Previous learning:

- Year R – junk modelling, cut and stick, cutting skills, animal shelter making, den making, fixing emergency vehicles.

National curriculum:

TECHNICAL KNOWLEDGE
Build structures, exploring how they can be made stronger, stiffer and more stable.
Explore and use mechanisms for example levers, sliders, wheels and axles in their products.

DESIGN
Design purposeful, functional, appealing products for themselves and others based on design criteria.
Generate, develop, model and communicate their ideas through talking, drawing, templates, mock ups and where appropriate, ICT.

MAKE
Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing.
Select from and use a wide range of materials and components, including construction materials, textiles and ingredients according to their characteristics.

EVALUATE
Explore and evaluate a range of existing products
Evaluate their ideas and products against design criteria

Vocabulary:

Design, make, knowledge, evaluate, structures, mechanisms, levers, sliders, wheels, axles, joining, shaping, finishing, construction, facilities, mock ups, force, motion, swing, frame, roundabout, zip wire, climbing frame, monkey bars.

Snapshot overview- Playgrounds

Technical knowledge

Children to have experience of swings, pulleys, roundabouts and seesaws. Moving them to make them work and then looking at smaller version mock ups to see how they can recreate them. Children then to practise making and joining art straws/ pipe cleaners/ split pins

Design

Children to design their own playground taking into account of the equipment that we saw when we went to the playground.

Make

Children to create their playgrounds using the joints and materials that they experimented with during design.
Children to evaluate their own work describing how they could improve it.

Evaluate and improve

Children to look at each other's play grounds and then go back to their own and make any changes or adaptions to improve it.

DT Medium Term Planning

Year Group: 1 **Term**: **Topic:** DT

	Learning Objective	**Input (including key questions and vocabulary)**	**Differentiation**	**Key Learning**

Technical Knowledge	I can build a structure exploring how it can be made strong, stiff and stable.	Recap what DT is and why it is important. Show children different pictures of playgrounds Briefly Consider the various items of playground equipment. We will be making a playground. Discuss what a playground has – climbing frame, see saw, roundabout, swings, monkey bars, wobbly bridge and show pictures of these. Show chn pipe cleaners, straws, cardboard, paper, string, split pins, glue, cello tape, masking tape and discuss – how could we make the playground items out of these resources? Send chn to mixed ability tables with these resources to explore what they can/can't make with them – 10 mins Come back to carpet and feedback – what did the straws do /what are they useful for making? What could make a swing and why etc. Model making a join with the pipe cleaner inside the straw – the pipe cleaner creates the bend. Then model making the join with cello tape and two straws joining and finally model blue tac to join two straws together. Chn to go have a go at different joins they can make based on discussion. Feedback as a class – what made the strongest joins, what worked well, would different joins work better for different playground items? Plenary: T to model making a pivot/lever see saw referring back to moving pictures earlier in year 1. Encourage chn to join in with discussions on how to make this	Support children with poor motor control with fixing and attaching. When adults are lapping discuss – what makes the strongest join and why?	Children to say what a playground has in it. Children to experiment with different materials and resources. Children to use different resources and materials to make joins.

Technical knowledge	I can build a structure exploring how it can be made strong, stiff and stable.	Recap yesterday's learning. Explain to class now they have the joining techniques they need to apply this to making specific parts of the playground. Teach - show chn several different ways to make a frame for a swing/ climbing frame - show different models. Children discuss and explain the effects of different methods. Teach how to join materials to make a frame. Discuss why a frame is used. What makes a strong shape? Children to analyse and explain the effectiveness of this join. Show chn how to strengthen materials. Show them how to make the frames more stable and stand greater loads, e.g by adding kit parts or materials such a card or supports. Show the children how a seat could be made e.g. from a small cardboard box or milk lid. Show how the seat can be made to swing by attaching it to the frame using string, wool, thread or hooked pipe cleaners. Chn to then go and explore making a swing/climbing frame based on discussions above. Teach children how to make a bridge for the wobbly bridge or monkey bars. Children then to have a go at making a bridge and monkey bars based on T model. Encourage them to think about making it stronger by thinking about the frames and how to use that to create the bridge. Teach children how to use a pivot to create a roundabout or seesaw. Remind chn they have already made this in year 1 for moving pictures so know how to do this.	Support children with poor motor control with fixing and attaching. Ta to take photos throughout so that chn can refer to these photos when making their final product	Children to be able to make a frame to be used as a base for different parts of the playground. Children to make a bridge and/or monkey bars using the T model. Children to make a pivot to create an roundabout and/or seesaw.

Design	I can design a playground based on a design criteria	Recap previous learning. We need to create a design criteria for a playground. What criteria do we need to include (must have at least three of the following: Wobbly bridge, climbing frame, roundabout, Monkey bars, swing, seesaw). Create this list as a class and display on the working wall. Discuss that we will be creating a playground. Share pictures of a playground - discuss on this picture what you would make. Why? What effect would this have? (google images) Teacher to model the process of design. Model looking at the playground pictures and drawing own background design e.g. the floor patterns of the playground, the flowers and fences etc. Model looking at the 3D structures and choosing which ones to include and which ones will move. Model drawing the 3D structures of the playground (Wobbly bridge, climbing frame, roundabout, Monkey bars, swing, seesaw) and labelling them technique and material needed. Explain to children they will now design their product on a3 card, explain that this will be the actual size of their finished piece so they need to think about the sizing of the pictures/structures and filling the page. Think about spacing of equipment like the playground pictures show. Chn to go off and design their playground and label technique and material needed to make final product (e.g. blue tac for the join, straw for the swing structure etc.)	Adults to lap and feedback as required	Children to contribute to a class design criteria. Children to design their playground based on design criteria.

Make	I can make a playground model selecting a range of tools, materials and equipment.	Take plan from yesterday and discuss thought process and labels. Model making the background first and using the other materials (e.g. pipe cleaners, straw) from the plan to create the 3D structures. Model referring back to plan to get the correct resources and making sure the sizing is correct. Model making the playground giving a running commentary of what you are doing and why (materials, techniques, sizing, style, strengthening aspects etc.) Chn then go and use design to make their own playgrounds. Adults lap and feedback – if chn start making something and realise it isn't going to work/isn't strong enough have a conversation with chn – this isn't as strong as you expected so what could you add/change/adapt to make it better. Encourage chn to try a different way to make the structure work.	Support children with poor motor control with fixing and attaching. Adults lap and feedback – if chn start making something and realise it isn't going to work/isn't strong enough have a conversation with chn – this isn't as strong as you expected so what could you add/change/adapt to make it better.	Children to use a variety of resources to create their product. Children to include a T model and pivot in their final product. Children's product to use accurate sizing.

Evaluate	I can evaluate my product.	Look back at what was made yesterday, Model evaluating own product based on final design using the following questions to encourage a class discussion Do the playground structures work? Were the structures strong enough? Is the moving part effective? Did you have to change anything to your original design – what and why? What would you change next time? Model writing evaluation statement comparing the design to the final product based on the class discussion questions. e.g. My final product matches my design because _____		Children to evaluate their product based on design criteria. Children to discuss what they did well in their product. Children to say how their product matches the design.

This will take approximately 4 sessions.

Impact:

To be able to use different joining techniques for a specific design criteria

To be able to create a design following given criteria

To be able to create a final product using design criteria

To be able to evaluate a final product against design criteria

To be able to evaluate my work as I go and make amendments as needed