



DT Medium Term Plan

Year	1 and 2	Term:	Autumn 2	Unit:	Fire! Fire! (DT- Pop-ups and Simple Levers - Picture with moving parts)
Big Question:	How do we use levers to create a Christmas card with moving parts?				
Prior Substantive Knowledge	Investigate I can explore different materials freely, in order to develop my ideas about how to use them and what to make. Design Develop my own ideas and then decide which materials to use to express them. Make - Can create collaboratively, sharing ideas, resources and skills. Evaluate - Can return to and build on my previous learning, refine my ideas and developing my ability to represent them. - Can share creations, talk about process and evaluate my work.			Cross-curricular	Art – drawing and use of colour, RE - Christmas
				Key Vocab	Investigate, design, make, evaluate, lever, movement, fastening, pop-up, purpose, product, cut, attach, split pin, hole punch, pull, push, slide, score, tab, 2D plane, materials, pivot, linkage, mechanism, slider
				Essential vocab	Investigate, design, make, evaluate, lever, movement, fastening, slider
Substantive Knowledge:				Disciplinary Knowledge (Think like)	
Declarative Knowledge (Know what)		Procedural Knowledge (Know how)			
- Experiment with levers and sliders to find different ways of making things move in a 2D plane.		Investigate - Explore existing products and investigate how they have been made. - Talk about their design as they develop and identify good and bad points. Design - Use pictures and words to convey what they want to design/make. - Propose more than one idea for their product. - Select appropriate technique explaining: First... Next... Last.... - Explore ideas by rearranging materials. - Select pictures to help develop ideas. - Use drawings to record ideas as they are developed. - Add notes to drawings to help explanations. Make - Discuss their work as it progresses. - Select materials from a limited range that will meet the design criteria. - Select and name the tools needed to work the materials. - Explain what they are making. - Explain which materials they are using and why.			
				- Join appropriately for different materials and situations e.g. glue, tape. - Mark out materials to be cut using a template. - Use a glue gun with close supervision.	



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	- Describe what they need to do next. Evaluate - Say what they like and do not like about items they have made and attempt to say why. - Discuss how closely their finished product meets their design criteria and how well it meets the needs of the user.	
Teacher Knowledge	Levers and sliders are used in cards and products to create a movement effect. <u>Mechanism</u> A mechanism is where materials or components are connected to make movement. <u>Pivot</u> A fixed point from where movement happens. <u>Levers, Sliders and Pop-Ups</u> A slider can move from side to side or up and down in a straight line. A lever moves around a pivot. It can move on a curved motion. <u>Materials and Tools</u> Materials are the matter from which a thing is or can be made. Tools are the device or implement, especially one held in the hand, used to carry out a particular function. In order to make our product (Christmas card with moving parts) we will need to use various materials such as glue, card, scissors, tape, split pins, decorative materials, etc. The tools we might use include scissors, hole punches, scoring tools, glue spreaders, hot glue gun, etc <u>Safety</u> When we use some tools we need to be extra careful in order to be safe. Dangerous tools may include hot glue guns, scissors, split pins and scoring tools. <u>Iterative Process</u> The <i>iterative design</i> process is revisited and reflected upon at regular points in order to improve and refine design ideas to ensure they best meet the needs of the final user. Whenever we create a product in Design Technology we follow an iterative process of Investigate-Design-Make-Evaluate. Investigating means looking at other similar products before starting your design. Evaluating means looking at your products to decide what you like and don't like, what worked well and what you might change next time.	FRUITS Faith – Explore links to the Christmas story and RE unit Relationships – Discussions around the end recipients and how we can make family and friends feel loved during the Christmas period. Reminders about how we can form positive relationships and display caring and thoughtfulness when sharing resources. Treat Others with Respect - Peer evaluation during the Design and Evaluate stages of the process to give constructive feedback in a positive and respectful manner



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Key concept	Learning objective	Key components	Main input	Activity	Adaptive strategies
Investigate	To understand the different ways in which movement can be created on a 2D plane.	To physically explore existing products and investigate how they have been made. Identify the levers and sliders in a product. Identify the purpose and effect of including a slider or lever in a product. To know that a slider moves in a straight line. To know that a lever moves in a curved line.	Have a selection of different pop up/ moving books, Christmas cards- pop up and non-pop up in a basket. Ask the children 'What are these? When do we give these to people? How do they move? What aged people would like to read these books? What would you do with it? How would you feel if you received one of these? What materials are they made from? Refer to FRUITS-discuss who in your family would like this? Why would they like this? How old would they be? What could you write inside? Together name different materials that have been used, e.g. card, paper, etc. Draw the children's attention to the moving parts. Introduce technical vocabulary to the children to describe the moving parts, e.g. lever, pivot, fold, tab, etc.	In pairs/ threes children to explore the different pop up books/ Christmas cards, naming and identifying the moving parts. Children to be encouraged to use key vocabulary (word cards displayed on each table) such as lever, etc. (Create a pic collage of the activity for the children's books)	Model levers with children, ensuring they are supported with being careful with resources and support with fine motor/manual dexterity Use physical objects such as toys to exemplify pop-ups and levers
Investigate	To know the features of a slider.	To know how to create a slider from two pieces of card.	Play Simon Says- slide..., pivot..... with the children. Have a readymade example of a slider to demonstrate and explain to the children how it moves. Adult to model each step of how to create a slider to the children: (Children to each be given the pre-cut parts needed to create the slider) 1. Glue image to tab. 2. Fold card in half. 3. Draw a straight line using a ruler on one side of the card. Explain to the children that it must not touch the edge of the card.	Children to follow step by step instructions from the adult to create a slider mechanism.	Use physical objects such as toys to explore slider movements. (Show zippy bag) Simplify language as needed



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			4. Demonstrate how to snip the card to create a slit but folding the card a little. 5. Cut along the straight line, emphasise not cutting through both sides of the card. 6. Slide your tab through the slit and move your tab. 7. Apply glue to the inside edges together (vertical/ horizontal) Do not glue along the bottom edge of the slider as this will stop the movement.		
Investigate	To know the features of a lever.	To know that a pivot is used to make a lever move. To know how to use a split pin to create a pivot point.	Recap last lesson and can the children recall what the mechanism was called that we created. Explain that today we are going to look at a different mechanism. Have a readymade example of a lever to demonstrate and explain to the children how it moves. Adult to model each step of how to create a lever to the children: (Children to each be given the pre-cut parts needed to create the lever) 1. Glue image to tab. 2. Fold card in half. 3. Cut along the pre-drawn curved line. Remind children of techniques used in previous lesson. 4. Punch hole using pencil on pre-drawn dots. 5. Slide the lever through the slit, push a split pin through the holes on the lever and the backing card to join together.	Children to follow step by step instructions from the adult to create a lever mechanism.	Use physical objects such as toys to explore pivot points. (Show clock face- hands are on a pivot) Simplify language as needed



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Design	To be able to use knowledge gained about slider and lever mechanisms in order to design a moving image.	To be able to draw a recognisable form. To create a Christmas themed design. To plan which part will move. To decide whether to use a lever or slider to create the movement.	Have an envelope on the teacher chair. Teacher to read the letter that has been sent from Mrs Holmes asking the children to design a pop up Christmas card for their families. Recap previous work on mechanisms, reminding the children how to create the mechanisms. Explain that they are going to design their own Christmas card. Discuss what the word design means and what is expected of them. Refer back to the first lesson where the children labelled the mechanisms. Adult to model an example of what is expected of the children. Show children different possible ideas/ images to support their designing of the Christmas card. Together make a list of criteria that must be included when designing their Christmas card. Refer to FRUITS-thinking about the person that is receiving the card and why.	Children to design a moving Christmas card and label the mechanism, materials and tools that they are going to be using.	Images to offer ideas for a Christmas card
Make	To use appropriate tools, materials and skills to create a moving image.	To be able to hold scissors correctly and cut with them. To be able to cut card accurately to create the parts needed for a slider or lever. To be able to use a split pin to create a pivot.	Have all the equipment and tools on display at the front of the lesson. Explain to the children that we are going to be making our Christmas card using our designs from last week's lesson. Using a design, adult to demonstrate and model to the children how to create a Christmas card with a moving mechanism. Adult to remind the children to use their design when they begin making their card.	Children to make their own moving picture Christmas card using their previous design. (Children to ensure that their moving mechanism works.)	Support use of split pin if additional safety needed or fine motor skill support Support use of scoring tools (safety and fine motor) Use adaptive scissors
Make	To use appropriate tools, materials and skills to decorate for a purpose.	To use colour for a purpose. To use other decorative elements. To use a glue gun safely and with support.	Have all the equipment and tools on display at the front of the lesson. Explain to the children that we are going to continue making our Christmas card using our designs. Using a design, adult to re- demonstrate/ model to the children how to create a Christmas card with a moving mechanism. Today, explain that we are going to be adding	Children to continue making their own moving picture Christmas card using their previous design. (Children to ensure that their moving mechanism works. Children to focus on the decorative side- ensuring their Christmas	Supply a range of mark making tools including chunky felt tips and pencil grips Consider additional support with glue gun over and above support given to other children



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			embellishments to our card, such as glitter, cotton wool, sequins, etc. Adult to demonstrate how to add glitter, etc. to add affects to the card.	card moves, the correct colours have been used and any embellishments have been added to create added affect)	
Evaluate	To evaluate whether our designs met the needs of the user.	To be able to say what they like about their design. To be able to say what they don't like about their design. To be able to reflect on what went wrong. (tools, materials, methods) To give feedback on peer designs – being mindful of FRUITS – Relationships and Treating others with respect.	Have Christmas music playing for the children to enter the classroom to. Each of the children's finished Christmas cards to be on display on the table. Children to be given the opportunity to walk around the tables to view each other's Christmas cards. Explain that we are going to be evaluating our own designs. We are going to be discussing the parts that we like about it and parts that we would change about it, if we were to do it again. Adult to demonstrate how to evaluate their own work. Explain that we are going to be evaluating our peer's Christmas card. Refer to FRUITS- treating each other with respect when giving feedback to each other.	Children to evaluate their Christmas card referring to the criteria that was set out. Children then in pairs to evaluate each other's card- talking about the parts they like and parts that might be changed if they made them again.	Use simplified language as needed Use some closed questions directed to specific child in addition to open questions Allow children who need additional focus and attention support to handle the products of peers with support Use visuals as appropriate