

This information book does what all information books should do: excite the reader’s interest, curiosity and sense of wonder where none may have existed. Meredith Hooper, an award winning science writer, brings her expertise and storytelling skills to the subject of the earth’s history, beginning with the contemplation of a pebble and a question. The absorbing text and illustrations take the reader through the 480 million years of the pebble’s journey, from the spectacular furnace of volcanic eruptions to the cool seashore and the grassy field.

There’s a useful timeline at the back of the book to help children grasp the enormity of geological time and the very recent appearance of humans in that story of the planet.

Overall learning aims of this teaching sequence:

- To explore an information text in depth
- To come to know a complex history through talk, reading, writing, drawing and drama
- To present understandings in writing, drawing and performance

This teaching sequence is designed for a Year 3 or Year 4 class.

Overview of this teaching sequence.

This teaching sequence is approximately 2 – 3 weeks long if spread over 10 – 15 sessions.

It explores a number of themes, including:

- The history of the Earth
- Discovering the extraordinary in the ordinary
- The insignificance of humans in the history of Earth
- The inevitability of change

National Curriculum 2014

Reading: (Word reading / Comprehension)

Develop their understanding and enjoyment of stories and non-fiction.

Developing knowledge and skills in reading non-fiction about a wide range of subjects.

Justify their views about what they have read: with support at the start of year 3 and increasingly independently by the end of year 4.

Listen to and discuss a wide range of non-fiction and reference books or textbooks

Retrieve and record information from non-fiction

Use dictionaries to check the meaning of words

Writing: (Transcription / Composition)

Consolidating their writing skills, vocabulary, grasp of sentence structure and knowledge of linguistic terminology. Enhance the effectiveness of what they write as well as increasing their competence.

Build on what they have learnt, particularly in terms of the range of their writing and more varied grammar, vocabulary and narrative structures from which they can draw to express their ideas.

Plan their writing by discussing writing similar to that which they are planning to write in order to understand and learn from its structure, vocabulary and grammar

Speaking and Listening:

Articulate and justify answers, arguments and opinions;

Use spoken language to develop understanding through imagining and exploring ideas in role play drama;

Select and use appropriate registers for effective communication.

Cross Curricular Links

History:

- Know and understand significant aspects of the history of the wider world
- Understand historical concepts such as continuity and change, cause and consequence, similarity, difference and significance and use them to make connections, draw contrasts ... frame historically-valid questions and create their own structured accounts, including written narratives and analyses.

Art and Design:

- Produce creative work, exploring their ideas and recording experiences.
- Become proficient in drawing, painting, sculpture and other art, craft and design techniques.

Design and Technology:

- Select from and use a wide range of materials and components, including construction materials ... according to their functional properties and aesthetic qualities

<p>Science</p> <ul style="list-style-type: none"> • 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 soil are made from rocks and organic matter. 	
<p>Teaching Approaches</p> <p>Reading aloud and rereading Storyboards 'Tell me' Role play Reading journals Writing in role Role on the wall Visualising Shared writing</p>	<p>Writing Outcomes</p> <p>Poetry Story maps Fact files Instructions Writing in role Narrative descriptions Book making Diary entry</p>

Teaching Sessions

Prior to beginning the teaching sequence, prepare a class reading journal to capture responses and discussion as the sessions unfold. Visit <http://por.clpe.org.uk/teaching-approaches/reading-journals-17> to find out more about reading journals and their use, and to see some classroom examples from other practitioners.

Session 1: Talking and responding about a pebble and creating collaborative poems

- **Learning Objective: Children will participate in a circle time activity, giving first impressions of a pebble, describing its features and making connections to their own experiences.**
- Introduce a pebble to the class. In a circle, invite children to pass the pebble around, each saying one word that describes it, encouraging them to say something different from their peers. Ask the children to explore their senses, saying what they can see, smell, hear and feel. List their ideas on the left side of a flip chart.
- Pass the pebble around the circle again, this time asking the children for a phrase expressing a personal memory, an association or connection with a pebble. List these on the right side of the flip chart. What does it remind you of? What do you remember about it?
- Collaboratively, as a whole class, create a poem selecting descriptive words from the list on the left for the first line, followed by a phrase chosen from the list from the right. Continue the pattern until the poem feels complete. Some words can be repeated to make the poem more effective.
- Re-read to check that it makes sense, making changes to improve the meaning, shape and sound of the poem. The class can then read the poem aloud as a choral performance.
- Finish the session by asking children if there is anything they would like to know about the pebble, any questions they'd like to ask, and scribe these on the flip chart. They may have theories about how the pebble came to be, and these can be added too.

You might like to extend the learning for your children by asking them to create their own poems using a similar pattern for selecting words and phrases in pairs or small groups. Display these in a class anthology on working wall along with the lists of ideas from the circle activity.

Session 2: Reading aloud, golden lines and illustration

Learning Objectives: Children will be able to identify themes and conventions in a wide range of books, and discuss writing in order to understand and learn from its structure, vocabulary and grammar.

Children will be build vocabulary by interpreting and responding to visual images they produce.

- Read aloud the first three pages of the book, showing the illustrations.
- The children can close their eyes and listen as you read again. They can listen out for words and phrases they particularly like, 'golden lines' that really stand out because they help to create vivid 'pictures in your mind'. Then show the text on a screen and highlight the memorable words and phrases children remember. Ask them to say why they've chosen them.

- In small groups, using pastels or paints, children can work on large, folded sheets of thick black paper or card to illustrate the visualised volcano formation scene on one side and the cooled, still scene on the other. They can then annotate their pictures with their chosen 'golden lines'. Finished work can be displayed in the classroom.

Session 3: Reading aloud, drama and story mapping

Learning Objectives: Children will be developing their understanding of non-fiction text using simple story mapping techniques

- Read the text from the third double spread of the book ('In the middle of summer...') up until 'It is 340 million years ago.'
- The children can imagine they are a pebble in the river. How would they feel? What would happen to them as they travel to the sea? Watch <http://www.youtube.com/watch?v=RP1F4au2MpA&feature=youtu.be> and ask them move to the music as though they are a pebble. Are there times when you move slowly or more quickly? Do you sink to the bottom at any point on your journey? What moves you along? You might like to take photos or a video of the movements to annotate and analyse with the children, displaying these on your working wall to remind them of their work.
- Story map the journey of the pebble - using the children's experiences through the video clip and dance/movement to enhance the descriptions - from the mountain, its transformation into a pebble and its onward journey to the sea. They can add annotations to their maps to explain the processes and plot the time.

You might like to extend the sequence here by writing a description or short story of the pebbles journey so far. Where has it travelled? What has it seen? Where is it heading? Explore personification, as a means of adding interest and effect, and write from the pebbles point of view

Session 4: Similes, metaphors and environmental art

Learning Objectives: Children will create poetry based on the images within the text using similes and metaphors

- Look at the pages showing fish. Read the sentence 'Creatures swarm and slither in the warm sea.' What does this make you think of? How might they move? Predict how fish might move based on prior knowledge.
- Watch the video clips at <http://www.discovery.com/tv-shows/other-shows/videos/superswarm-fish-vortex.htm> or <http://www.youtube.com/watch?v=tGOKngtkt4&feature=youtu.be>. Can you move like a swarm of fish as whole class? How are the fish joined? What does the movement look like? Think about the movements as you work together to create the swarm of fish. Collect words on a flip chart as the children come up with them.
- The children could try to create similes and metaphors to describe the movement of the fish in the warm seas. You could collect their ideas on a flipchart or IWB and then model the use of a simple two line structure where L1 uses a metaphor or simile (e.g. A whirling hurricane) and L2 describes the mood or tone of the movement from the previous line (e.g. intense)
- You might like to consider use the similes and metaphors by other poets to gain a different perspective, using these to write longer poems. Look at Rachel Rooney's poem *Fishing* as a model which uses metaphor <http://www.poetryline.org.uk/poems/fishing-856>

You might like to extend the sequence here and link to Art and Design. Collect environmental rubbings from the man-made school environment that might suggest the texture of the scales of the fish. Use these rubbings to extend your similes and metaphors to focus on developing poetry inspired by the physical features of fish.

Session 5: Freeze frame, thought tracking and descriptive writing

Learning Objectives: Children will be developing their understanding of non-fiction text and timelines using freeze frame and thought tracking

- Read the next three double spreads. Invite children to work in groups of 4-6 to create a freeze frame, choosing one of the scenes in the dinosaur spreads: 300, 155, 67 or 65 million years ago, ensuring each period or scene is covered by at least one group. Provide access to the relevant text.
- Listen to http://www.youtube.com/watch?v=T1_wnREGllg&feature=youtu.be to help set the scene.
- Once they have agreed and rehearsed their scene, ask each group to freeze in chronological order. Use thought tracking by asking individual children to say what and where they are (they may be a boulder, a mammal or flower, for example), what they can see around them, what is happening and how they feel. This can be recorded using video or photographs and a Dictaphone. You might also collect their ideas on flip chart paper and display in the classroom.
- On postcard-sized paper, children can use the thoughts inspired by the freeze frame activity to write a descriptive paragraph in role. They should describe the scene and their place in it. These can be read aloud in groups and then each group can stick their pieces of writing on a large sheet of paper with the date recorded at the centre. They might like to add illustrations or printed photos of their freeze frames.

Alternatively the postcards could be pegged onto a class washing line to emphasise the timeline. Additional information, labels and illustrations or photos might be added to the washing line from the timeline at the back of the book or as new information is learned throughout the remainder of the teaching sequence.

Session 6: Environmental art and poetry

Learning Objectives: Children will think about the movement of 'buzzing insects' and dragonflies and create poetry

- Look back at the image of the dragonfly on the page which starts 'The surface of the earth begins to rise...' and re-read this page until 'buzzing insects.'
- Look at the images in the Dragonflies frame. What can you see? Have you ever seen dragonflies before? How do they move? Collect words or phrases that the children come up with on a flip chart or they could collect these for themselves on copies of the image.
- Look at the photo gallery on <http://www.arkive.org/emperor-dragonfly/anax-imperator> or the video at http://www.youtube.com/watch?v=VZ29mr7_6Rs&feature=youtu.be and consider the way in they move. The children can explore the speed and movement
- Drawing from the inspiration of the words collated from the illustration, images, video, movement and discussion invite the children to write a phrase on a strip of paper that best describes or encapsulates dragonflies. In groups of 6 children can order and arrange their strips to create a poem describing the dragonflies.
- The children could collect twigs and maple keys and create dragonflies using the instructions from <http://twigandtoadstool.blogspot.ca/2010/07/delightful-dragonflysa-twig-craft.html?m=1> to display with their group poems.

Session 7: Reading aloud, and storytelling

Learning Objectives: Children will be building a varied and rich vocabulary and draft a plan for a told story

- Read the next five double spreads, from 'The river flows in a new course,' ... to 'It lies, smooth and warm, in the sun.'
- Make a list of the animals present in this section of the book. Imagine, from an animal's point of view, the story of their time on Earth, when they lived and what it was like. The children can write the name of their animal (or draw it) in the centre of a sheet of A3 paper and record their ideas for their 'story'.
- Rehearse a telling of the story of their animal to a partner. The children take turns in telling a section of the story while their partner asks questions to help them consider additional information. Swap roles and continue telling the story, refining their retellings for presentation to the class.
- End the session with a performance by some of the pairs; telling their story to the class. As a 'response partner' other pairs can say what they liked about the story. As an 'editing partner' other pairs might suggest ways in which the performance could be improved or added to for impact or to be more appropriate for their audience.

You might like to extend the sequence by adding a session here. Ask the children to create a musical accompaniment to their 'story' using percussion instruments or simple body percussion and voiced sounds. These could be recorded and added to the video using film editing software. Pairs of children could work together to accompany each other's story.

Session 8: Re-reading aloud, storytelling and drafting**Learning Objectives: Children will be building a varied and rich vocabulary using and applying their story telling skills**

- Re-read the pages and complete the book by reading the final pages.
- Use the 'Tell Me' approach to talk about likes, dislikes, connections and puzzles. Refer back to the list of questions after session 1. Have any of these now been answered? What do we still need to find out? How will we do this?
- Arrange to go on a pebble hunt to a local park, river or beach if they are convenient to you. Alternatively, you might set up shop bought pebbles in an area of the school playground for the children to 'find'. Each child can return to class with a pebble of their choice and, in pairs, they can begin telling an imaginary story about their pebble and the adventures it has had. They can draw on their knowledge gained from the book or create a highly personal story.
- The children could then map their stories, adding annotations and embellishments remembered from their paired storytelling, and begin drafting written sections of their text. They could consider a range of possible publication formats and think about the kind of writing they need to create to make it suitable for that purpose.

You might like to have a range of different genres and book styles available to look at to prompt discussion around the possible ways the stories can be published. Simple folded books, pop-up books, fold out posters etc might all make interesting final versions of their story, which merges non-fictional and fiction elements. Building a class display around a variety of non-fiction and fiction text types might help to reinforce the features present in each and provide a useful reference point for the children.

Session 9: Re-reading aloud, editing, redrafting and publishing**Learning Objectives: Children will be building a varied and rich vocabulary and use drafting, editing and publishing skills to construct written accounts of the life of their pebble**

- With a *response partner* each child will share their work from yesterday. Response partners should comment on the way the writing makes them feel (as a reader or listener) and share ideas about how the writing can be made more effective and suitable for the purpose.
- With an *editing partner*, children will then edit, redraft and refine their written text from the previous session, examining and trialling a range of ways to build cohesion through their use of conjunctions and connective phrases between paragraphs.
- Independent writing time will allow children to reflect on what their editing and response partners have suggested. The writing should then be proof-read and prepared for publication. The children should have had the opportunity

Extend this sequence here by adding a session on book making techniques. The children could make mini-books about their pebble using information learned from the book, from knowledge about the local area where they 'find' their pebble and from their imagined stories.

Session 10 and 11: Role on the wall and writing in role**Learning Objectives: Children will use drama and visual approaches to understand how the characters feel**

- You might like to refer to <https://www.youtube.com/watch?v=aqHMznHE-a0> and information on the Natural History Museum website <http://www.nhm.ac.uk/visit-us/whats-on/temporary-exhibitions/britain-million-years/index.html> as stimulus/background information for this session.
- Look back at the page of the people sitting on the bank of the river, that starts 'Floods leave the pebble ...'
- In small groups, role-play as the family on the river bank. Think about how the characters interact with each other and about their everyday life beyond the picture and text. How did they get here? Where do they live? Why do they come to this place?
- In session 10, use role on the wall to explore feelings and characteristics of the boy in this image. Draw around one of the children and use this as an outline of the boy. Have the children write about how he is feeling inside the outline and words that describe him on the outside. The children might like to also consider the other characters in the picture.
- In sessions 11, line a wall with lining paper and have the children explore the story of their day as a cave painting. They can story map the events of their day.

- Using the cave painting, write about a day in your life as the boy or one of the other people in the picture. This might take the form of pictures and symbols, much like cave paintings or early tribal artwork, or you could write in words using simple sentences and basic grammatical structures, as early speech might have appeared.

Session 12: Soundscapes and poetry

Learning Objectives: Children will explore the sounds of the animals and the environments of the book and create soundscapes and poetry

- Look at the page with the sabre-toothed tiger. Show this picture on the IWB or provide the Sabre-toothed tiger frame for groups of children. What sound is it making? Why? What other sounds might you hear in the environment? Listen <http://www.youtube.com/watch?v=SkFx45IxlV4> (a tiger as a substitute for a sabre-toothed tiger).
- Write words and phrases around the image on the frame or collect a list of them on a flip chart. Consider what the sounds remind you of and draw out some comparisons to use for similes and metaphors.
- Go outside and find a safe place to sit. Listen to the sounds of the environment. Imagine the sounds you would hear in the environments of the book – listen to <http://www.youtube.com/watch?v=cYgU9mvSiZg&feature=youtu.be> to experience the sounds of a jungle or explore the British Library Sounds Archive at <http://sounds.bl.uk/> to support the children's work.
- What other animals have we seen in the book? What environments are represented? What sounds would these animals make? What environmental sounds might you hear? Children, in pairs of small groups, could role play these animals and scenes, thinking about the sounds they hear in the environments. Collect words to describe their animals and the sounds they make.
- Create a soundscape to match one of the images from the book. Think about onomatopoeia, using the sounds you have created as the L1 of a poem, with L2 being either a simile, metaphor or example of imagery and L3 being a descriptive line using the vocabulary built up during the lesson.
- Perform their poem with their accompanying soundscapes, joining 3 line stanza that belong together as for the images in the book.

Session 13 and 14: Information research

Learning Objectives: Children will discuss a wide range of non-fiction and reference or textbooks

- Using books and /or the internet, children can explore further information about the history of the Earth (see websites below.) They can look back at the questions they raised at the beginning of the unit of work and seek answers to any unanswered questions. Or they can follow lines of enquiry they have become interested in through reading the book.

Some suggested websites (All accessed June 2014)

<http://www.nhm.ac.uk/kids-only/>

<http://www.nhm.ac.uk/kids-only/dinosaurs/>

<http://www.nhm.ac.uk/nature-online/earth/index.html>

<http://paleobiology.si.edu/blastPast/index.html>

http://www.nms.ac.uk/our_museums/national_museum/explore_the_galleries/natural_world/earth_in_space.aspx

http://www.nms.ac.uk/our_museums/national_museum/explore_the_galleries/natural_world/restless_earth.aspx

Children could browse a variety of sources and report back on a couple of new, interesting things they have discovered. Create individual fact files or create a class **Did You Know?** information book, and illustrated. Children might also like to recommend particular sources and say why they liked them.

They could produce a presentation from this research in a form of their choice (e.g. a power, a short documentary, a class information book, etc). The unit of work could culminate in them producing their own culminating exhibition which could include things like a live volcanoes, models and dioramas of the environments, artwork and information boards.

Session 15: Assembly performance

Learning Objectives: Children will prepare poems and play scripts to read aloud and to perform, showing understanding through intonation, tone, volume and action

- The children could select their favourite parts of the work they have completed to perform in a school assembly or to present to parents.
- They could draft and edit a play script for their assembly, including significant aspects of the timeline and the journey of the pebble across the periods represented.
- In small groups they could rehearse and perform short pieces of narrative writing, examples of poetry and their musical accompaniments. The children might choose appropriate sections of the book to be read between the sections they have written, to help punctuate the performance. Choose narrators to read the book sections.

Use and Application of Phonics and Spelling:

The following words could be used to exemplify learning at phonic phases:

Phase 5: /ai/ alternatives:	against, places, mountain, rain, etc
/igh/ alternatives:	like, nine, rind, five, sky, sides, rising, etc
/ee/ alternatives:	treacle, beneath, deeper, creeping, seas, underneath, piece, each, heat, seeps, pieces, leafless, eases, breathe, sea, etc
Split digraphs:	nine, times, five, shines, inside, ice, places, slice, mountainside, eroded, broken, time, worm-like, millipedes, slide, spiders, hide, waves, white, etc

High Frequency Words: *highlight these in the text and in the writing generated through the text.*

Spelling: 'ed' endings: melted, jagged, smoothed, eroded, happened, etc
 'ing' endings: covering, glowing, boiling, creeping, spilling, meat-eating, loosening, flowing, etc
 '-e' then '+ing': nibbling, colliding, rattling, scraping, leaving, etc
 'double consonant' then '+ing' endings: stripping, dragging, etc
 '+s' plurals: rocks, oceans, shakes, sides, slabs, folds, buckles, cracks, slides, shifts, freezes, etc
 'ly' endings: slowly, gradually, etc

Use and Application of Vocabulary, grammar and punctuation:

The following words could be used to exemplify learning in the areas of vocabulary, grammar and punctuation :

Sentences: **Year 3** *expressing time, place and cause using conjunctions*
Year 4 **fronted adverbials** (Under the volcano; the rain pours down; etc)

Text: **Year 3** *introduction to paragraphs as a way to group related material (examples on most pages)*
Year 4 *Use of paragraphs to organise ideas around a theme (examples on most pages)*
Appropriate choice of pronoun or noun within and across sentences to aid cohesion and avoid repetition (... the sun heats it, and the frost cools it.)

Punctuation: **Year 4** *use of commas after fronted adverbials (see above examples)*

Terminology for pupils: **Year 3** clause, subordinate clause, consonant, consonant letter, vowel, vowel, vowel letter
Year 4 determiner, adverbial