

## GEOGRAPHY

-Name and locate counties and cities of the UK, geographical regions and their identifying human and physical characteristics, key topographical features and land use patterns and understand how these have changed over time.

### Locate Nidderdale

Use **Smartboard presentation**, 'Locate Nidderdale on a **Topographical Map of UK**' to identify and locate Nidderdale. Presentation gives children opportunity to locate AONB on a map of UK. Teachers can reveal its shape as a clue. As a class activity, **children label nearby towns and cities and London** (use next 'map' slide to help them). They find AONB on topographical map. This shows it on the Pennine hills. **Children can label other upland UK areas** on the smartboard with teacher. The next slides model how to complete worksheet map activity including differentiated easy version. The final two smartboard slide can be used as discussion of the upper / lower character to the Nidderdale landscape and how the topographical map shows this. ( See also Water and the Valley Resources and suggestion to make landscape in a sand box.) **Children complete and colour own maps using Locate Nidderdale on a Topographical Map task.** Children can add other upland areas of England to their map and devise a colour key.

### Locate important rocks under the surface of Nidderdale

Use **Smartboard presentation** to 'Locate Important Rocks in the Nidderdale Landscape' as a class. Slide 1 provides a semi 3D image of Upper Nidderdale and visible features. Slide 2 adds overlay of geology map to show type of rock underneath. Slide 3 & 4 shows same location on a geology base map with overlay of the limestone areas. Opportunity to discuss the place names of these areas on the map. Slide 5 shows the mineral seams and veins. With teacher, children use slides 6, 7, 8 to place the symbols / pictures on the smartboard map to show where to go to find different useful rocks in Nidderdale.

**Children complete and colour own maps** using **Locate important Rocks in Nidderdale Task sheet.**

## GEOGRAPHY

Describe the physical and human features of an area and understand how they interact and make an area distinctive using place-based examples. Identify hot and cold areas of the world. Show understanding of key physical processes.

-Using a blank map of the world, **children identify north and south poles, main continents of the world and seas and equator. Children identify warmer and cooler parts of the planet.**

-Show *How Nidderdale Began PP*. In pairs or groups, **Children use *The Nidderdale Geology Timeline Resource* and order physical geography events which created the dale.** HA draw own pictures or write own explanations.

It is helpful to show the children a moving image of the movement of tectonic plates of the earth from the internet to help explain how Nidderdale was at the equator. Google and use a Pangea Puzzle for HA children to complete which shows the earth's continents as they used to fit together millions of years ago (e.g. <https://sciencewithmsbarton.files.wordpress.com/2013/10/usgs-world-map-pangaea-puzzle.pdf> )

**-Children learn about the warming and cooling of the planet since the humans first set foot in Britain. Use *How Nidderdale Began PP slides 31-33 and / or Humans Survive PP, slides 29 and 30*** (Prehistory Section of the Education Resources). Use *Climate change in Nidderdale timeline activity* (Prehistory Section). Ext: Can the children find out how climate change affects sea level?

**-Children observe, discuss and circle landscape changes between two time periods pre Ice Age and Ice Age. Show *How Nidderdale Began PP slides 31-33*** Working in pairs or small groups, children print and use the *Image Resource 1 (130,000 years ago)* and the *Image Resource 2(30,000 years ago)* on the website. They circle changes, number them and note down the differences. How has climate change affected the landscape in the past? Discuss findings as a class. Plenary: Are the changes to this landscape physical or human? Is climate change physical or human geography? In the past? Now?

## SCIENCE

**Rocks: Y3/4** Recognise that soil is made from rocks and organic matter.

Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties

**-Children use *Nidderdale Rocks identification and observation sheet* to identify rocks from the area** for a class display and for experiments from a collection provided by the teacher. Children can add to this collection for a class display.

-Make sure children understand describing words on the **rock vocabulary sheet. Children observe and test the rocks to find their different properties** and describe these using words and drawings.

-Once the children have observed and learned some of the properties of the rocks, **children try and match them to their end uses. Use *Rocks Properties and Uses Sheet*** as a matching game or as an information sheet first.

Describe in simple terms how fossils are formed when things that have lived are trapped within rock

**Y5/6** Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago

Show children some real examples of fossils (ask them to bring them in from home). **Think, pair, share what fossils are and how they might have come to be in the rock.**

Show how *Nidderdale Began PP* or tell the *Terry the Trilobite Story.*

Independently, **the children re-order the muddled up story of Terry the Trilobite using the resource sheets** or write their own version trying to use some scientific words.

**Plants: Y3&5** Explore requirements of plants for life and growth and understand seeds and their role in the life cycle of plants.

**Children plant a variety of seeds and observe how they grow** in different growing conditions and soils. Reproduce glacial and interglacial climates. How does this impact on seed growth?

## OVERALL CROSS TOPIC WORK

Ask and answer questions about the TOPIC by selecting and organising relevant information from sources carefully. -Children **construct informed, relevant response using secondary research and other types of enquiry.**

### -What do I know about rocks in Nidderdale?

Children guess topic. Show objects or pictures relating to 'Nidderdale Rocks' e.g. interesting stones, fossils, shells, soil, different coloured sand, ice. Talk partners guess what the link might be between the objects. Reveal topic. Think, pair, share the things we already know and what would we like to find out. **Children begin a simple Rocks KWL chart**, by writing the things they know and things they want to know (K&W). Less able work in pairs. Feedback. Fill in what they learned later (L).

NB: There are other relevant resources which relate to this topic in 'Water and the Valley', especially the resources on Human and Physical Geographical features in Nidderdale.

## HISTORY

-Link to work on Victorians and industry by children using their new geology knowledge to act as prospectors in Nidderdale

Place events in chronological order, use a timeline and historical vocabulary, placing specific events on that timeline. (see Nidderdale Geology Timeline Resource) in Geography section. Make sure the children understand the term 'Prehistory'.

## DRAMA

**Children use Drama and Dance to re-enact key moments in making Nidderdale from earliest times**, for example Pangea, layering of rock, collision of continents, rivers, ice, dinosaurs, people. Use *Nidderdale Geology Timeline Resource* and /or *How Nidderdale Began PP*.

# NIDDERDALE ROCKS

## GEOGRAPHY continued...

- 'Is it Physical or Human Geography?'

**Take a short observational walk in the countryside around the school** or as part of a trip to Nidderdale looking out for rocks or things made of rocks. **Children ask questions and make observational sketches** of the things seen on the walk. What features do we think are human and which physical? Explain physical Geography and that changes in the earth which took place a long time ago made Nidderdale the shape it is. Explain that rocks can be part of human geography too.

Location knowledge. Use terms North, South, East and West, fieldwork observations and grid references to describe physical & human features and routes on a map. Use final slide of **Smartboard presentation, 'Locate Important Rocks in the Nidderdale Landscape'** Show children a) how to use four figure grid references and b) how to look for small signs of underlying mineral rocks on a map; in this case disused mine shafts.

**-Find and write Grid References for old Mine Shafts from map of part of upper Nidderdale on resource sheet.** HA children can look for other references to mining activity on Maps of Upper Nidderdale. Make sure that the children understand the importance of geology (physical geography in locating certain rocks) for human needs (human geography).

-Using **Locate Rocks in Nidderdale Smartboard Presentation, match pictures of locations in Upper Nidderdale to their names and/ or the type of rock they are associated with.** Use current AONB brochure for researching this. Create a Nidderdale Rock Fact file or Report (English).

Collect soil in the different locations and compare soil colours and textures. How does this relate to the rock in that area? (also Science)

## DT

Cooking and nutrition: Prepare and cook a variety of dishes using a range of cooking techniques

Use Slides 11-26 and 30 of *How Nidderdale Began PP* as a stimulus. **Children design and make a cake with different coloured and textured layers to represent the formation of different rocks in Nidderdale.** This cake could be either sweet or savoury and use a variety of different thicknesses and textures of 'layers'.

**Make chocolate rocks.** Research and learn about igneous and sedimentary rocks. Melt chocolate to form igneous rocks and grate and press chocolate to form sedimentary rocks. Note the different textures (crumbly versus hard and shiny)

## ART & DESIGN

Increase awareness of different kinds of art, craft and design. Use range of materials. Learn about great artists.

**Children research land art and the use of natural materials for drawing and artwork:** charcoal, chalk, natural pigments, clay mark-making on different types of rock.

Research artist Andy Goldsworthy. **Children choose and sketch the pieces which most inspire them –** and which relate to rocks. Using this work as inspiration collect natural objects (with permission) and **create and photograph own land art**

## ICT

**-Create an animation of the formation of Nidderdale rocks** or the story of **'Terry the Trilobyte'** using a basic animation programme such as 2Simple's 2Animate.

**-Create a 'rocks' database** using drawings and describing their properties.

## **Nidderdale Rocks Topic Web Notes**

- This topic web contains some suggested activities and cross-curriculum links.
- It is designed to be printed on two A4 sheets of paper and then put together and photocopied to form one A3 sheet.
- The text in red denotes a resource which is available to download free from the Upper Nidderdale Landscape Partnership Education Resources pages.
- Text in other colours denotes a Curriculum objective.
- The text in bold denotes an activity that the children will be doing.
- 'PP' is short for PowerPoint Presentation.