

Subject Leader Planning Grid

Subject: Design Technology

Leader: Miss Percival

Year	I Can Skills - Design	Knowledge	Key Vocabulary
<p><b>1A</b></p> <p><b>Fire</b></p> <p><b>Food - Bread</b></p>	<p>I can think of ideas and recognise characteristics of familiar products.</p> <p>My plans show that, with help, I can put my ideas into practice.</p> <p>I can use pictures and words to describe what I want to do.</p> <p>I can explain what I am making and which tools I am using.</p> <p>I can use tools to cut, peel or grate ingredients safely and hygienically with help.</p> <p>I can use tools to measure or weigh using measuring cups or electronic scales.</p> <p>I can talk about my own and other people's work in simple terms.</p> <p>I can describe how a product works.</p>	<p>Know and understand that clean hands prevent the spread of germs.</p> <p>Bread comes in different forms and tastes differently.</p> <p>Know what the role of different ingredients are in bread and the effects they have on each other.</p> <p>Know why we knead bread.</p>	<p>Cut</p> <p>Measure</p> <p>Weigh</p> <p>Scales</p> <p>Ingredients</p> <p>Recipe</p> <p>Peel</p> <p>Grate</p> <p>Knead</p> <p>Wholemeal</p> <p>Pitta</p> <p>Naan</p> <p>Baguette</p> <p>Grain flour</p>
<p><b>1B</b></p> <p><b>Toy Story</b></p> <p><b>Textiles - Puppets</b></p>	<p>I can think of ideas and recognise characteristics of familiar products.</p> <p>My plans show that, with help, I can put my ideas into practice.</p> <p>I can use pictures and words to describe what I want to do.</p> <p>I can use a number of techniques to enhance my design (such as dyeing, adding sequins or printing).</p> <p>I can explain what I am making and which tools I am using.</p> <p>I can use different tools to join materials.</p> <p>I can use a template to create a design.</p> <p>I can select appropriate tools to join materials using running stitch, with support.</p> <p>I can select appropriate tools to join materials using running stitch.</p> <p>I can talk about my own and other people's work in simple terms.</p> <p>I can describe how a product works.</p>	<p>Know which are the best ways to combine materials.</p> <p>Know what a puppet is, what forms they take and how they work.</p>	<p>Needle</p> <p>Wool</p> <p>Decorating</p> <p>Textiles</p> <p>Thread</p> <p>Stitch</p> <p>Marionette</p> <p>Rod</p> <p>Hand</p> <p>Shadow</p>
<p><b>1C</b></p> <p><b>Fighting Fit</b></p> <p><b>Food – Fruit Kebabs</b></p>	<p>I can think of ideas and recognise characteristics of familiar products.</p> <p>My plans show that, with help, I can put my ideas into practice.</p> <p>I can use pictures and words to describe what I want to do.</p> <p>I can explain what I am making and which tools I am using.</p> <p>I can use tools to cut, peel or grate ingredients safely and hygienically with help.</p> <p>I can use tools to measure or weigh using measuring cups or electronic scales.</p> <p>I can talk about my own and other people's work in simple terms.</p> <p>I can describe how a product works.</p>	<p>Know and understand that clean hands prevent the spread of germs.</p> <p>Know the names of different types of fruit and their tastes.</p> <p>Know where different fruits originate.</p> <p>Know what using tools safely looks like.</p> <p>Know how to draw/construct a block graph.</p> <p>Know the purpose of a block graph.</p>	<p>Cut</p> <p>Measure</p> <p>Weigh</p> <p>Scales</p> <p>Chop</p> <p>Ingredients</p> <p>Recipe</p> <p>Peel</p> <p>Skewer</p> <p>Grease-proof paper</p> <p>Kitchen foil</p> <p>Knife</p> <p>Chopping board</p> <p>Preparation</p> <p>Assemble</p>

<p><b>2A</b> <b>Once Upon a Time</b></p> <p><b>Mechanisms – Pop-up Books</b></p>	<p>I can think of ideas and plan what to do next, based on my experience of working with materials and components.</p> <p>I can use models, pictures and words to describe my designs.</p> <p>I can use cutting tools to safely cut materials.</p> <p>I can select appropriate techniques to join materials, such as gluing, hinges or combining materials to strengthen.</p> <p>I can select appropriate resources in order to combine materials.</p> <p>I can use tools and techniques to combine materials effectively, such as drilling, gluing and nailing.</p> <p>I can assemble materials to create a product with levers.</p> <p>I can recognise what I have done well as my work progresses, and suggest things I could do better in the future.</p>	<p>Begin to know that the design process is critical.</p> <p>Know procedures to use tools safely.</p> <p>Know that there are different joining techniques.</p> <p>Know which one works the best.</p> <p>Know what a lever is.</p> <p>Know that a lever can make work easier.</p>	<p>Gluing Hinge Mechanism Drilling Screwing Folds Levers Cutting Shaping Tearing Curling Strengthen Winding Pulley</p>
<p><b>2B</b> <b>Jungle Book</b></p> <p><b>Zoo enclosures - structures</b></p>	<p>I can think of ideas and plan what to do next, based on my experience of working with materials and components.</p> <p>I can use models, pictures and words to describe my designs.</p> <p>I can recognise what I have done well as my work progresses, and suggest things I could do better in the future.</p> <p>I can use cutting tools to safely cut materials.</p> <p>I can use cutting tools to accurately cut materials (within the perimeter of the materials).</p> <p>I can select appropriate techniques to join materials, such as tearing, cutting, folding and curling.</p> <p>I can select appropriate resources in order to combine materials.</p> <p>I can use tools and techniques to combine materials effectively, such as drilling, gluing and nailing.</p>	<p>Know how to measure to the nearest centimetre.</p> <p>Know that there are different cutting techniques.</p> <p>Know which one works the best.</p> <p>Know different shaping techniques.</p> <p>Know where, when and how zoo enclosures are used for different animals.</p>	<p>Joining Winding Gluing Drilling Screwing Folds Levers</p> <p>Tenon saw Hacksaw Bench hook Clamp Dowel</p>
<p><b>2C</b> <b>All at Sea</b></p> <p><b>Lighthouses – mechanical systems</b></p>	<p>I can think of ideas and plan what to do next, based on my experience of working with materials and components.</p> <p>I can use models, pictures and words to describe my designs.</p> <p>I can use cutting tools to safely cut materials.</p> <p>I can select appropriate techniques to join materials, such as gluing, hinges or combining materials to strengthen.</p> <p>I can select appropriate resources in order to combine materials.</p> <p>I can use tools and techniques to combine materials effectively, such as drilling, gluing and nailing.</p> <p>I can assemble materials to create a product with wheels and winding mechanisms.</p> <p>I can recognise what I have done well as my work progresses, and suggest things I could do better in the future.</p>	<p>Mechanical Systems – Lighthouses</p> <p>Know what lighthouses are for and how they are used.</p> <p>Know some of the history of lighthouses</p> <p>Know the effect on winding when you change the size of the wheel</p>	

**By the end of Key Stage One:**

**Design**

I can design purposeful, functional, appealing products for myself and other users based on design criteria

I can generate, develop, model and communicate my ideas through talking, drawing, templates, mock-ups and, where appropriate, ICT

**Make**

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

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

**Evaluate**

I can explore and evaluate a range of existing products

I can evaluate my ideas and products against design criteria

**Technical knowledge**

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

I can explore and use mechanisms [for example, levers, sliders, wheels and axles], in my products.

**Cooking and Nutrition**

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

I understand where food comes from.

<p><b>3A</b> Industrial Revolution</p> <p><b>Food - Pasties</b></p>	<p><b><u>Exploring and developing</u></b> I can explore ideas and collect visual and other information for my work.</p> <p><b><u>Investigating and making</u></b> I can investigate visual and tactile qualities in materials and processes. I can design and make images. I can select appropriate use tools to cut, peel or grate ingredients safely and hygienically. I can measure or weigh using electronic scales. I can prepare ingredients hygienically using appropriate utensils. I can measure and mark out to the nearest gram. I can follow a recipe.</p> <p><b><u>Evaluating and developing</u></b> I can comment on similarities and differences between my own and others' work. I can identify what skills I have used. I can identify how I can improve my own work.</p>	<p>Origin of pasties. What is a pasty is. Know how to measure in grams. Have knowledge of a healthy and varied diet. What a balanced diet is?</p>	<p>Cut Peel Grate Ingredients Measure Weigh Prepare</p> <p><b>Hygiene</b> Electronic scales Gram <b>Utensils</b> Crimp</p>
<p><b>3B</b> Tomb Raiders</p> <p>Mechanical Systems – Pneumatics - Sarcophagus</p>	<p><b><u>Exploring and developing</u></b> I can explore ideas and collect visual and other information for my work</p> <p><b><u>Investigating and making</u></b> I can investigate visual and tactile qualities in materials and processes. I can design and make images. I can cut materials accurately and safely by selecting appropriate tools. I can select appropriate joining techniques.</p>	<p>Know what a pneumatic system is and how it can be used. Know the effect of different size syringes has on speed and height of movement.</p>	<p>Accurate Appropriate Design Purpose <b>Filing</b> <b>Sanding</b></p> <p><b>Gears</b> <b>Architect</b> <b>Pneumatics</b> <b>Mechanism</b> <b>Syringe</b></p>

	<p>I can develop a range of practical skills to create products (such as cutting, nailing, gluing, filling and sanding).</p> <p>I can use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).</p> <p><b>Evaluating and developing</b></p> <p>I can comment on similarities and differences between my own and others' work.</p> <p>I can identify what skills I have used.</p> <p>I can identify how I can improve my own work.</p>		
<p><b>3C</b></p> <p><b>Rotten Romans</b></p> <p><b>Catapult - Mechanisms with pulleys and levers</b></p>	<p><b>Exploring and developing</b></p> <p>I can explore ideas and collect visual and other information for my work</p> <p><b>Investigating and making</b></p> <p>I can investigate visual and tactile qualities in materials and processes.</p> <p>I can design and make images.</p> <p>I can cut materials accurately and safely by selecting appropriate tools.</p> <p>I can select appropriate joining techniques.</p> <p>I can develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).</p> <p><b>Evaluating and developing</b></p> <p>I can comment on similarities and differences between my own and others' work.</p> <p>I can identify what skills I have used.</p> <p>I can identify how I can improve my own work.</p>	<p>Know what a catapult is and how it is used.</p> <p>Know the different types of catapult designs.</p> <p>Know how a catapult works.</p> <p>Know the effect of tension has on the speed and distance of movement.</p>	<p>Trajectory</p> <p>Frame</p> <p>Catapult</p> <p>Pivot</p> <p>Cantilever spring</p> <p>Pulleys</p> <p>levers</p>

<p><b>4A</b></p> <p><b>Groovy Greeks</b></p> <p><b>Textiles Greek sandals/shoes</b></p>	<p><b>Exploring and developing</b></p> <p>I can explore ideas and collect visual and other information for my work.</p> <p><b>Investigating and making</b></p> <p>I can investigate visual and tactile qualities in materials.</p> <p>I can choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).</p> <p>I can design and make images for different purposes.</p> <p>I can create objects (such as a shoe) that employ a seam allowance.</p> <p>I can join textiles with a combination of stitching techniques (cross stitch and running stitch.)</p> <p>I can create suitable visual and tactile effects in decoration of textiles. (Such as a soft decoration for comfort on a cushion).</p> <p><b>Evaluating and developing</b></p> <p>I can refine work and techniques as work progresses.</p> <p>I can comment on similarities and differences between my own and others' work.</p> <p>I can identify what skills I have used.</p> <p>I can identify what was difficult and why?</p>	<p>Know about different shoes and different purposes</p> <p>Know which material is best for a flip-flop.</p> <p>Know different constituent parts of a flip-flop and its purpose.</p> <p>Know joining techniques including running stitch.</p> <p>Know how patterns can be created with cross-stitch.</p> <p>Know that prototypes can help inform design decisions.</p>	<p>Needle</p> <p>Decorating</p> <p>Textiles</p> <p>Thread</p> <p>Stitch</p> <p>Glue</p> <p>Sew</p> <p>Cut</p> <p>Measure</p> <p>Join</p> <p>Seam</p> <p>Prototype</p> <p>Durable</p> <p>Refine</p> <p>Running stitch</p> <p>Cross stitch</p> <p>Pattern</p>
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	I can identify how I can improve my own work.		
<b>4B</b> <b>Amazing Aztecs</b>  <b>Structures - Aztec Pyramids</b>	<p><b><u>Exploring and developing</u></b> I can explore ideas and collect visual and other information for my work</p> <p><b><u>Investigating and making</u></b> I can investigate visual and tactile qualities in materials and processes. I can demonstrate my ideas and meanings, and design and make images for different purposes. I can cut materials accurately and safely by selecting appropriate tools. I can select appropriate joining techniques. I can develop a range of practical skills to create products (such as cutting, gluing). I can use nets for prototypes.</p> <p><b><u>Evaluating and developing</u></b> I can refine work and techniques as work progresses. I can comment on similarities and differences between my own and others' work. I can identify what skills I have used. I can identify what was difficult and why? I can identify how I can improve my own work.</p>	<p>Know pyramids exist throughout the world and what they are for (purpose). Know about square based pyramids (3D shapes) and their properties (including nets). Know measures to nearest mm. Know how to estimate. Know different ways to join paper materials.</p>	<p>Mm Cm Measure Estimate Join purpose Cutting Shaping Joining Strengthen Net Prototype Sturdy Pyramid Layer 3D</p>
<b>4C</b> <b>On Safari</b>  <b>Safari Cars – Electrical systems</b>	<p><b><u>Exploring and developing</u></b> I can explore ideas and collect visual and other information for my work.</p> <p><b><u>Investigating and making</u></b> I can investigate visual and tactile qualities in materials and processes. I can demonstrate my ideas and meanings, and design and make images for different purposes. I can cut materials accurately and safely by selecting appropriate tools. I can select appropriate joining techniques. I can develop a range of practical skills to create products (such as cutting, gluing, sawing, filling and sanding). I can diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage). I can create series and parallel circuits.</p> <p><b><u>Evaluating and developing</u></b> I can refine work and techniques as work progresses. I can comment on similarities and differences between my own and others' work. I can identify what skills I have used. I can identify what was difficult and why? I can identify how I can improve my own work.</p>	<p>Know how to use a circuit. Know the components of a car – axle, wheel Know what the job of each electrical component. Know why vehicles are used on safari. Know adaptations of these vehicles (camouflage) Know a variety of joining techniques.</p>	<p>Select Rotate Move Join Cut Measure Connection Refine camouflage Axle Mechanism Adapt Bodywork</p> <p>Wheel Battery Terminal Diagnose Bulb Wire Motor Connection Circuit Motor Switch Safari lamp</p>

<b>5A</b>	<b><u>Exploring and developing</u></b>	Know what a flapjack is.	Storage
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<p><b>Food – flapjacks</b></p>	<p>I understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.  I can explore different food products, collect ideas and information to help me develop my work.  I can use my ideas to develop my work, taking into account the purpose.</p> <p><b><u>Investigating and making</u></b>  I can use my knowledge and processes to communicate ideas and meanings.  I can make images and artefacts, combining and organising visual and tactile qualities to suit my intentions.  I can prepare ingredients hygienically using appropriate utensils.  I understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms).  I can assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).  I can measure accurately and calculate ratios of ingredients to scale up or down from a recipe.  I can demonstrate a range of baking and cooking techniques.  I can create and refine recipes, including ingredients, methods, cooking times and temperatures.  I can select appropriate use tools to cut, peel or grate ingredients safely and hygienically.</p> <p><b><u>Evaluating and developing</u></b>  I can analyse and comment on ideas, methods and approaches used in my own and others’ work, relating these to its context.  I can adapt and refine my work to reflect my own view of its purpose and meaning.  I can compare and comment on ideas, methods and approaches used in my own and others’ work, relating these to the context in which the work was made.</p> <p><b><u>ICT link -</u></b>  I can program a computer to control a product.  I can program a computer to monitor changes in the environment and control their products.</p>	<p>Know constituents ingredients.  Know that there are different types of flapjack  Know what makes a good flapjack and that this is subjective.  Know how to measure accurately to nearest gram.  Know that cooking changes materials.  Understand the constituent parts of a recipe.  Know how to create a hygienic environment.  Know how to scale ingredients to make more or less.</p>	<p>Handling  Ingredients  Recipe  Hygiene  Flapjack  Product  Scale  utensils  Oven  Hob  Temperature  Calculate Ratio  Proportion  Micro-organisms  Duration  Consistency  combine</p>
<p><b>5B Vicious Vikings</b></p> <p>Construction - Viking Long Boats</p>	<p><b><u>Exploring and developing</u></b>  I can explore ideas and collect visual and other information to help me develop my work.  I can use my ideas to develop my work, taking into account the purpose.</p> <p><b><u>Investigating and making</u></b>  I can use my knowledge and understanding of materials and processes to communicate design, ideas and meanings.  I can make images and artefacts, combining and organising visual and tactile qualities to suit my intentions.  I can cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape).</p> <p><b><u>Evaluating and developing</u></b>  I can analyse and comment on ideas, methods and approaches used in my own and others’ work, relating these to its context.  I can adapt and refine my work to reflect my own view of its purpose and meaning.</p>	<p>Know what Viking Long boats were and how they worked.  Know constituent parts of primitive boats.  Know how cross-sectional drawings and prototypes inform and refine final design.  Know efficient ways to join precisely.  Know about best materials to use.  Know how the aesthetics of a Viking boat has symbolic significance.</p>	<p>Precision  Refine  Prototype  Cross-section  Symbolic  Watertight  Repellent  Impermeabl  e  Viking</p> <p>Longboat  Hull  Fore/bow  Aft  Mast  Deck  Sail  Figurehead  Duable</p>

	I can compare and comment on ideas, methods and approaches used in my own and others' work, relating these to the context in which the work was made.		
<b>5C Survival</b>  Clockwork – <b>Pulleys, Gears &amp; levers</b>	<p><b><u>Exploring and developing</u></b> I can explore ideas and collect visual and other information to help me develop my work. I can use my ideas to develop my work, taking into account the purpose.</p> <p><b><u>Investigating and making</u></b> I can use my knowledge and understanding of materials and processes to communicate ideas and meanings. I can make images and artefacts, combining and organising visual and tactile qualities to suit my intentions. I can design with the user in mind, motivated by the service a product will offer (rather than simply for profit). I can ensure products have a high quality finish, using art skills where appropriate. I can use prototypes/cross-sectional diagrams designs to represent designs.</p> <p><b><u>Evaluating and developing</u></b> I can analyse and comment on ideas, methods and approaches used in my own and others' work, relating these to its context. I can adapt and refine my work to reflect my own view of its purpose and meaning. I can compare and comment on ideas, methods and approaches used in my own and others' work, relating these to the context in which the work was made.</p>	<p>Know what cams are and how they work. Know what gears are and how they work. Know when and where they are used and how. Planning tools – design boards, graphic organisers to show cause and effect. Use cross-sectional drawings to show cause and effect.</p>	<p>Clockwork Cross section Graphic Design Join Cut measure Cause and effect Mechanism Cam Gear Axle</p>

<b>6A Into the woods</b>	No DT in this mini topic		
<b>6B World War Two Textiles - Make do and mend</b>	<p><b><u>Exploring and developing</u></b> I can explore ideas and collect visual and other information to help me develop my work I can use my ideas to develop my work, taking into account the purpose.</p> <p><b><u>Investigating and making</u></b> I can use my knowledge and understanding of materials and processes to communicate ideas and meanings I can make images and artefacts, combining and organising visual and tactile qualities to suit my intentions I can manipulate materials and processes to communicate ideas and meanings and make images and artefacts, matching visual and tactile qualities to my intentions. I can create objects that employ a seam allowance. I can join textiles with a combination of stitching techniques (cross, back, over and running stitch.) I can create suitable visual and tactile effects in decoration of textiles. (Such as a soft decoration for comfort on a cushion).</p> <p><b><u>Evaluating and developing</u></b></p>	<p>Know backstitch, cross, running, overstitch. Know how to cast on/off. Know how pattern pieces fit together to create a product. Know what the Make Do and Mend Campaign is and its purpose Know that different materials can be used to stuff cushions.</p>	<p>Seam Prototype Durable Refine Fabric Denim Cotton Stuff Cast on/off Pattern pieces Running stitch Cross stitch Pattern Back stitch Over stitch</p>

	<p>I can compare and comment on ideas, methods and approaches used in my own and others' work, relating these to the context in which the work was made I can adapt and improve my work to realise my own intentions.</p> <p>I can evaluate the design of products so as to suggest improvements to the user experience.</p> <p>I can analyse and comment on ideas, methods and approaches used in my own and others' work, relating these to its context.</p>		<p>Refine consolidate</p>
<p><b>6C</b> <b>Origin of the Species</b>  <b>Insect and bird houses</b></p>	<p><b><u>Exploring and developing</u></b> I can explore ideas and collect visual and other information to help me develop my work I can use my ideas to develop my work, taking into account the purpose.</p> <p><b><u>Investigating and making</u></b> I can use my knowledge and understanding of materials and processes to communicate ideas and meanings I can make images and artefacts, combining and organising visual and tactile qualities to suit my intentions I can manipulate materials and processes to communicate ideas and meanings and make images and artefacts, matching visual and tactile qualities to my intentions. I can cut materials accurately and safely by selecting appropriate tools. I can select appropriate joining techniques, fit for purpose. I can improve a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).</p> <p><b><u>Evaluating and developing</u></b> I can compare and comment on ideas, methods and approaches used in my own and others' work, relating these to the context in which the work was made I can adapt and improve my work to realise my own intentions. I can evaluate the design of products so as to suggest improvements to the user experience. I can analyse and comment on ideas, methods and approaches used in my own and others' work, relating these to its context.</p>	<p>Know what attracts animals to gardens and what they eat Know the animals need for shelter and their habitat requirements Know what materials are sustainable and animal-friendly. Know what products are already on the market and why are they are successful Know how to join different materials: wire, plastic, drills, hammers, hack-saw, mitre and a triangle join Know how to measure accurately</p>	<p>Join Glue Saw Attach Hammer Drill Wire Conservation Sustainable Durable Environmentally friendly Animal friendly Chicken wire</p>

**By the end of Key Stage Two:**

**Design**

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

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

**Make**

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

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

**Evaluate**

I can investigate and analyse a range of existing products

I can evaluate my ideas and products against my own design criteria and consider the views of others to improve their work

I can understand how key events and individuals in design and technology have helped shape the world

**Technical knowledge**

I can apply my understanding of how to strengthen, stiffen and reinforce more complex structures

I understand and can use mechanical systems in my products [for example, gears, pulleys, cams, levers and linkages]

I understand and can use electrical systems in my products [for example, series circuits incorporating switches, bulbs, buzzers and motors]

I can apply my understanding of computing to program, monitor and control my products.

**Cooking and Nutrition**

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

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

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

Keyword colour Key:

Clear – Familiar words

Yellow – Teaching words

Green – Technical words topic related