

Respecting nature's power: What Makes the Earth Angry? (Rocks)

BIOLOGY AND GEOGRAPHY



Overview and rationale:

Volcanoes and earthquakes are the incredible natural phenomena that our children learn about in this topic. It encompasses the crossover between Geography and Science and looks at examples of the impact that these events have historically had on people. It gives our children the chance to investigate rocks and soils and effectively how our amazing planet works, as well as building on their enquiry and archaeological skills from their topic on pre-historic Britain. Disasters are part of life across the world and it is in this topic where our children gain a greater understanding of what can be done to support others who are affected by the Earth's power; Year 3's charity is The Red Cross and visits from the charity's representatives enhance our children's sense of respect and responsibility for supporting everyone in our human race.



SCIENCE LEARNING STATEMENTS

Area of Learning	Skills and Knowledge
Scientific Enquiry and applying knowledge in context	I can raise my own relevant questions about the world around me.
	I can be given a range of scientific experiences including different types of scientific enquiry.
	I can start to make my own decisions about the most appropriate type of scientific enquiry I might use to answer questions.
	I can set up simple practical enquiries, comparative and fair tests. I can recognise when a simple fair test is necessary and help decide how to set it up.
	I can talk about criteria for grouping, sorting and classifying; use simple keys, with some help.
	I can recognise when and how secondary sources might help me to answer questions that cannot be answered through practical investigations.
	I can make systematic and careful observations. I can help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.
	I can begin to look for naturally occurring patterns and relationships; begin to decide what data to collect to identify them.
	With help, I can take accurate measurements using standard units, learn how to use a range of equipment, such as data loggers and thermometers, appropriately.
	I can collect and record data from my own observations and measurements in a variety of ways: notes, bar charts, tables. I can use standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse the data.
	With help, I can look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.
I can use relevant scientific language to discuss my ideas and communicate my findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions.	
With support, I can identify new questions arising from their data, making predictions for new values within or beyond the data they have already collected and finding ways of improving what I have already done.	

GEOGRAPHY LEARNING STATEMENTS

Area of Learning	Knowledge and Skills
Locational and place knowledge	I can locate the world's countries, using maps to focus on Europe: environ-mental regions, key physical or human characteristics, countries, and major cities.
Fieldwork	I am able to use simple equipment to measure and record.
Use of basic geographical vocabulary	I continue to develop a wider geographical vocabulary, using terms such as routes, community, clouds, and rainfall, key, urban, rural, human, and physical to describe places or geographical features in different ways.
Using globes, maps and plans	I can understand need for a key. I understand the purpose of maps.
Human and physical: enquiry skills and communication	I can explain volcanoes/ earthquakes in simple terms. I can communicate geog. Information in a variety of ways, including through maps and writing at length

GEOGRAPHY VOCABULARY

Human Geography	settlement, urban, rural, town, city, region, Europe
Physical Geography	landscape, hills and mountains – N.B. including UK names, e.g. Pennines, Grampians, Cambrians, Southern Uplands, Cotswolds (North and South Downs etc.), coast, Rural, climate, erosion, deposition, earthquake, volcano, Alps, mountainous, desert, geology, minerals, rock types, rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil
Other useful vocab	globally significant, land use, mountains, equator, hemisphere, differences/similarities, compare/contrast, city/country/continent, Atlas/map/globe, change/ effect, interaction between physical and human processes, formation, interconnected and change over time
Specific content including country and capital city names	Pompeii, Italy, Europe, Ring of Fire

SCIENCE VOCABULARY

minerals, rock types, rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, peat, sandy/chalk/clay

SCIENCE NATIONAL CURRICULUM OBJECTIVES

- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
- describe in simple terms how fossils are formed when things that have lived are trapped within rock
- recognise that soils are made from rocks and organic matter

HISTORY LEARNING STATEMENTS

Area of Learning	Knowledge and Skills
Historical Enquiry	<p>I can answer historically valid questions.</p> <p>I can use sources of information to help me answer questions about the past in sentences.</p>
Historical Communication	<p>I can present recalled or selected information in a variety of ways.</p> <p>I can write sentences to describe some of the main events, people and changes in the history of Britain and the wider world.</p> <p>I am beginning to use place value in the context of timelines.</p>

HISTORICAL VOCABULARY

Key	<p>millennia, century/ decade, BC/ BCE, AD/ CE, era, time period, similarities, differences, evidence, primary/secondary sources, ancient, modern, archaeology, archaeologist, contrasts, trends overtime, influence, significant, impact</p>
Skills	<p>interpretation, facts/opinion, evidence, chronology - constructing a timeline, ordering artefacts, research, enquiry, comparison, reliability, continuity, significance, discussion, argument, reasoning, historically valid, draw contrasts, analyse trends</p>
General	<p>process of change, landscape, settlements, climate</p>
Specific	<p>Pompeii</p>



'CORE' KNOWLEDGE

1) I know that Earthquakes are a build-up or pressure and when that pressure releases it causes a shaking of the ground.
2) I know that volcanoes erupt due to the pressure build-up of the tectonic plates.
3) I know that a Tsunami is a giant wave that can occur through earthquakes or volcanic eruptions.
4) I know that the earth is made up of 4 layers (Inner core, Outer Core, Mantle and Crust).
5) I know that rocks can occur naturally or be man-made. REVIEW: Interpret and report: ROCK REPORT
6) I know that soil is made up of different things (air, mineral, water and organic materials)

'ADDITIONAL' KNOWLEDGE

a) I know that tectonic plates are constantly moving and that this can cause the friction which causes an earthquake.
b) I know that the epicentre is the middle of the earthquake and the energy ripples out from this point.
c) I know that an earthquake is measured by a seismograph.
a) I know that the liquid in a volcano is called magma and when it is outside of the volcano it is called lava.
b) I know that most of the Earth's volcanic activity can be found in the 'Ring of Fire' (Pacific Ocean)
c) I know that a volcano can be active, extinct or dormant.
a) I know that a Tsunami can travel at speeds of 500mph.
b) I know that Tsunami is a Japanese word meaning harbour wave.
c) I know that before a Tsunami happens the water usually recedes.
a) I know that the crust is the layer of the Earth that we stand on and that this is the thinnest layer.
b) I know the Mantle is the heaviest layer and makes up 85% of the Earth's weight.
c) I know that the temperature of the Inner core is as hot as the sun.
a) I know that the 3 types of naturally occurring rocks are: igneous, metamorphic and sedimentary.
b) I know that metamorphic rocks are made through the process of heat, pressure or both together, sedimentary is layers compacted igneous is through heating and cooling e.g. lava rocks.
c) I know that fossils are made through layers of sediment compacting down on remains and water washing away leaving minerals.
a) I know that there are 4 layers of soil (bedrock, rocky soil, sub soil and <u>top soil</u>).
b) I know that there are 4 processes of soil and that these all happen at the same time, all the time!
c) I know that there are different soil types (Clay, Loamy and Sandy).

MUSIC

Controlling sounds through Singing

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
<ul style="list-style-type: none"> - Pupils should be taught to play and perform in solo and ensemble contexts, using their voices and playing musical instruments with increasing fluency, control and expression - Sing in unison and in a simple round 	<ul style="list-style-type: none"> - Sing with an awareness of being in tune and with expression - Have an awareness of pulse internally when singing/keeping in time) - Consider how to change the dynamics of your voice to reflect the meaning of the song 	<ul style="list-style-type: none"> - Know that singing in a group can be called a choir - Know that a person who the choir or group follow is called a conductor - Know that songs can make you feel different things e.g happy, energetic or sad - Know that singing as part of an ensemble is fun, but that you must listen to each other - Know that a round is when groups start singing one after another, so there voices overlap 	<p>Choir, conductor, ensemble, pulse, diaphragm, two-part songs, round, dynamics</p>

Controlling sounds by Playing (and Performing)

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
<ul style="list-style-type: none"> - Play musically with increasing confidence and control 	<ul style="list-style-type: none"> - Treat instruments carefully and with respect. - Rehearse and perform their part within the context of the song. - Listen to and follow musical instructions from a leader. - Communicate the meaning of the words and clearly articulate them. - Talk about the best place to be when performing and how to stand or sit. - Record the performance and say how they were feeling, what they were pleased with what they would change and why. 	<ul style="list-style-type: none"> - Know and be able to talk about the instruments used in class - Know and be able to talk about: <ul style="list-style-type: none"> *How performing is sharing music with other people, an audience - it can be to one person or to each other. *how you need to know and have planned everything that will be performed. *How lyrics must be sung or rapped clearly and with confidence *How a performance can be a special occasion and involve an audience including of people you don't know *How a performance is planned and different for each occasion *How it involves communicating feelings, thoughts and ideas about the song/music 	<p>names of instruments being played, audience, performance, composition, appraise, polish, refine feedback</p>

Creating and developing musical ideas (Improvisation and Composing)

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
<ul style="list-style-type: none"> - Develop an understanding of musical composition, organising and manipulating ideas within musical structures and reproducing sounds from aural memory. - Combine different sounds to create a specific mood or feeling. 	<ul style="list-style-type: none"> - Plan and create a section of music that can be performed within the context of the song. - Talk about how it was created. - Listen to and reflect upon the developing composition and make musical decisions about pulse, rhythm, dynamics and tempo. - Record the composition in any way appropriate - Use sound to create abstract effects - Effectively choose, order, combine and control sounds (texture/structure). 	<ul style="list-style-type: none"> -Know and be able to talk about: <ul style="list-style-type: none"> *A composition: music that is created by you and kept in some way. It's like writing a story. It can be played or performed again to your friends. *Different ways of recording compositions (letter names, symbols, audio etc.) 	<p>names of instruments being played, audience, performance, composition, pulse, rhythm, texture, dynamics, compose, beats, louder, softer, soundscape</p>

Responding and reviewing (Appraising)

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
<ul style="list-style-type: none"> - Listen with attention to detail. - Listen carefully and recognise high and low phrases. - Use musical words to describe a piece of music and compositions. - Use musical words to describe what they like and don't like about a musical piece. - Use these words to identify where music works well/needs improving. 	<ul style="list-style-type: none"> - Confidently identify and move to the pulse. - Think about what the words of a song mean. - Discuss how the song makes them feel. - Listen carefully and respectfully to other people's thoughts about the music. - Copy Back – Listen and sing back - Internalise the pulse in music. - Begin to use musical dimensions vocabulary to describe music – duration, timbre, pitch, dynamics, tempo, texture, structure. 	<ul style="list-style-type: none"> -Know 4 songs from memory and who sang them or wrote them (across the year) -Know the style of the 4 songs. -Choose one song and be able to talk about: <ul style="list-style-type: none"> *Its lyrics: what the song is about *Any musical dimensions featured in the song, and where they are used (texture, dynamics, tempo, rhythm and pitch) *Identify the main sections of the song (introduction, verse, chorus etc.) *Name some of the instruments they heard in the song 	<p>Lyrics, chorus, verse, musical dimensions – duration, timbre, pitch, dynamics, tempo, texture, structure, rhythm, phrase, pulse, emotions, feelings, reasons, describe, internalise, instrument families e.g. woodwind, brass, strings, sections.</p>

Listening and applying knowledge and understanding (Theory)

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
<ul style="list-style-type: none"> - Listen with attention to detail and recall sounds with increasing aural memory - Create repeated patterns with different instruments. - Improve work, explaining how it has been improved. - Recognise the work of at least one famous composer (linked to genre of the half term) 	<ul style="list-style-type: none"> - Play with a sound-then symbol approach. - Use silence for effect and know symbol for a rest (duration). 	<ul style="list-style-type: none"> - Know how to find and demonstrate the pulse. -Know the difference between pulse and rhythm. - Know how pulse, rhythm and pitch work together to create a song. - Know that every piece of music has a pulse/steady beat. - Describe different purposes of music in history/other cultures. 	<p>composer, steady beat, lyrics, chorus, verse, musical dimensions – duration, timbre, pitch, dynamics, tempo, texture, structure, rhythm, phrase, pulse, emotions, feelings, reasons, describe, instrument families e.g. woodwind, brass, strings, sections, story, poem, visualise</p>

Stimulus - Composers/Musicians/Artists/Styles

Popocatepetl (Sing Up)

Genre of the half term – Folk

ART AND DESIGN

Exploring and Developing

Exploring and developing ideas	Explore ideas for different purposes.
	Question and make thoughtful observations.
Evaluating and developing work	Explore the roles and purposes of artists, craftspeople and designers working in different times and cultures.
	Adapt their work according to their views and describe how they might develop it further.
Annotate work in sketchbook.	

Drawing Using a Variety of Materials (Recap)

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
<p><i>Use their sketchbooks to collect and record visual information from different sources.</i></p> <p><i>Use different media to achieve variations in line, texture, tone, colour, shape and pattern.</i></p>	<ul style="list-style-type: none"> - Begin to use the side of the pencil to add shading to detail. -Begin to use shape and colour to represent reflection. -Plan, refine and alter their drawings as necessary. - Recognise the difference between hatching and cross-hatching. -Sketch lightly, know that there is no need to use a rubber to correct mistakes - Use a sketchbook to plan, collect and develop ideas. Record media explorations and experimentations as well as try out ideas. 	<ul style="list-style-type: none"> -Know how to show basic facial expressions (happiness, sadness) in art and observe the composition and proportion of a range of people's different facial features. -Know how to use different grades of pencil to shade and to show different tones and texture. -Know that H pencils are lighter and B pencils are darker. -Know how to apply the techniques of hatching and cross hatching when drawing. 	<p>Cross hatching, hatching, contour hatching, lighter shading effect, pressure, angles, different pencil densities, dimension, observe, H pencils lighter, B pencils darker, depth, dimension, observe</p>

Textiles/Collage (Y4 knowledge and skills)

National Curriculum	Additional Skills	Knowledge	Key Vocabulary
<p><i>-To develop techniques, including their control and their use of materials, with creativity, experimentation and an increasing awareness of different kinds of art, craft and design.</i></p> <p><i>-To create sketch books to record their observations and use them to review and revisit ideas</i></p> <p><i>-To improve their mastery of art and design techniques, including drawing, painting and collage with a range of materials.</i></p>	<ul style="list-style-type: none"> -Match the tool to the material -Selects resources for their collage based on the suitability of the colour, shape, texture and pattern suiting the purpose. -Combine skills more readily -Choose collage or textiles as a means of extending work already achieved -Cut and tear materials with some accuracy. 	<ul style="list-style-type: none"> -Know that a sketchbook can be used to collate ideas and begin a planning process. -Know how to sort and group materials for different purposes e.g. colour, texture, purpose, form -Know how to care for equipment and use them safely. -Know how to produce more intricate patterns and textures. -To know that materials can be layered to give different effects. 	<p>Collage, form, tools and names, texture, reclaimed, structure, sculpture, object, tear, fold, crumple, strengthen, strong, weak, crumple, fold, arrange, layer, opaque, translucent, transparent, cut tear, crease, score, fray, mosaic.</p>

Artist/Style/Activities

Hot and cold collage showing the stages of volcanoes.

School Value	Topic relevance: How/when/where/why is it needed?
Resilience	<ul style="list-style-type: none"> - The people of Pompeii needed great resilience to rebuild their lives, as do people who suffer from natural disasters today. - The volunteers working for the Red Cross have great resilience in supporting those across the world who need it most following natural disasters.
Respect	<ul style="list-style-type: none"> - We all show great respect for our planet and the physical processes that occur.
Responsibility	<ul style="list-style-type: none"> - We understand that we have great responsibility in looking after our planet and each other. This is shown through the support shown for the Red Cross and all of our class charities.
Kindness	<ul style="list-style-type: none"> - The British Red Cross illustrates kindness in giving and supporting those who need it most. We show that kindness in the way we support the Red Cross and other charities across our school.
Pride	<ul style="list-style-type: none"> - We can be proud of the way in which we support the Red Cross and show kindness, respect and responsibility in empathising and supporting those less fortunate than us.

Possible 'higher order' questioning

Remember	What are the three different rock types?
Understand	Why do volcanoes and earthquakes start?
Apply	How did Vesuvius impact on the inhabitants of Pompeii? Why didn't they know what was going to happen?
Analyse	What did you find when you did your soil analysis from your garden? What can you infer from your findings?
Evaluate	What would happen if Urmston was on a tectonic plate? How would our lives need to change?
Create	If you were a leader in Pompeii and you knew that Vesuvius was about to blow, what would you do?

Possible Enrichment activities	Earthquake hits Year 3!
	Now Press Play

Year Group Charity	<i>I understand the role of the Red Cross as they help give humanitarian aid in crisis events.</i>
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