

Year 3, Term 1, Thematic Overview

Topic Title: **Feel the force, see the light**

English: Voices in the park, Gorilla, Gregory Cool, The Green Ship • Recount – use simple sentences • Setting description - use a range of adjectives • Character description – use a range of coordinating conjunctions to join sentences • Newspaper report – just front page with heading, picture with a caption and 5Ws – use time conjunctions • Non-fiction – use organisational devices	Maths: 1. Number sense and exploring calculation strategies (3 weeks) • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction • recognise the place value of each digit (tens, ones), compare and order numbers up to 100 • find 10 more or less than a given number • read and write numbers up to 100 in numerals and in words • solve number problems and practical problems involving these ideas • identify, represent and estimate numbers using different representations, including the number line • add and subtract amounts of money to give change, using both £ and p in practical contexts 2. Place value (2 weeks) • identify, represent and estimate numbers using different representations • find 10 or 100 more or less than a given number • recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • compare and order numbers up to 1000 • read and write numbers up to 1000 in numerals and in words • solve number problems and practical problems involving these ideas • count from 0 in multiples of 50 and 100 3. Graphs (1 week) • interpret and present data using bar charts, pictograms and tables • solve one-step and two-step questions [for example, ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tables
R.E.: What is Judaism? IALT: understand the beliefs in Judaism (Moses and the Ten Commandments)	PSHE: Diversity and Equality The first PSHE term topic of the year is focused on mental health and wellbeing. The children will be discussing being part a new class and part of a new team, school and year group and developing skills of self-regulation, empathy, respect and teamwork.

IALT: make links to the Ten Commandments and the role of rules today IALT: understand the features of a synagogue	E-Safety Focus: Self-Image and Identity
Art: Drawing - Frida Kahlo 1907 –1954 Self-portraitist We will be learning: • To be able to build on skills of tonal shading in their drawing • To be able to sketch lightly without using a rubber. • To be able to show facial expression in art. • To be able to use different grades of pencil to show tones and textures through hatching and cross hatching. • To be able to use shading to show light and shadow	Music: Students will learn their first song and perform as an ensemble. This term is all about introducing music to the students. The aim of a short performance by the end of term is to build confidence and understanding of the basics of music. Students will be able to: • Learn basic ensemble skills. • Understand the terms; beat, rhythm & pitch. • Perform a simple song, following pitches and rhythm correctly. • Understand how standard written notation shows pitches and rhythms. • Play an instrument or sing in a performance. • Learn to sing or play from a notated score sheet. • Recognise the importance of Ensemble work.
Mandarin: In Mandarin the children will learn how to ask, “What is your name?” and answer with “I’m called...” Key vocabulary: I, you, to be called, what, name Phrases: What’s your name? I’m called...	P.E. In PE children will take part in gymnastics and multi skills: In Gymnastics children will: Learn and remember the seven gymnastic positions Develop their balance Learn how to dismount a beam To perform and watch other routines Explore different ways to get onto the vault then dismount

Grammar: Forming a question using the word what (shén me 什么), 1 st and 2 nd person pronouns. Phonics: initials h, j, l, m, n, w, z, sh Characters 叫 jiào called Culture: Shadow theatre		To perform a sequence of movements. In Multi skills children will: Understand how to increase speed over a short distance Be able to change the type of throw depending on how far the ball needs to travel Learn how to bowl correctly towards a target Understand the importance of finding space Learn how to receive a rugby ball Learn how to stand when batting the ball
Computing		
Substantive Knowledge		Disciplinary Knowledge
- We will be focusing on how to use the software Microsoft Word and Microsoft Edge and also search engine Chrome. - We will be able to describe a series of input and output devices used in school - We will be able to evaluate the appearance of digital content		- To log on and off computers - To know parts of a computer - To control a mouse effectively - To know how to edit fonts and styles in Word To be able to navigate and bookmark websites - To be able to copy and paste and resize images into Word
Thematic Curriculum		
Topic Title:	Feel the force, see the light	
Big Question:	The Big Question: How do forces and light help us understand and explore the world around us?	
Blurb overview:	During this unit, the children will gain a deep understanding of both kinetics and optics. They will begin by studying forces by looking at the impact different surfaces have on how things move, before moving on to exploring magnets through a variety of hands-on exploration and investigation. When learning about optics, children will explore light, dark, reflection and shadows. This unit will also provide vast opportunity for children to refine their investigative skills.	
Celebration of Learning	STEM challenge day (application/problem solving)	
Text Links	Non-Fiction texts: magnets and forces	
Oracy End Point:	STEM challenge day: Present an explanation of	Physical: Consider position and posture when addressing an audience. Linguistic: Be able to use specialist vocabulary Cognitive: Ask questions to find out more about a subject

	how they approached a scientific problem, and explain the scientific principles behind real-world scenarios and everyday applications.	Social and Emotional: Speak with confidence in front of an audience
Science		
Substantive Knowledge	Disciplinary Knowledge	
Kinetics •To know how to compare how objects move on different surfaces depending on the properties from which they are made. •To know that some forces need contact between two objects, but magnetic forces can act at a distance. •To know how different magnets can have different strengths. •To know how to observe how magnets attract or repel each other and attract some materials and not others. •To know how to 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. •To know magnets as having two poles.	•To know that questions can be asked and answered by carrying out scientific enquiry. •To know that results are used to draw simple conclusions and raise further questions. •To know that scientific evidence is used to answer questions or to support findings. •To know how to measure tests using a range of equipment. •To know how to measure tests using a range of equipment with increasing accuracy (data loggers). •To know that observations can depend on conditions for scientific enquiry. •To know how to identify the conditions that change when carrying out scientific enquiry.	

•To be able to predict whether two magnets will attract or repel each other, depending on which poles are facing. •To know how magnets can be damaged if they are dropped. •To explore the work of Isaac Newton. Optics •To know that light is needed in order to see things and that dark is the absence of light. •To know that light is reflected from surfaces. •To know that light from the sun can be dangerous and that there are ways to protect their eyes. •To know that shadows are formed when the light from a light source is blocked by an opaque object. •To be able to find patterns in the way that the size of shadows changes.	
History	
Substantive Knowledge	Disciplinary Knowledge
Geography	
Substantive Knowledge	Disciplinary Knowledge
D&T	
Substantive Knowledge	Disciplinary Knowledge
Mechanisms Technical knowledge:	Mechanisms Design:

- To know that mechanisms are a collection of moving parts that work together as a machine to produce movement. - To know that there is always an input and output in a mechanism. - To know that an input is the energy that is used to start something working. - To know that an output is the movement that happens as a result of the input. - To know that a lever is something that turns on a pivot. To know that a linkage mechanism is made up of a series of levers	- Create a class, design criteria for a moving product - Design a moving product for a specific audience in accordance with a design criterion. - To choose a material for both its suitability and its appearance. Make: - To select the most appropriate tools and techniques for a given task. - Make linkages using card for levers and split pins for pivots. - Experiment with linkages adjusting the widths, lengths and thicknesses of card used. - Work accurately to measure cuts and make holes. Evaluate: - Evaluate own designs against design criteria. - Explain how to improve a finished model. - To know why a model has or has not been successful. Use peer feedback to modify a final design.
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Cultural Capital

Diverse perspectives are represented through curriculum coverage: significant scientific discoveries

STEM day

Use of technical vocab and language.

Opportunities to debate, discuss and present ideas and critical thinking to an audience.

Use of a range of resources: film, photos, posters, artefacts, scientific equipment. Class libraries to feature a wealth of books (fiction and non-fiction), linked to the period in History being studied.

PD: embedding a culture of online safety.

Weekly Overview		Intended learning outcomes
Week 1	PD will take place across the first two days of Term 1 (Thursday 3rd and Friday 4th September), instead of a week of afternoons. Focus text for PD Day 1: Focus Text "Enzo's Egg" (Twinkl text which I have as a book/e-book and ppt – exploring safe spaces and support for mental health) PD Day 2 will be three PSHE lessons across the day.	<i>Lesson 1</i> All: understand that empathy means to share the feelings of others Most: can understand the difference between empathy and respect Some: give examples of people showing empathy and respect <i>Lesson 2</i> All: to know that it is ok to have good and bad feelings

The ppt of the text and E-book can be found here: [Term 1 Resources](#)
Term 1 Online Safety Focus - Self Image and Identity – activity to be completed during this week.

Philosophy Question for circle time: Can we be happy and sad at the same time?

Thrive Focus for PD – re-teach and modelling check ins. Suggested activity: children to create their own safe space diorama/art-work



IALT: understand what affects my mental health.
introduce zones of regulation

PD Day 2: PSHE IALTS across the day:

Most: be able to give examples of good and bad feelings

Some: to provide an example of why someone has good and bad feelings

Lesson 3

All: know that there are five British Values that are part of our country

Most: to be able to name the five British Values

Some: to be able to explain the five British Values

	Lesson One: IALT: understand empathy and respect (links to diversity – different ways of thinking – neurodivergent) Link this to: One Childhood One Chance” – what this means how do we demonstrate this. Introduce the core values to Year 3 Lesson Two: IALT: IALT: understand good and bad feeling - Link to and introduce Upton Value of Respect – self-respect and children reflecting on their feelings (could be I Lesson Three: IALT: know the British Values	
Week 2	Lesson 1 The Big Question: How do forces and light help us understand and explore the world around us? Have some key resources you will use throughout the unit on tables (magnets, materials, different surfaces, torches, blindfolds etc). Allow children to explore and discuss what these objects mean to them and what they already know about them. Use this to gain an understanding of children’s existing knowledge of forces and light. Activity: What does it mean to be a Scientist? Share the KO and Home Learning menu with the children. Lesson 2 and Lesson 3   Skills: In Science Physics, IALT: describe the effects of contact forces. - To define the terms force and contact force. - To know that some forces need contact between two objects - To classify a force as a push, pull or a twist. - Use arrows and scientific vocabulary to show the direction of a contact force. Key vocabulary: contact force, diagram, force Recap Using modelling dough, mime and name the actions stretch: squash, roll, bend and twist. Turn your back to the class and perform one of the actions. Present the modelling dough to the class and ask them to vote on the action used. Reveal the answer after each vote. Explain that the actions that change the shape of the modelling dough require a force Arrange the class into pairs and hand each pair a table tennis ball. Challenge the pairs to move the ball using as many different actions as possible (for example, roll, flick, throw, kick, drop, bounce,	Lesson 2 and 3: All: I can define the terms force and contact force and can classify a force as a push, pull or a twist. Most: I can use arrows and scientific vocabulary to show the direction of a contact force. Some: I can use arrows and scientific vocabulary to show the direction of a contact force and can explain how the force is being applied.

spin, blow, suck and waft). Discuss and list all the actions used as a class and explain that each action requires a force; a force is a push, pull or twist. Model drawing a table with three columns on a flipchart and label each column 'push', 'pull' or 'twist'. With the class, group the actions, including those from the recap activity (stretch, squash, roll, bend and twist) into the three categories:

Pushes	Pulls	Twists
squash roll flick throw kick bounce blow waft	stretch drop suck	bend twist spin

Contact forces

Explain that forces can be grouped into two types: contact forces and non-contact forces.

explain that contact forces occur when two surfaces are in direct contact with each other. To demonstrate, pick up a pen, remove the lid and put it back on. Point out that each action required a force (a push, pull or twist).

- **Picking up the pen:** the hand pulled the pen up.
- **Removing the lid:** the hand pulled the lid from the main part of the pen.
- **Replacing the lid:** the hand pushed the lid onto the pen.

Each of these forces occurred when the surface of the hand directly contacted the surface of the pen, which means they are contact forces.

Explore activities:



Challenge one

1. Lay the cup on its side.
2. Place the ball a little way in front of the cup.
3. Try to get the ball into the cup without touching the ball or the cup.



Challenge two

1. Hold the end of the string so the ball hangs below.
2. Try to blow the ball over the top of your hand.



Challenge three

1. Half fill your cup with water.
2. Place the ball in the cup.
3. Without touching the ball, make it move in a circle.

Prompt the pairs to pull on the string quickly to flick the ball into the cup if they struggle.

Key questions:

Challenge 1

- **What method did you use to move the ball into the cup?** (Pulling the string attached to the ball created a contact force.)
- **Did you apply a push, pull or twist?** (A pull force.)
- **How did the contact force help to move the ball?** (The string created a connection between the ball and the hand. When the string was pulled, it applied a force on the ball, causing it to move towards the cup.)

Take feedback and point out that, although the children were not touching the ball, the string was. When the string was pulled, it applied a contact force on the ball, causing it to move towards the cup.

Challenge 2

- **How did you move the ball over your hand?** (Blowing on the ball created a contact force.)
- **Did you apply a push, pull or twist?** (A push force.)
- **How did the contact force help to move the ball?** (The air blown out of the mouth created a contact force that acted on the ball and pushed it over the top of the hand. The air was in contact with the ball.)

Take feedback and point out that, although the children were not touching the ball, the air was.

Challenge 3

- **How did you make the ball move in a circle?** (Swirling the water in the cup created a contact force.)
- **Did you apply a push, pull or twist?** (A twist force.)
- **How did the contact force help to move the ball?** (The swirling water created a contact force that acted on the ball and caused it to move in a circle. The ball was in contact with the water.)

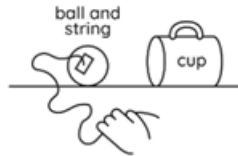
Take feedback and point out that, although the children were not touching the ball, the water was.

Demonstrate how to draw a force arrow onto a diagram. Label the arrow 'pull' to show the force used was a pull. Point out that the children should only draw the force causing the action and they do not need to consider any other forces involved.

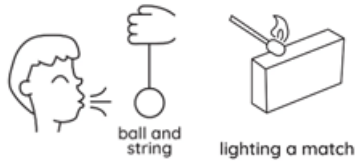
Moving a ball



- An arrow can be added to show the direction of a force.
- The arrow can be labelled with the name of the force.



Moving a ball



Recorded activity:

Ask the children to draw and label force arrows on the diagrams on the first two rows of the activity sheet/stickers.



Week 3	Lesson 1: Skills: In Science physics, IALT: identify the effects of Friction. - I can define the term friction. - I can identify surfaces with high and low friction. - I can make a simple scientific drawing with labels. - I can explain which surface create the most and least friction - I can list some uses of friction. Recap Recap the effects of forces. Show children some pictures showing forces in action and ask them to explain the effect. Friction Demonstrate rolling a ball along the floor and ask the children to think about the forces acting on the ball. Repeat the action and ask the children to discuss: - Does the ball slow down and stop because it has run out of force? (No.) - Why does the ball slow down? (A force slows the ball down.) - Why does the ball stop? (A force stops the ball from moving.) Explain that friction is caused by two surfaces rubbing together. Allow the children to rub their palms together for 30 seconds to feel the friction caused by the rubbing surfaces. Ask the children to share what they noticed about their hands when rubbing them together (they became warm). Show children real-world photos, demonstrating friction in action and its effect. Discuss the effects of friction on an object's movement; slows down or stops the moving object. Explain the other effects of friction; it produces heat. Share some everyday uses of friction, such as opening a jar or preventing a footballer from sliding. Introduce the terms: low friction and high friction. Explore how friction can be helpful and unhelpful.	Lesson 1: All: say what friction is, sort surfaces into high and low friction, draw a labelled scientific picture, and name one use of friction. Most: explain what friction is, identify high and low friction surfaces, draw a labelled scientific picture, explain which surfaces have the most and least friction, and give some uses of friction. Some: confidently explain friction using scientific words, justify which surfaces have the most and least friction, draw an accurate labelled scientific picture, and explain how friction helps us in everyday life.



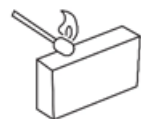
friction

The effects of forces

Two effects of forces are:

- Slowing down an object.
- Stopping an object from moving.

One force that can have these effects is called friction.



lighting a match

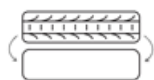
- When surfaces rub against each other, the contact between them creates friction.
- You can feel friction by rubbing your hands together.



racing

Friction and movement

- When an object is moving, friction is created.
- However, friction acts in the opposite direction to movement.
- Friction can slow down or even stop an object's movement.



worn tyre

The other effects of friction

- Friction also causes heat.
- Over time, friction can wear down the surfaces that are rubbing against each other.

Keywords

- Opposite direction.
- Slow down.
- Stop moving.
- Heat.
- Wear down.
- Grip.
- Slide.

Draw the children's attention to how surface roughness affects the amount of friction.

- Rough surfaces have more bumps than smooth surfaces.
- The bumps create many places where the two surfaces touch (points of contact).
- Contact between the two surfaces creates friction.
- More bumps lead to more points of contact, which leads to more friction.

Show the children: [Build your amazing stories](#)

- **Which two surfaces had the most friction between them?** (Carpet and Velcro.)
- **How did this help the presenter climb the ramp?** (The friction between the two surfaces allowed him to grip the ramp.)

- Which two surfaces had the least amount of friction between them? (Wood and clothing.)
- What happened when the presenter tried to climb the ramp using these materials? (He slid down the ramp as there was not enough friction to grip onto the ramp.)

Contact between surfaces is what creates friction so the more points of contact there are, the more friction there will be. This means the bumpier the surface, the more points of contact; therefore, the more friction is created.

Activity:

Children draw a scientific diagram to show one object moving across:

- a **high friction** surface
- a **low friction** surface

Their drawing should include:

- A title
- Simple outline drawings (no colouring or shading)
- Labels
- Arrows to show movement
- A short explanation

Lesson 2:

Skills:



In Science Physics, IALT: compare how objects move on different surfaces depending on the properties from which they are made.

- I can measure how far the object travels using a ruler or tape measure.
- I can record my results clearly in a table.
- I can compare the results from each surface.
- I can identify which surfaces have high and low friction.
- I can draw a conclusion using evidence from my results, explaining how friction affected the movement of the object.

Investigating friction variables

Pose the question: Does the roughness of a surface affect the amount of friction produced?

Lesson 2

All: I can measure how far an object travels, record simple results in a table, compare some results, identify high and low friction surfaces, and say what I found out.

Most: I can measure how far an object travels, record my results in a table, compare results from different surfaces, identify high and low friction surfaces, and draw a conclusion from my results.

Some: I can accurately measure how far an object travels, record my results in a clear table, compare results from different surfaces, identify high and low friction surfaces, and draw a conclusion using evidence from my results.

	Arrange the class into small groups. Explain that they will be carrying out a comparative test in order to answer the question and draw a conclusion. Emphasise that the children will measure the effects of friction (slowing down or stopping moving objects) as friction itself is challenging to measure. Explain the method to the children (letting cars roll down a ramp, measuring the distance that the car stops). Demonstrate how to set up the equipment and carry out the practical part of the investigation. Model and discuss Fair testing. Allow the children to test the materials, starting with the material they predict will create the most friction and ending with the material they predict will create the least amount of friction. Share the method with the children. Explore how they make the test fair- discuss the terms variables. Model how to measure the distance. Allow time for the groups to run their tests and record their results. Encourage the groups who finish quickly to gather repeat data. Recorded activity in books: - Children to record their results in a table. - Children to discuss what the results show. - Children to write a conclusion in their books.	
Week 4	Lesson 1 Skills:    In Science Physics, IALT: describe the effects of magnets. - define what a magnet is - identify how a magnet behaves - identify different types of magnets - identify magnetic and non-magnetic materials Lesson 1 - Magnets.notebook Activity: Children sort magnetic and non-magnetic materials. Lesson 2	Lesson 1 All: I can identify magnetic and non-magnetic materials, naming some magnetic and non-magnetic metals. Most: I can name and identify different types of magnets and can explain why some magnets attract and repel. Some: I can define the terms magnetism, magnetic material and non-magnetic material and can identify different types of magnets. Lesson 2 All: I can confidently explain what strength means, compare the strength of different magnets, plan a fair method to answer a question, and use my results to draw a clear conclusion.

	In Science Physics, IALT: explore the strength of magnets. Skills:   Success Criteria: - To identify what is meant by strength. - To understand that magnets have different strengths. - To plan a method for answering a question. - To draw a conclusion. Lesson 3 In Science Physics, IALT: identify the different parts of a magnet.  Skills: Success Criteria: - Name the parts of a magnet - Explain how magnets behave. Lesson 2 and 3 - Magnetic poles.notebook	Most: I can explain what strength means, describe that magnets have different strengths, plan a method to answer a question, and draw a conclusion from my results. Some: I can say what strength means, know that magnets can have different strengths, help plan a simple method, and say what I found out. Lesson 3 All: I can identify and name the parts of a magnet. Most: I can identify and name the parts of a magnet and can describe how magnets behave. Some: I can describe and explain how magnets behave, linking this to their magnetic field.
Week 5	Lesson 1 and 2 In Science Physics, IALT: understand how light helps us to see. In Science Physics, IALT: explain the role of light sources.  Skills: Success Criteria: - define what light is. - define what darkness is.	Lesson 1 and 2 All: I can say what light, darkness and a light source are, and identify some natural and man-made light sources. Most: I can explain what light, darkness and a light source are, and identify natural and man-made light sources. Some: I can confidently explain what light, darkness and a light source are, and identify and compare natural and man-made light sources.

- define what a light source is
- identify natural sources of light
- identify man-made sources of light

Have shoe boxes with object hidden inside. Have a viewing hole one end of the box. Is it easy to see what is in the box. Add a small hole to the top of the box to let some light in. Slowly add more holes. Children to explore whether it becomes easier to see the object, the more light we allow into the box. Discuss terms transparent, translucent and opaque. Explore materials based on this and sort.

Lesson 3

In Science Physics, IALT: identify how light is reflected off surfaces.

In Science Physics, IALT: understand how light can be dangerous for our eyes.



Skills:

Success Criteria:

- describe what happens when light reflects
- identify examples of reflective surfaces
- Identify different ways to protect our eyes.

Teach the children about how light is reflected from surfaces. Explore reflectors from bikes, reflective jackets and discuss how reflection from these materials help keep us safe. Have a variety of materials and torches. Makes predictions for which materials will reflect most light and explore this using torches. Create a poster for children to wear something reflective at night.

Great lesson plan below with key questions. Real life use of reflective material. Lots of images of reflective materials and materials being reflected when a light source hits them in the dark.

Lesson 3

All: I can say what reflection is, identify some reflective surfaces, and name ways to protect our eyes.

Most: I can describe what happens when light reflects, identify reflective surfaces, and identify ways to protect our eyes.

Some: I can clearly describe what happens when light reflects, identify and explain reflective surfaces, and describe different ways to protect our eyes.

Teaching Input - Recap on what the children have learnt from the previous lesson. What is a light source? Can you name some light sources (sun, torch, candle, stars) Is the moon a light source? Why not? (it reflects light from the sun) What is the dark? What does absence mean? - Introduce today's learning objective using PPT slide 1/PDF title page. - Using PPT slide 2/PDF p1, give the children time to think about what they already know about the word reflect? What does the word reflect mean? Can you use this word in a sentence? How is it linked to our light topic? Children may talk about the word reflection as a noun (I can see my reflection in the mirror) but may have limited knowledge of the word reflect as a verb (to throw back light or sound from an object and cause a change in direction). - Explain to the children what reflected light is using PPT slide 3/PDF p2. Give a real time example e.g. you are seeing me now, teaching you about light because sunlight and/or the light from the computer/light bulb is travelling in straight lines, hitting me or reflecting o me, changing direction and entering your eyes. - Use the diagram on PPT slide 4/PDF p3 to illustrate that the light is travelling from the source, reflecting off the object, changing directions and entering the eye. - Explain to the children that some surfaces reflect light better than others (flat, smooth, shiny surfaces). Discuss the misconception that some people mistake reflective materials for light sources. Use PPT slides 5-6/PDF p4-5 to recap on previous learning on light sources and discuss which objects reflect light and which are light sources. - Read through the poem Shiny Things by Elizabeth Gould (either as a class or in pairs). Ask the children to highlight the light sources mentioned in red and the objects that reflect light in blue. Model the activity using the 1st verse of the poem (highlight the moon in blue and the sun and stars in red). After the activity, go through the answers with the class and discuss any misconceptions. - Ask the children what they might wear so that they could be seen in the dark. Have any of the children got reflective jackets, bands, cycle clips? Do they know what 'cats' eyes' are in the road? How do cats' eyes work? (the cats' eyes are made from a reflective material so that at night, the car headlights reflect light back at the driver so that the driver can see where the middle of the road is). Use PPT slide 8/PDF p7- Reflective material in real life, to discuss real life application and use of reflective materials and/or using some reflective items you've brought in from home, demonstrate their reflective properties by shining a torch at the material. - Ask the children to look at the picture on PPT slide 10/PDF p9 and identify the reflective materials (ensure you tell the children that they are looking for reflective materials NOT light sources – use this opportunity to reinforce the difference between the two). Go over the answers. - Introduce the independent activity – Today, you will design a poster to encourage younger children to wear something reflective when they are outside. Ensure the children include information about how reflective materials work, and why they are important to wear in the dark. - After the children have completed their posters, use PPT slide 13/PDF p12 to evaluate their work. Who can answer the key lesson question: what is reflected light? BACKGROUND SCIENCE FOR TEACHERS: Light travels in straight lines from a light source (natural or man-made). Light hits an object, it can be scattered (it bounces off) or absorbed (it is converted to heat within the material). Usually, both things happen: brighter objects scatter more light and darker ones, absorb more light. Scattered light is different from reflected light. Scattered light bounces o the object in a jumbled state so the surface gives no image. Reflected light is returned in the same quantities and positions and gives an image. Teach the children about the impact that UV rays can have on the eyes. Explore different ways we can protect our eyes. Are all sunglasses equally as good at keeping our eyes safe? Fantastic example of smart from another primary school Science lesson 5 The Sun.notebook (ludlowprimaryschool.co.uk) Instead of creating posters, chn can make a mini movie using lpads. Record and put QR code in books on sheet. Lesson 1, 2 and 3- Light (1).notebook Lesson 4: In Science Physics, IALT: find out about the work of a scientist and explain how their discoveries have helped us to understand the world. ??? Asking questions Skills: Success Criteria: - Name a scientist - Identify what the scientist was known for - Identify what the scientist discovered - Identify how the discovery helped science Research the work of Isaac Newton. Isaac Newton's light experiment - Twinkl	Lesson 4 All: I can name a scientist, say what they discovered, and explain in simple terms how it helps us understand the world. Most: I can describe a scientist’s work and explain how their discovery has helped us understand the world. Some: I can research a scientist, explain their discoveries in detail, and clearly describe how their work has helped us understand the world today.
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	Children will work in groups to find out key facts about Isaac Newton. Present as a poster/non-chron report.	
Week 6	Lesson 1 In Science Physics, IALT: recognise which materials cast shadows. Skills:    Success Criteria: - I can describe how shadows form. - I can identify patterns between groups of materials and the shadows produced. - I can recall factors that affect the way a shadow appears. Discuss with the children how shadows are made. Go on a shadow hunt around the school. When children find a shadow ask them to identify the light source and what object is blocking the light. <u>Light and Shadows Types of Light How are Shadows formed Video for Kids - YouTube</u> Chn to go on a shadow hunt. Perhaps take ipads and ask children to photograph the shadow they see and the object that makes it. Chn can create photo collages of these for the book. Lesson 2 and 3 In Science Physics, IALT: investigate how the distance of the light source affects the size of its shadow. Skills:     Success Criteria: - I can make a prediction. - I can name factors that change the size of a shadow. - I can plan ways to answer a testable question.	Lesson 1 All: say how shadows are formed Most: compare the shape of a shadow to the object which has blocked the light Some: explain why shadows are different sizes depending on the time of day. Lesson 2 and 3 All: I can carry out a fair test, measure and record shadow sizes, describe patterns, and draw a conclusion. Most: I can carry out a fair test, measure and record shadow sizes, describe patterns, and draw a conclusion. Some: I can carry out a fair test, measure and record shadow sizes, describe patterns, and draw a conclusion.

	• I can describe patterns in data. • I can describe how the light source's distance affects the shadow's size. Carry out an investigation to test how the distance of a light source from an object, affects the size of its shadow. Complete across two lessons. Term 2 Week 5 - Light and shadows new.notebook Term 2 Week 5 - Light and shadows.notebook	
Week 7 DT	STEM Challenge Day: STEM day.notebook Design Technology: DT Lesson 1 and 2.notebook DT Lesson 3.notebook DT Lesson 4.notebook DT Lesson 5.notebook Return to the Big Question Quiz Top up teaching	
Week 8 RE	IALT: understand the beliefs in Judaism (Moses and the Ten Commandments) IALT: understand what the Torah is and how it is important to Jews IALT: make links to the Ten Commandments and the role of rules today	All: • Explain who Moses was and why the Ten Commandments are important to Jewish people. • Identify the Torah and explain why it is treated with respect. Most:

		• Describe how the Torah guides the beliefs and lives of Jewish people. • Make links between the Ten Commandments and rules we follow today. Some: • Explain why the Ten Commandments continue to be important for many Jews today. • Compare religious rules with modern rules and justify why they help people live together peacefully.
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