DT	Year 3	Spring 2
Theme: Our Local Area Strand: Axels, Pulleys and Gears		

NC objectives covered:	generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 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 their ideas and products against their own design criteria and consider the views of others to improve their work understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
Prior Knowledge needed:	Historical knowledge of mining (linked to Y3 Mining Topic). Working knowledge of Forces from Y1 and Y2 Science curriculum. Knowledge of moving mechanisms from Y2 Vehicles unit.

Learning in this topic:

TECHNICAL KNOWLEDGE: Develop the creative, technical and practical expertise needed to perform everyday tasks confidently

Children will learn how a **pulley system** works and investigate the way they can be used to create a solution to moving loads.

Children will understand what a fixed pulley is and explain how the load can be **transported** in a different direction to the **effort.**

Further development of pulley knowledge to be gained through construction (trial and error) and an opportunity to adding an additional pulley to see the impact on the **load (mechanical advantage)**

Children will explore **supporting structures (**developing knowledge of shapes and **rigidity** needed as well as the role of **axles** in allowing movement).

DESIGN AND MAKE: 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

Design a model fit for purpose using brief given to include at least one **pulley** and capable of bearing a **specified load** over a given **distance.**

Apply knowledge acquired to **design, sketch and label** a **working model** of the pulley system using stem Knex.

Make **prototypes** of working pulling system to aid the **design process**.

EVALUATE: critique, evaluate and test their ideas and products and the work of others (including in the real world)

Children will test their model against the **brief** given and **evaluate** its effectiveness. They will outline any **changes/modifications** made and give justification for these. Also, they will make **recommendations** for **future improvements** from their learning experience.

Curriculum Concepts and Themes:	Mechanics and Forces Designing structures Real life application of pulley systems Knowledge that mechanisms make solutions	**Curriculum Skills Progression:**	Disassemble products and describe in detail their functions. Use annotated sketches, cross-sectional, exploded diagrams and increasingly complex prototypes. Select from and use a wide range of materials and components according to both functional Use knowledge of similarities and differences between products with the same function to support identification of most effective product. Evaluate ideas and products against own design criteria, taking into account the views of others. Attach a fixed axle to a chassis and add wheels ensuring that they can move freely. Construct a pulley that allows a load to travel along a rope. Use a range of materials to make joints. Construct cuboids of different sizes from a net. Use construction kits with gears to mesh gears at right angles. Describe in detail the way in which an axle and chassis help a vehicle to move.
Direct links to made other subjects:	Closely linked to Topic about "Hednesford Mining" Links to prior knowledge of Forces		

Inspirational Start:	Mid-way Milestone:	Extraordinary End:
Storyboard to understand how coal is created.	A letter to children from a coal miner. Give context for learning and link to Topic.	Testing and evaluating effectiveness of the pulley by testing to see if it can hold 20ml of water.

DT	Year 3	Summer 2

Theme: Spain
Strand: Food Technology

NC objectives covered:

Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting], accurately

Select from and use a wider range of materials and components, including ingredients, according to their functional properties and aesthetic qualities

Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

Understand and apply the principles of a healthy and varied diet

Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques

Prior Knowledge needed:

Geographical knowledge of Spain (linked to Year 3 Spain topic)

Food technology knowledge of bread making (Year 2)

Knowledge of safety and hygiene when handling food and equipment (Year 2)

Working knowledge of senses from Year 1.

Learning in this topic:

TECHNICAL KNOWLEDGE: Develop the creative, technical and practical expertise needed to perform everyday tasks confidently

Children will identify the different food groups. Describe the importance/role of each of the groups.
Explain why it is important to have a balanced diet Consider the proportion of each food group required and show this using a picture (food pyramid/food plate).

DESIGN AND MAKE: 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

Children will learn what paella is, how it's made and the traditions about eating it. They will also explore different paella recipes. They will try an example of paella to gain experience of tasting it. They will then design and make their own paella dish, which will include meat and vegetables, to eat alongside traditional Spanish tapas such as bread, olives and chorizo.

EVALUATE: critique, evaluate and test their ideas and products and the work of others (including in the real world)

Children will eat their own paella dish and evaluate the taste and whether they think it complements the tapas food. They will think about what went well, what could be improved and which ingredients they would omit/add in if they were to make it again, and any seasoning they could add/change to improve the flavour.

Understand and apply the principles of nutrition and learn how to cook.

They will also identify, define and learn different cooking techniques: cutting (how to use a knife safely using different techniques) claw grip, bridge hold. Also, techniques may include peeling, chopping, dicing, slicing, combining, grating.

They will identify hygiene and safety in the kitchen including: importance of hand washing, personal hygiene (hair tied back, removing jewellery), wearing aprons, Cross contamination and importance of preparing different foods on different boards, discussing importance of allergies.

Curriculum Concepts and Themes:

Real life application of making food
Preparing nutritionally healthy and balanced meals
Knowledge of food groups

Curriculum Skills Progression:

Use research to develop design criteria that are fit for purpose.

Gain an understanding of the ways in which specific food groups apply to the principles of a healthy and varied diet.

Identify what needs to be done in order to work safely and hygienically when working on a range of tasks.

Convert measure and weigh using standard and imperial units.

Give reasons for the way in which food processing can affect the taste, appearance, texture and colour of food.

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

Talk about and give reasons for the need to work safely and hygienically.

Talk about the impact of changing proportions within a recipe and use knowledge of food and cooking to generate own recipes.

Talk in scientific terms about the physical and chemical changes that take place when food is cooked, **e.g. heated and cooled.**

Follow procedures for safety and hygiene.

Evaluate ideas and products against own design criteria, taking into account the views of others.

Direct links to made other subjects:

Closely linked to topic unit about Spain
Science – teeth and healthy eating topic
English – persuasive writing

Inspirational Start:

Child led introduction to find out about different foods that Spanish people eat.

Mid-way Milestone:

Creating a paella recipe for their own paella dish.

Extraordinary End:

Restaurant table set up in groups of 4 to eat their paella alongside the tapas dishes.