

Key Vocabulary

light	Light is a form of energy that moves in straight lines. It also reflects off things, and that reflected light enters our eyes, allowing us to see.
darkness	Darkness is caused by the absence of light. (When there is no light) it gets dark at night because there is no sun as a source of light.
reflect	When light from an object is reflected by a surface, it changes direction.
shadow	Shadow is the dark shape made when something blocks light.
translucent	Translucent is when a little bit of light can through an object, and you can't see clearly through it.
opaque	Opaque is when no light passes through an object and you can not see through it at all.
transparent	Transparent is when light completely passes through an object, and you can see clearly through it.
sun protection	Protecting your skin from the sun
light source	A light sources is something that makes and gives off its own light,

Key Information I will learn...

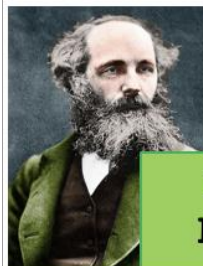
Key facts

Light travels in a straight line

The size and shape of a shadow changes depending on how close it is to the light source.

The moon does not make its own light – it reflects the light from sun.

It is dangerous to look directly at the sun.



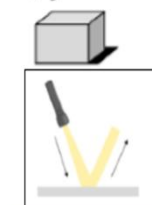
Influential Individuals

James Clerk Maxwell

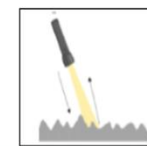
His main discoveries included the colour triangle and coloured photography.



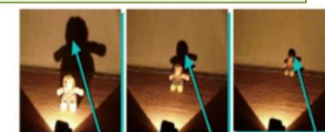
As the light source moves higher in relation to the object, the shadow gets shorter. As the light source moves lower, the shadow gets longer.



Light travelling and reflecting off a smooth surface



Light travelling and reflecting off a rough surface



LARGE SHADOW when the toy is close to the light

SMALLER SHADOW when the toy is further from the light

TINY SHADOW when the toy is a long way from the light

Light sources

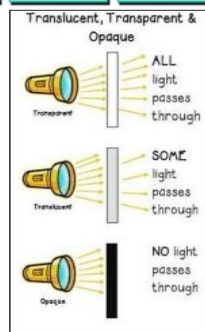
Light sources – objects that give out light



natural light sources – objects in nature that give out light



artificial light sources – made by humans



Key Questions

- Can I ask relevant questions and using different types of scientific enquiries to answer them?
- Can I set up simple practical enquiries, comparative and fair tests and use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions?
- Can I record findings using simple scientific language in a tables?
- Can I gather, record, classify and present data in a variety of ways to help in answering questions and reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions?

End Goals

- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions



Key Vocabulary

city	larger than a town – usually with a population of over 100,000 people
dispersed settlement	settlement where houses are spread out over a wide area
hamlet	a small settlement that has no central place of worship and no meeting point
linear settlement	settlement where buildings are constructed in lines, often next to a geographical features like a shore or river
megacity	a city with more than 10 million people
nucleated settlement	settlement where houses are grouped closely together around a central feature
population	the number of people in a certain area
settlement	a place where people live
town	a larger settlement than a village. More people live in a town – normally a couple of thousand – so they need more homes and shops
village	a small settlement with a number of houses for a few hundred people

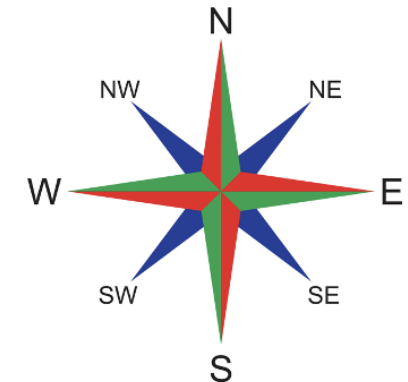
Key Information I will learn...

The population of the UK is 67 million.

The population of the world is 8 billion.



Tokyo is a mega city with a population of 41 million.



8-point compass

Key Questions

1. Can I name and locate different types of UK settlements (hamlets, villages, towns, cities, conurbations) employing the use of the eight points of a compass, maps, symbols and keys?
2. Can I describe, understand and distinguish between key types of settlement and land use (hamlet, village, town, city, conurbation, rural, urban and suburban)?
3. Can I use the eight points of a compass, four figure grid references, paper maps, Google maps, Google Earth, symbols and keys to locate different types of settlement?
4. Can I use maps, atlases and globes, Google Earth and Google Maps to locate different settlements of the world?
5. Can I understand the land use of the local area?
6. Can I construct detailed plans?

End Goals

- Understand that population is the number of people in a certain area.
- Understand that the population of the UK is 67 million people.
- Understand that a settlement is an area where people choose to live.
- Understand that there are four main types of settlement; a hamlet, a village, a town and a city.
- Understand that there is now a fifth type of settlement called a mega city because the world's population continues to grow.
- Understand that a compass has 8 points. Those points are; north, north east, east, south east, south, south west, west and north west.
- Understand that the population of the world is 8 billion people.
- Understand that settlements are built in patterns. These patterns can be classified as dispersed, nucleated, isolated and linear.
- Understand that Asia is the continent with the most cities with the largest population.
- Understand that the land use in Halifax has changed over time.

Key Vocabulary

mixed media	a type of art that combines multiple materials or techniques to create a work
cloth	a woven or knitted material that is used to make clothing, curtains, and other items
fabric	a cloth made by weaving or knitting long, thin fibers together
calico	a cotton cloth that is often printed with a pattern, or a word that describes something with bright colors and patches
acrylic paint	a fast-drying, water-based paint made from plastic resin and pigment
thread	a thin, twisted cord made from fibers that is used for sewing and weaving
stitches	a loop or turn of thread or yarn used to join or decorate fabric
needle	a small, sharp, and thin tool that can be used for sewing
experiment	trying something new or different to see how it works
reflect	thinking about what you've done, why you did it, and how you can improve
gesture	a style of painting that captures the action, movement, and emotion of a subject
pattern	something that repeats in a regular way, such as a sequence of shapes or colors
impasto	a painting technique that uses thick layers of paint to create texture and dimension

Key Information I will learn...



Odyssey by Alice Kettle, Odyssey, thread on canvas (2003)

Key Questions

1. Can I explore how artists combine media and use them in unusual ways to make art?
2. Can I share my response to their work?
3. Can I use my sketchbook to make visual notes capturing ideas that interest me?
4. Can I use my sketchbook to test ideas and explore colour and mark making?
5. Can I use paint to create a background on fabric, mixing colours to create different hues, tints and dilutions?
6. Can I use thread and stitching to create textural marks over the top of my painted canvas, creating interesting marks which reflect my response to the landscape?
7. Can I share my work with others and share my thoughts about the process and outcome?

End Goal

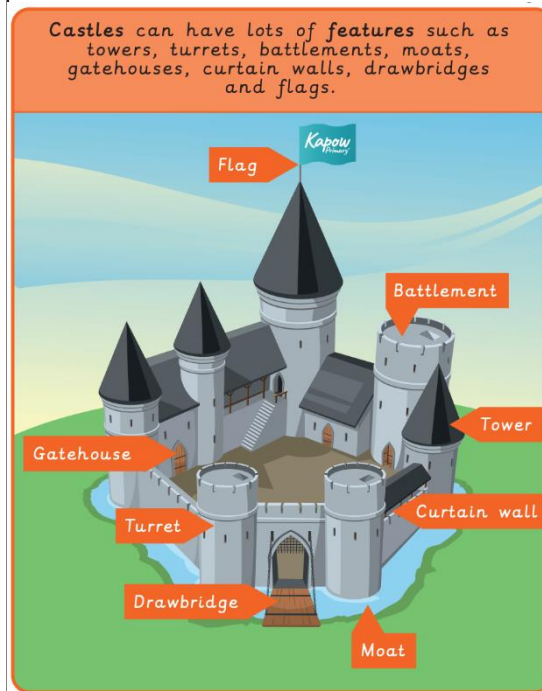
- Understand that artists can combine art and craft using painting and sewing together to make art.
- Understand that when we use two media together such as paint and thread, we can use their unique qualities in different ways to build an image.
- Understand that the skills we learn in one medium such as mark making in drawing, can be used in another such as sewing.
- Understand that we don't have to use materials in traditional ways – it is up to us to reinvent how we use materials and techniques to make art.



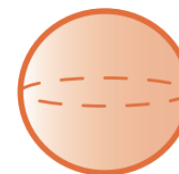
Key Vocabulary

2D	Flat objects with 2-dimensions, such as a square, rectangle and circle.
3D	Solid objects with 3-dimensions, such as a cube, an oblong and a sphere.
castle	A type of building that used to be built hundreds of years ago to defend land and be a home for Kings and Queens and other very rich people
Design criteria	A set of rules to help designers focus their ideas and test the success for them
evaluation	When you look at the good and bad points about something, then think about how you could improve it.
façade	The front of a structure
feature	A specific part of something
flag	A piece of cloth used as a decoration or to represent a country or symbol.
net	A 2D flat shape, that can become a 3D shape once assembled.
recyclable	Material or an object that, when no longer wanted or needed, can be made into something else new.
scoring	Scratching a line with a sharp object into card to make the card easier to bend.
stable	Object does not easily topple over
tab	The small tabs on the net template that are bent and glued down to hold the shape together.

Key Information I will learn...



Castles can have lots of features such as towers, turrets, battlements, moats, gatehouses, curtain walls, drawbridges and flags.

Basic
3D
Shapes

Did you know?

Windsor Castle is the largest castle in England.



Key Questions

1. Can I understand that wide and flat based objects are more stable?
2. Can I understand the importance of strength and stiffness in structures?
3. Do I know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse – and their purpose?
4. Do I know that a façade is the front of a structure?
5. Can I understand that a castle needed to be strong and stable to withstand enemy attack?

End Goal

- Designing a castle with key features to appeal to a specific person/purpose.
- Drawing and labelling a castle design using 2D shapes.
- Designing and/or decorating a castle tower on CAD software.
- Constructing a range of 3D geometric shapes using nets.
- Creating special features for individual designs.
- Making façades from a range of recycled materials.
- Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design.
- Suggesting points for modification of the individual designs.