LENT TERM 2
DESIGN AND TECHNOLOGY – YEAR 1/2 - MEDIUM TERM PLANNING – STRUCTURES AND MECHANISMS
(Model of working bridge)

LESSON 1	LESSON 2	LESSON 3
Recap and Retrieval • The part of a machine that brings about movement is called the mechanism. (Y1 Recap)	**Recap and Retrieval** • The part of a machine that brings about movement is called the mechanism. (Y1 Recap) • A slider mechanism moves in a straight line.	**Recap and Retrieval** • The part of a machine that brings about movement is called the mechanism. (Y1 Recap) • A slider mechanism moves in a straight line. • A lever mechanism is a bar that moves around a fixed point called a pivot.
TECHNICAL KNOWLEDGE **MAKE** **LEARNING INTENTION:** To know that a slider mechanism directs movement. **Disciplinary Knowledge** **Y1:** • Use sliders. • Explain what they are making and why. **Y2:** • Use sliders. • Explain what they are making and why it fits the purpose. **Aim:** Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.	**TECHNICAL KNOWLEDGE** **MAKE** **LEARNING INTENTION:** To know that a lever mechanism moves around a fixed point. **Disciplinary Knowledge** **Y1:** • Use levers. • Explain what they are making and why. **Y2:** • Use levers. • Explain what they are making and why it fits the purpose. **Aim:** Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.	**TECHNICAL KNOWLEDGE** **MAKE** **LEARNING INTENTION:** To know that linkage mechanisms combine levers and sliders. **Disciplinary Knowledge** **Y1:** • Use levers and sliders. • Measure, mark out, cut and shape, with support. **Y2:** • Use levers and sliders. • Measure, mark out, cut and shape materials and components, with support. **Aim:** Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.
Key Vocabulary: **mechanism,** device, motion, force, **sliders,** direct movement, **straight**	**Key Vocabulary:** mechanism, device, motion, force, **lever, pivot, arc**	**Key Vocabulary:** mechanism, device, motion, force, **linkage, levers, sliders, pivots**, base, joint, free moving.

Key Knowledge: **Child:** • The part of a machine that brings about movement is called the mechanism. • A slider mechanism moves in a straight line. **Teacher:** • A slider can move up and down or from side to side. • It is made up of a slider and slider support to direct the movement. • Real-life examples of slider mechanisms include door bolts and drawers. • People build machines to make their work easier. • A machine is made up of different parts that all work together to perform a task. • Individual parts of a machine are called components.	**Key Knowledge:** **Child:** • A lever mechanism is a bar that moves around a fixed point called a pivot. **Teacher** • The amount of movement depends on the position of the pivot. • Levers move an object in an arc shape. • Real-life uses of levers include scissors and seesaws.	**Key Knowledge:** **Child:** • A linkage mechanism combines levers and sliders. • It consists of two or more bars joined together by pivots. **Teacher** • Fixed pivots attach the linkage mechanism to a fixed base to keep the joint still. • Moving pivots join two bars together, but the bars can still move freely. • Real-life uses of linkages include toolboxes and scissor lifts.

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LESSON 4	LESSON 5	LESSON 6
Recap and Retrieval • The part of a machine that brings about movement is called the mechanism. (Y1 Recap) • A slider mechanism moves in a straight line. • A lever mechanism is a bar that moves around a fixed point called a pivot. • A linkage mechanism combines levers and sliders.	**Recap and Retrieval** • The part of a machine that brings about movement is called the mechanism. (Y1 Recap) • A slider mechanism moves in a straight line. • A lever mechanism is a bar that moves around a fixed point called a pivot. • A linkage mechanism combines levers and sliders. • A product or project is usually guided by a set of design criteria.	**Recap and Retrieval** • The part of a machine that brings about movement is called the mechanism. (Y1 Recap) • A slider mechanism moves in a straight line. • A lever mechanism is a bar that moves around a fixed point called a pivot. • A linkage mechanism combines levers and sliders. • A lever mechanism will work best for creating a bridge which is able to lift.
DESIGN **LEARNING INTENTION:** To know that a product or project is usually guided by a set of design criteria. **Disciplinary Knowledge** **Y1:** • Use pictures and words to plan, begin to use models. • Design a product for themselves following design. Criteria **Y2:** • Describe design using pictures, words, models, diagrams, begin to use ICT. • Design products for themselves and others following design criteria. **Aim:** Develop the creative, technical and practical expertise needed to perform everyday tasks	**MAKE** **LEARNING INTENTION:** To know that a working model needs to have the correct mechanism. **Disciplinary Knowledge** **Y1:** • Choose suitable materials and explain choices. **Y2:** • Choose suitable materials and explain choices depending on characteristics. **Aim**: Build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.	**EVALUATE** **LEARNING INTENTION:** To know that products can be evaluated against criteria for success. **Disciplinary Knowledge** **Y1:** • Talk about their work, linking it to what they were asked to do. • Begin to talk about what could make product better. **Y2:** • Describe what went well, thinking about design criteria. • Talk about what they would do differently if they were to do it again and why. **Aim:** Critique, evaluate and test their ideas and products and the work of others.

confidently and to participate successfully in an increasingly technological world.		
Key Vocabulary: **design, criteria, product, project**, mechanism, linkage	**Key Vocabulary:** bridge, lift, **mechanism**, device, motion, force, linkage, levers, sliders, pivots, **base, joint, free moving**	**Key Vocabulary:** mechanism, design criteria, compare, **evaluate,** strength, weakness, **outcome, improve**, **success**
Key Knowledge: **Child:** • Design criteria is a list of things that a product must have. • A product or project is usually guided by a set of design criteria. **Teacher:** • Properties of components and materials determine how they can and cannot be used.	**Key Knowledge:** **Child:** • A bridge can be lifted to allow boats to pass under. • A lever mechanism will work best for creating a bridge which is able to lift. **Teacher** • Corporation Bridge is a bridge in Grimsby. • The bridge is a Scherzer Rolling Lift Bascule bridge. • There are different lever construction techniques. • Moving mechanisms are made using stiff materials, such as card, plastic or metal, so as not to bend or break when force is applied.	**Key Knowledge:** **Child:** • (Y1 recap) A strength is a good quality of a piece of work. • (Y1 recap) A weakness is an area that could be improved. **Teacher:** • Materials should be cut, joined and finished carefully and appropriately to make sure the product works, looks appealing and achieves the design criteria.
Assessment Cumulative quiz. Retrieval practice.		