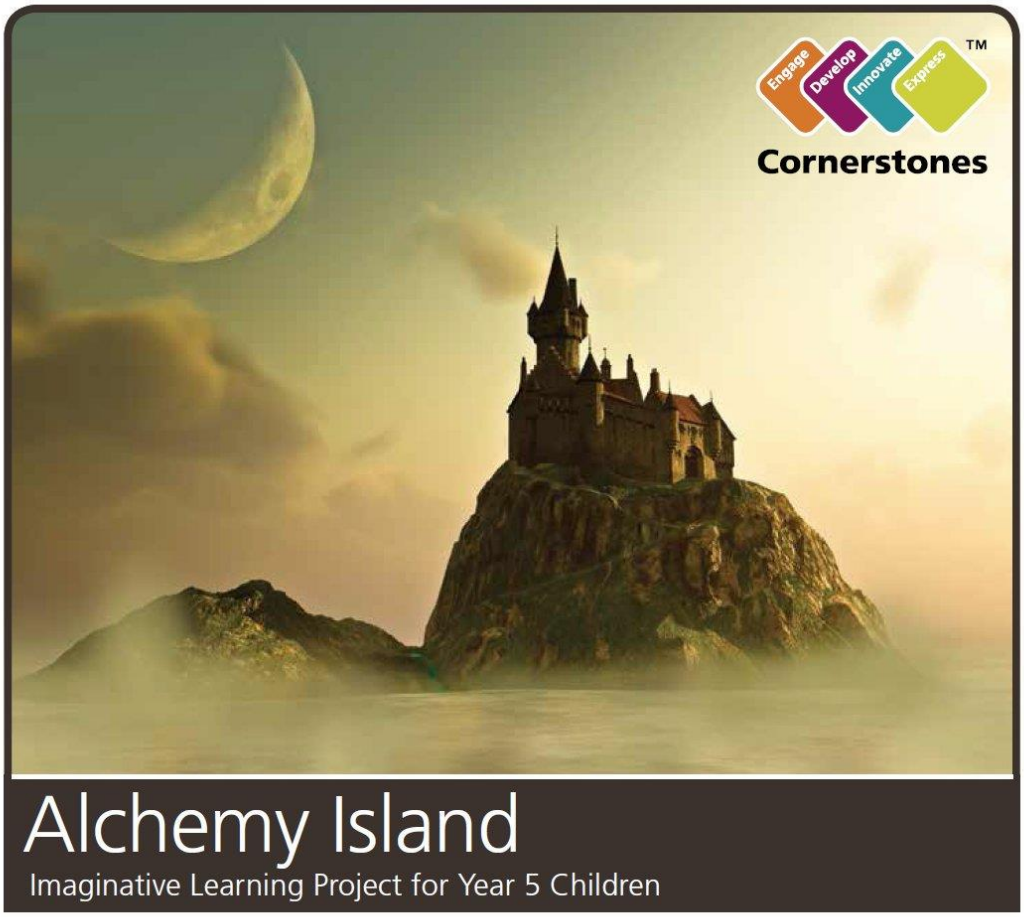
Fairfields
PRIMARY SCHOOL

My learning journey through:



It's time to suspend your disbelief and open your mind – we are going on a journey to Alchemy Island!

Key Vocabulary

Glossary

conductor	A substance that allows electricity or heat to flow through it.
durable	Lasting a long time, without wearing out or becoming damaged.
fantasy	Something imagined that is very different from real life.
malleable	A material that is easily changed into a new shape.
mythical	Imaginary or not real, especially in stories.
potion	A liquid or substance that is believed to cure illness or have a magical effect.
precious	Rare, important or valuable.
property	The way a material behaves, looks and is structured.
sieve	To remove large solids from a liquid.
supernatural	Forces that cannot be explained by science.
thermal	Relating to heat. For example, a thermal conductor will let heat flow through it.
x-axis	The horizontal axis on a map or graph.
y-axis	The vertical axis on a map or graph.

Knowledge that will help me on my journey:

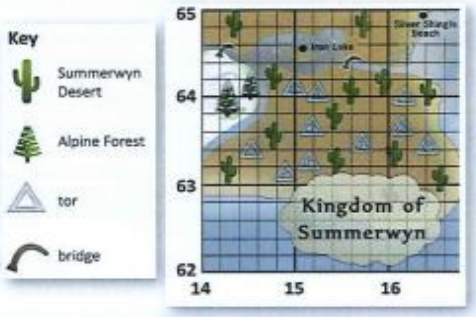
Alchemy Island

What is alchemy?

Alchemy is an ancient study of how to turn basic metals into gold. Alchemists used metals, salts, acids and many other chemicals in their attempts to make gold. They also tried to create potions that would cure all diseases and allow people to live forever. This was all in a time before people understood science as well as they do today.

Maps and coordinates

Maps have been used for thousands of years to help people find their way around unfamiliar areas. Coordinates are used to pinpoint a specific location on a map and are usually written in brackets. The coordinates (156,644) show the position of the bridge on the map below. The first three numbers refer to the position along the x-axis of the map, and the second gives the location along the y-axis. Symbols on the map show particular features of the area. Maps have a key that lists the symbols and what each of them represents.



Properties of materials

The properties of a material refer to its appearance, behaviour and structure, for example, whether it is hard or soft, rigid or flexible. There are a variety of ways the properties of materials can be tested.

Property	Test
hardness	Squeeze the material between two fingers. If the material squashes, it is soft.
magnetism	Test the material with a magnet. If the material is attracted towards it, it is magnetic.
transparency	Shine a torch through a sample. If all the light shines through the material, it is transparent. If some of the light shines through, it is translucent. If none of the light shines through, it is opaque.
electrical conduction	Add the material to a simple series circuit containing a lamp and battery. If the lamp lights up, the material is an electrical conductor.
thermal conduction	Warm the material between two hands and place on thermochromic sheet, which changes colour when it is heated. If the sheet changes colour, the material is a thermal (heat) conductor.

Metals

A metal is a solid material that conducts heat and electricity and that is often hard, strong and shiny. The properties of a metal determine its uses. Electrical wiring, for example, is made from copper because it is a very good conductor of electricity. Precious metals, such as gold and silver, are expensive and decorative so they are used to make jewellery.

Metal	Properties	Uses
 **gold (Au)**	shiny yellow, malleable, non-magnetic, good conductor of electricity and heat	jewellery, wire, money, tooth fillings, electrical components
 **silver (Ag)**	shiny, malleable, non-magnetic, excellent conductor of electricity and heat	jewellery, mirrors, cutlery, ornaments, money
 **iron (Fe)**	dull, strong, malleable, magnetic, good conductor of electricity and heat, rusts easily	bridges, railings, machinery, steel production
 **copper (Cu)**	shiny reddish-brown, malleable, non-magnetic, excellent conductor of electricity and heat	wiring, motors, coins, piping

What I'd like to learn…

The end of our journey…..

Science	Date
- Materials can be grouped according to their basic physical properties. Properties include hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism.	
- Some materials (solutes) will dissolve in liquid (solvents) to form a solution. The solute can be recovered by evaporating off the solvent by heating.	
- Some mixtures can be separated by filtering, sieving and evaporating. Sieving can be used to separate large solids from liquids and some solids from other solids. Filtering can be used to separate small solids from liquids. Evaporating can be used to separate dissolved solids from liquids.	
- A material's properties dictate what it can be used for. For example, cooking pans are made from metal, which is a good thermal conductor, allowing heat to quickly transfer from the hob to the contents of the pan.	
- Reversible changes include heating, cooling, melting, dissolving and evaporating. Irreversible changes include burning, rusting, decaying and chemical reactions.	
Design Technology	**Date**
There are many rules for using tools safely and these vary depending on the tools. E.g. A chisel should be used with the cutting edge pointing away from their body.	
All tools should be cleaned and out away after use and should not be used if they are loose or cracked.	
Materials should be cut and combined with precision, e.g pieces of fabric could be cut with sharp scissors and sewn together using a variety of stitching techniques.	
Testing a product against a design criteria will highlight anything that need improvement or redesign. Changes are often made to a design during manufacture.	
Computing	**Date**
Creating, selecting and combining a range of texts, images, sound clips and videos for given purposes could include creating a web page, slide show presentation, short film or an animation.	
Using prior knowledge and experience of computing skills can be applied to create content using unfamiliar programs or apps.	
Geography	**Date**
Compass points can be used to describe the relationship of features to each other or describe the direction of travel. Accurate grid references identify the position of key physical and human features.	