Year 3 Term 3

What does it mean to be strong?

SCIENCE

National Curriculum Links:
Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.

Essential Prior Learning:
Magnets attract things – certain things 'stick' to magnets. Children have explored changing the shape of objects by squeezing, twisting, squashing, etc. Children should be able to measure accurately to the nearest centimetre and draw and label diagrams.

Progression in Skill:
Ask relevant questions about the world around them and using different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations. Take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Develop criteria to identify, group, sort and classify, taking into account differences, similarities or changes related to simple scientific ideas and processes. Use results to draw simple conclusions, e.g. The ___-er the _____, the ___-er the _____. Read and spell simple scientific vocabulary correctly. Collect, gather, record, present data and report on findings from their own enquiries/observations and measurements using simple scientific language in a variety of ways to help in answering questions: including oral and written explanations, displays or presentations, drawings, labelled diagrams, bar charts and tables of results and conclusions.

Long-term Memory Knowledge:
Compare how things move on different surfaces. Name some forces that need contact between two objects. Demonstrate how magnets can act at a distance and do not need contact. Demonstrate how magnets can attract and repel each other. Sort materials according to whether they are attracted to magnets or not. Identify the two poles on a magnet. Make predictions about whether a pair of magnets will attract or repel each other, based on the direction of their poles. Use scientific enquiry to explore forces. Describe what you observe happen, record results and draw conclusions. Measure accurately.

Key Vocabulary	
surface	the outside/top layer of an object
movement	the change in the position of an object
iron, steel, nickel	metals that are attracted to magnets
contact/non-contact force	contact force: when two objects physically touch, causing a push or pull movement non-contact forces: do not need contact, e.g. gravity, magnetism
friction	a resistance force that works in the opposite direction to a moving object, slowing it down
resistance	a contact force that slows down an object that is moving
gravity	a force that pulls all things to the ground
magnetic field	an invisible area of magnetism around a magnet
magnetism	an example of a non-contact force; it can be a push or a pull
horseshoe/bar/ ring magnet	types of magnet

Progression in Resources:
Use of magnets to experiment – bar and horseshoe Fair test experiments

Relevance	
Now	Children know that the properties of magnets are useful in everyday life.
Future	Understanding of magnets allows children to understand why something does or does not work and be able to make minor repairs.
Aspiration	In adult life, children have a career in industry, using magnets to generate cleaner electricity or make other technological advances.