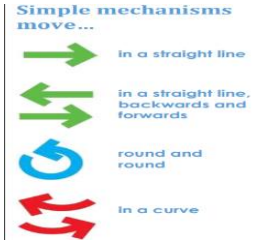
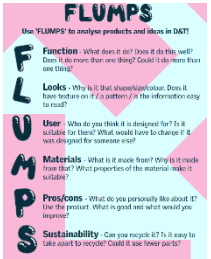
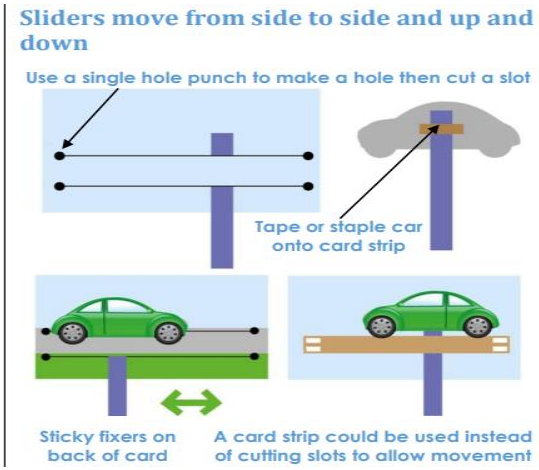
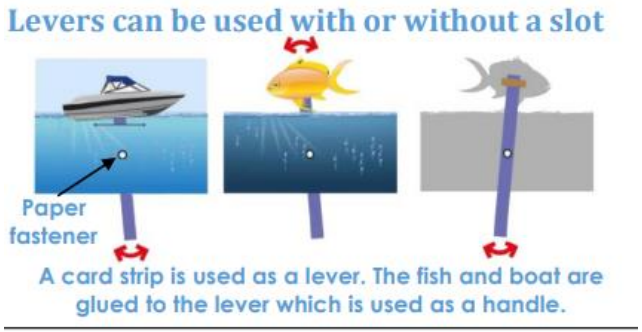
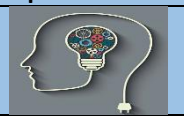
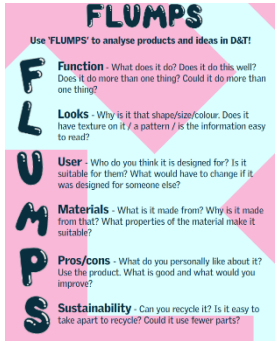
Springdale First School

Imagine, Believe, Achieve

Year 1 Design and Technology Mechanisms – Levers and Sliders)

Children's prior learning in this area	Cultural Capital Opportunities	Key vocabulary and glossary
• Junk modelling. • Joining materials/techniques – sellotape/masking tape/hole punches/staples/squeezie scissors. • Structures – materials – purpose. • Design own product. • Group evluation. • Sliders – moving cards in Reception. • Designing and inventing in History.	Learning about **Robert Sayer**, inventor of pop-up books. 	• **Mechanism –** a device used to create movement in a product. • **Lever –** a rigid bar which moves around a pivot. Levers are used in many everyday products. In this project children will use card strips for levers and paper fasteners for pivots. • **Slider –** a rigid bar which moves backwards and forwards along a straight line. Unlike a lever, a slider does not have a pivot point. • **Slot –** the hole through which a lever or slider is placed to enable part of a picture to move. • **Guide or bridge –** a short card strip used to keep sliders in place and control movement. **Pivot** - the central point, pin, or shaft on which a mechanism turns

Enquiry Question – How do the parts of a book move?	Enquiry Question – How does a slider work?	Enquiry Question – How does a lever work?
Concept – Enquire 	**Concept – Design - Moving picture – slider focus.** 	**Concept Design– Moving picture – lever focus.** 
 **Children will know that picture books move by pulling and pushing different parts.**  Look at different moving parts in everyday objects – use PP resources folder. Tell chn about **Robert Sayer** - Children will know that Robert Sayer was born in England in 1725 and died in 1794. He helped create moving picture books that were aimed at children. A Brief History of the Pop-Up Book (bookstellyouwhy.com) **Practise** – chn to explore different moving parts in pop up books. Look at moving parts in pop up books – How do these parts move? Focus on the pulling & pushing of lever/slider mechanism. **Apply** – in small groups/class create a mind map of the different ways they moved and the parts that are needed for this to happen.   	 **Children will know that a slider has a rigid bar which moves backwards and forwards/ upwards and downwards along a straight line.** Show children different sliders in action/everyday life – vents, windows, guillotine, pop-up books etc. (use resources folder) **Practise** - Investigate how the mechanism works – what components are needed? **Apply** - Children will draw and label a slider using key vocabulary: slider, slot, pull. You may have a picture ready for some to label & annotate. **Deepen** – Chn can annotate their slider with the use of specific component and why it is used.   	 **Children will know that a lever is a rigid bar which moves around a pivot. Levers are used in many everyday products. Unlike a slider, a lever has a pivot point.** Show children different levers in action/everyday life – use pop up books, pliers, scissors, hammer. Investigate how the mechanism works – what components are needed? **Practise** - Investigate how the mechanism works – what components are needed? **Apply** - Children will draw and label a lever using key vocabulary: lever, pivot, input, output. You may have a picture ready for some to label & annotate. **Deepen** – Chn can annotate their slider noting the pros and cons of different slots (length – reasons for choosing different lengths).  

Enquiry Question – Who would this product be for?		Enquiry Question – Was the product fir for purpose?
Concept – Design 	**Concept – Make** 	**Concept – Evaluate** 
Children will make a product for a specific user following design criteria. **R & R - joining techniques – what can the chn remember – glue/tape/flange...** Design criteria – as a class create a design criteria for a moving picture – what components, tools, materials will you need? **Practise** – Model designing a moving picture including a slider & lever – make mistakes. **Apply** - Chn to design their moving picture using design criteria & label the components. **Deepen** – Annotate their designs with reasons and choices.  	**Children will follow steps to make their product.** Chn to follow the steps and their design to make their product. Discuss choices using technical vocabulary: **Mechanism –** a device used to create movement in a product. • **Lever –** a rigid bar which moves around a pivot. Levers are used in many everyday products. In this project children will use card strips for levers and paper fasteners for pivots. • **Slider –** a rigid bar which moves backwards and forwards along a straight line. Unlike a lever, a slider does not have a pivot point. • **Slot –** the hole through which a lever or slider is placed to enable part of a picture to move. • **Guide or bridge –** a short card strip used to keep sliders in place and control movement. **Pivot** - the central point, pin, or shaft on which a mechanism turn. Take pictures and record journey – chn can look at this when evaluating. **Apply** – chn to follow their design & the class design criteria to make their product.	**Children will evaluate their ideas against design criteria.** **R&R** – Give me 5! Tell me five things you know about freestanding structures. Talk about whether their moving picture was fit for purose. Use evaluation against design criteria – model this with a product. **Practise –** test out product – is it fit for purpose? How do you know? **Apply –** Evalute product against design criteria – look at a checklist toegther then chn can fill it out accornding to their product. Talk about what went well and what might be improved. **Deepen –** Explain what went well and why and then what might be improved and why.