freely on the axle or be fixed to, and turn with, the axle. • An axle holder is the component through which an axle fits and rotates. • The chassis is the frame or base on which a vehicle is built. • Dowels are wooden rods used for making axles to hold wheels	**Disciplinary Knowledge** Know how to… • Explore and evaluate a range of wheeled products such as toys and everyday objects. • Make observations and comment on the number, size, position and methods of fixing wheels and axles. • Use observations to answer questions such as: How do you think the wheels move? How do you think the wheels are fixed on? Why do you think the product has this number of wheels? Why do you think the wheels are round?
Vocabulary		
Enrichment & wider development		

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Year 1 - Summer 2: Mechanisms (Evaluate)		
Milestone LO: The children will make their own wheeled product. They will evaluate their ideas throughout and their products against original criteria		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Evaluate Using Criteria Responding to feedback Making comparisons Referring back to design brief Recognising potential for improvement Considering aesthetics **Mechanisms**	Know that…(Revisit from Year R Summer 1) • Evaluate means considering if you or someone else has done something in the best possible way or if something could be improved. • Transport means moving one thing from one place to another • Cars, boats, lorries, planes and trains can all be used as transportation devices • A transportation device has to be able to move effectively • A transportation device has to have enough room to carry the thing that is being transported • A transportation device has to be strong enough to carry the thing that is being transported. • Devices that transport on land need wheels to move Know that … • An axle is a rod that enables a wheel to rotate. The wheel can rotate freely on the axle or be fixed to, and turn with, the axle. • An axle holder is the component through which an axle fits and rotates. • The chassis is the frame or base on which a vehicle is built. • Dowels are wooden rods used for making axles to hold wheels	Know how to…. (Revisit from Year R Summer 1) • give a verbal evaluation of an existing transportation device (toy car, boat etc.) with adult support. • consider what the vehicle maker might do differently if they were to do it again. • describe their favourite and least favourite part of the device. Know how to… • Think about and collect resources • Select appropriate tools • Reflect on and refine ideas and designs as the process develops • Respond if something does not go as planned • Frequently test the movement and design of the vehicle with and without contents • Reflect and evaluate against the original design criteria
Vocabulary		
Enrichment & wider development		

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Year 2

Year 2 - Autumn 1: Textiles - Research		
Milestone LO Children investigate existing glove puppets. They explore and compare e.g. fabrics, joining techniques, fastenings, finishes. (puppets – hand and finger) Gluing only.		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Research Inspiration Exploration Function **Textiles**	Know that… • Fabric is cloth or other material produced by weaving or knitting fibres • Fibres are thin threads, either natural or man-made • Fray means to unravel or become worn at the edges • A seam is a row of stitches joining two pieces of fabric. • Fabric pieces can be joined together by sewing, pinning, gluing or stapling • Sew means to join pieces of fabric with stitches. • Products made from fabric can be decorated using finishing techniques • Paints, glitter glue, sequins and buttons (finishing techniques) can all be used to decorate fabrics. • Appliqué means to attach a decorative fabric item onto another piece of fabric by gluing and/or sewing. • A glove puppet fits over the hand, and the fingers operate its head and arms. • A glove puppet is a puppet made from fabric that fits on your hand and is worked by your fingers. • Research means to look carefully at something to find out more about it	Know how to… • Generate ideas through talking and drawing based on own experiences of puppets • Exploring and evaluating joining techniques used in existing puppets • Exploring and evaluating materials used to make puppets • Create a criteria to evaluate existing puppets against – asking questions such as: How has the puppet been put together? What fabrics have been used? What has been added? Who has the puppet been made for? How well has this puppet been made? Would I play with it? Why?/Why not?
Vocabulary		
Enrichment & wider development		

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Year 2 - Autumn 2: Textiles - Design		
Milestone LO The children will use their knowledge and skills from Autumn 1 to design and then make a glove puppet. Design criteria developed with the teacher should be used to guide the development of the children's products.		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Research Inspiration Exploration Function **Textiles**	Know that… Revisit from Year 2 Autumn 1 • Fabric is cloth or other material produced by weaving or knitting fibres • Fibres are thin threads, either natural or man-made • Fray means to unravel or become worn at the edges • A seam is a row of stitches joining two pieces of fabric. • Fabric pieces can be joined together by sewing, pinning, gluing or stapling • Sew means to join pieces of fabric with stitches. • Products made from fabric can be decorated using finishing techniques • Paints, glitter glue, sequins and buttons (finishing techniques) can all be used to decorate fabrics. • Appliqué means to attach a decorative fabric item onto another piece of fabric by gluing and/or sewing. • A glove puppet fits over the hand, and the fingers operate its head and arms. • A glove puppet is a puppet made from fabric that fits on your hand and is worked by your fingers. • Research means to look carefully at something to find out more about it	Know how to… Revisit from Year 1 Autumn 1 • Create a simple design using a template • Explain their design through the use of discussion (Teacher or TA to scribe) or with simple labels (may be pre prepared) Know how to… • Draw a simple design of their glove puppet and label the key components • Think of appropriate materials to use for the purpose of making a glove puppet • Using a scaffold and adult support if required, give reasons for their choice of theme, material and finishing technique. • With support, use a template to create a paper mock-up of their puppet • With support, show accuracy when marking out and cutting templates and fabrics. • Use glue carefully to join two pieces of fabric. • Add finishing techniques to their product (e.g. eyes) for effect.
Vocabulary		
Enrichment & wider development		

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Year 2 – Spring 1: Food - Make		
Milestone LO The children will learn more about different types of vegetables such as where they come from and how they contribute to a healthy, balanced diet. They will learn how to prepare vegetables using the methods of cutting, peeling and grating so that in Spring 2, they can follow a recipe to make a healthy vegetable soup.		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Making Experimenting Safety Accuracy **Food**	Know that….Revisit from Year 1 Autumn 1 • There are lots of different fruits, all with different favours, textures and appearance • We should eat at least 5 portions of fruit and veg every day to keep our bodies healthy • A portion is an amount of a particular food • A handful is roughly one portion • We can try different fruits to see if we like them. • Some fruits taste better together than other fruits. • Fruits can be eaten fresh or dried • Dried fruits have had the liquid removed. This changes the appearance, texture and flavour of the fruit. • Dried fruits last longer. • Evaluate means deciding if something has been done in the best way or if anything could be improved. • Some foods taste better together than others Know that…. • All food comes from plants or animals • Vegetables come from different parts of a plant e.g. a potato is a root vegetable, celery is a stem vegetable, tomatoes are fruit etc. • Vegetables are an essential part of the eatwell plate (link to science?) • Vegetables contain vitamin and minerals that keep us healthy and help us to grow. • There are lots of different tools you can use to help you when cooking. Some of them you could use are: vegetable peeler, knife, grater • It is important that you use these tools safely, by only using them when an adult is there to help you and show you how to use them safely by holding them properly etc. • A recipe may list them as tools you need to help you cook something. • *A grater* is a device having a surface covered with holes edged by slightly raised cutting edges, used for grating cheese and other foods • A knife is a device composed of a blade fixed into a handle, used for cutting • A peeler is a device for removing the skin from fruit and vegetables • A recipe is a set of instructions for preparing a particular dish	Know how to… Revisit from Year 1 Autumn 1 • follow simple hygiene rules, (e.g. washing hands before eating, washing hands before cooking) • use a range of cutlery Know how to… • Use a knife safely to cut vegetables • Use a peeler safely to peel vegetables • Use a grater safely to grate vegetables
Vocabulary		
Enrichment & wider development		

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Year 2 - Spring 2: Food - Make		
Milestone LO The children will learn more about different types of vegetables such as where they come from and how they contribute to a healthy, balanced diet. They will learn how to prepare vegetables using the methods of cutting, peeling and grating so that in Spring 2, they can follow a recipe to make a healthy vegetable soup.		
Concepts	**Substantive Knowledge**	**Disciplinary Knowledge**
Making Experimenting Safety Accuracy **Food**	Know that….Revisit from Year 2 Spring 1 • All food comes from plants or animals • Vegetables come from different parts of a plant e.g. a potato is a root vegetable, celery is a stem vegetable, tomatoes are fruit etc. • Vegetables are an essential part of the eatwell plate (link to science?) • Vegetables contain vitamin and minerals that keep us healthy and help us to grow. • There are lots of different tools you can use to help you when cooking. Some of them you could use are: vegetable peeler, knife, grater • It is important that you use these tools safely, by only using them when an adult is there to help you and show you how to use them safely by holding them properly etc. • A recipe may list them as tools you need to help you cook something. • A grater is a device having a surface covered with holes edged by slightly raised cutting edges, used for grating cheese and other foods • A knife is a device composed of a blade fixed into a handle, used for cutting • A peeler is a device for removing the skin from fruit and vegetables • A recipe is a set of instructions for preparing a particular dish	Know how to… Revisit from Year 1 Autumn 1 • follow simple hygiene rules, (e.g. washing hands before eating, washing hands before cooking) • use a range of cutlery Know how to… Revisit from Year 2 Spring 1 • Use a knife safely to cut vegetables • Use a peeler safely to peel vegetables • Use a grater safely to grate vegetables Know how to… (link with maths) • Apply knowledge of hygiene and kitchen safety to make soup • With support, follow a simple soup recipe • Measure out ingredients • Cut, peel and grate vegetables safely
Vocabulary		
Enrichment & wider development		

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<table>
<tr><th colspan="3">Year 2 - Summer 1: Structures - Evaluate</th></tr>
<tr><td colspan="3"><u>Milestone LO</u>
The children will build upon their knowledge of free standing structures in Year 1 by exploring and evaluating existing castles (it would be useful here to have a selection of toy castles as well as pictures of existing, real life castles. The class should come up with a design specification for making a model of a castle, based upon their evaluation of existing castles. In Summer 2 they will apply their knowledge of strengthening and stiffening structures to make and then evaluate their own cardboard castles.</td></tr>
<tr><td>Concepts</td><td>Substantive Knowledge</td><td>Disciplinary Knowledge</td></tr>
<tr><td>Evaluate
Using Criteria
Responding to feedback
Making comparisons
Referring back to design brief
Recognising potential for improvement
Considering aesthetics

Structures</td><td>Know that… Revisit from Year 1 Spring 1
Structures are things that are built for a purpose.
Structures can be large (e.g. buildings and bridges) or small (e.g. chairs and tables).
Freestanding structures are structures that can stand up without being attached to something else.
Freestanding structures need to support their own weight and also the weight of the things/people using them.
So that they can do this, freestanding structures need to be well-designed: strong, rigid and stable.
Examples of freestanding structures include the Burj Khalifa and the Forth Bridge
A structure that is stable is less likely to fall over.
Structures are more stable when they have a wider base.
Buttresses can also make a structure more stable. A buttress is something that is built against a structure to give it more stability. The buttress adds width to the base, making the structure more stable.
A structure that is strong and rigid is able to support more weight.
Some materials are stronger and more rigid (stiffer) than others, e.g. card is stronger and more rigid than paper.
Structures can also be made stronger and more rigid by making sure that parts and materials are properly joined together, e.g. with glue or tape.
Folding and layering (adding an extra layer) of materials can also be used to strengthen and stiffen structures.
Know that…
A castle is made up of multiple 3D shapes
A turret is a small tower on top of a larger tower or at the corner of a building or a wall
A tower is a tall, narrow building that forms part of a castle
A flange joint can be used to connect tubes or pipes.
A slot is a way to connect flat materials together to make a free standing structure
An L brace is a way to connect materials together to make an L shape.
Tabs can be used to make a free-standing wall. They can also be used to connect corners and hold them in place.
Tabs are often used in the corners of packaging boxes. This helps to make them strong to protect the contents.</td><td>Know how to….
Explore and evaluate a range of exiting products such as toys and everyday objects.
Make observations and comment on their stability, joins etc..
Use observations to answer questions
Recognise that a castle is made up of multiple 3D shapes
Draw and label a simple castle that includes the most common features.
Explore a range of existing products related to the class’ design criteria.</td></tr>
<tr><td>Vocabulary</td><td colspan="2"></td></tr>
<tr><td>Enrichment & wider development</td><td colspan="2"></td></tr>
</table>

Year 2 - Summer 2: Structures - Evaluate

Milestone LO

The children will use their knowledge of castles and joining techniques to make a castle out of cardboard (this may require teacher modelling or the use of templates). The class should devise a design specification based upon the evaluation of exiting products in Summer 1. They will then evaluate their products against the design specification.

Concepts	Substantive Knowledge	Disciplinary Knowledge
Evaluate Using Criteria Responding to feedback Making comparisons Referring back to design brief Recognising potential for improvement Considering aesthetics **Structures**	Know that… Revisit from Year 1 Spring 1 • Structures are things that are built for a purpose. • Structures can be large (e.g. buildings and bridges) or small (e.g. chairs and tables). • Freestanding structures are structures that can stand up without being attached to something else. • Freestanding structures need to support their own weight and also the weight of the things/people using them. • So that they can do this, freestanding structures need to be well-designed: strong, rigid and stable. • Examples of freestanding structures include the Burj Khalifa and the Forth Bridge • A structure that is stable is less likely to fall over. • Structures are more stable when they have a wider base. • Buttresses can also make a structure more stable. A buttress is something that is built against a structure to give it more stability. The buttress adds width to the base, making the structure more stable. • A structure that is strong and rigid is able to support more weight. • Some materials are stronger and more rigid (stiffer) than others, e.g. card is stronger and more rigid than paper. • Structures can also be made stronger and more rigid by making sure that parts and materials are properly joined together, e.g. with glue or tape. • Folding and layering (adding an extra layer) of materials can also be used to strengthen and stiffen structures. Know that… Revisit from Year 2 Summer 1 • A castle is made up of multiple 3D shapes • A turret is a small tower on top of a larger tower or at the corner of a building or a wall • A tower is a tall, narrow building that forms part of a castle • A flange joint can be used to connect tubes or pipes. • A slot is a way to connect flat materials together to make a free standing structure • An L brace is a way to connect materials together to make an L shape. • Tabs can be used to make a free-standing wall. They can also be used to connect corners and hold them in place. • Tabs are often used in the corners of packaging boxes. This helps to make them strong to protect the contents.	Know how to… Revisit from Year 1 Summer 2 • Think about and collect resources • Select appropriate tools • Reflect on and refine ideas and designs as the process develops • Respond if something does not go as planned • Frequently test the movement and design of the vehicle with and without contents • Reflect and evaluate against the original design criteria Know how to… • Join materials using a flange joint • Join materials using a slot • Join materials using an L brace • Join materials using tabs • Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original (whole class) design criteria.
Vocabulary		
Enrichment & wider development		