

Digging for Stories

Primary: (ages 11 – 13)

**Interdisciplinary
(mathematics, literacy and
language, history)**

Students undertake an archaeological dig in the grounds of the school. They use various mathematical techniques to find and record the location of objects. Using this data and careful observation of the objects themselves they attempt to establish the history of the objects they find and how they might have come to be in the location found. Creative writing provides a tool through which they can attempt to articulate possible narratives to explain the connections. Finally they establish a framework which they can use to categorise the objects and using this framework they create a little ‘museum’ of the objects they found.

Time allocation 6 lesson periods

Subject content Use archaeological methods to gather information
Measuring, chart creation, and data gathering and analysis skills
Recognise how categories are used to order and structure the world around us

Creativity and critical thinking This unit has a **creativity** and **critical thinking** focus:

- Making connections and integrating disciplinary perspectives
- Producing meaningful and original outputs
- Generating and stretching ideas to imagine and appraise alternative outputs

Other skills Collaboration, Communication

Key words archaeology; school dig; measuring; charts; categories; data; dates

Products and processes to assess

This approach to data and analysis will allow students to situate their learning in their ‘discovered’ world whilst asking them to apply critical thinking about how it came to be the way it is. This activity has been designed to develop key skills in measuring and chart

creation whilst nurturing the creative skills of curiosity, inquiry and critical observation. By asking students to consider how objects came to be where they are found, and what their location tells us about their possible histories, the project will enable them to discover the stories of every objects giving them, through these stories, a sense of ownership of these objects. This process instils motivation and excitement in learners as the data becomes theirs and the way they order it can allow them to find alternative ways of living and thinking. At the highest level of achievement, students take an active and engaged role in the dig, clearly understood the exercise and the concepts being deployed, and apply them effectively to the activities they are asked to undertake. They generate many new ideas and are able to justify them effectively.

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Teaching and Learning plan

This plan suggests potential steps for implementing the activity. Teachers can introduce as many modifications as they see fit to adapt the activity to their teaching context.

Step	Duration	Teacher and student roles	Subject content	Creativity and critical thinking
1	Prior to lesson period 1	Teachers should identify an outside location which will become the site (preferably 10 metres by 10 metres) of the excavation or archaeological dig. They should collect a set of objects which they bury in the ground at different depths. These could include clothes (a shoe, piece of cloth, a sock) other man-made objects (a piece of pottery, a spoon or fork) or other historical objects. They might also conceal some interesting rocks, animal bones, etc. It would be best to prepare this some months before the actual excavation so that the ground has the opportunity to settle.		
2	Lesson period 1	The teacher explains to the students that they are going to undertake an archaeological dig to see what objects they find in the school grounds, and explore how they might have got there. The teacher proceeds to explain that archaeological digs are very precise and scientific. Across the site of the dig they will create a frame using string and wooden pegs so that they will be able to accurately mark the location of every object they find. Every object should be given a unique code which will locate the precise place at which it is found. The class should visit the site, measure its outer limits (e.g. 10 meters by 10 metres). Then returning to the class room, each child using a ruler and pencil should produce a scale model of the site marked out in equal sections (for instance 1cm squares using the scale 1:100). Students should work out how to do this and complete their scale drawings.	Measuring and making calculations Producing an accurate scale drawing of the dig site	Understanding the context and making connections between archaeology, history, and their school grounds
3	Lesson period 2	Students go out to the dig site and using string and wooden pegs mark out the site as accurately and precisely as possible. Then working in groups of three, each group is given a 1 meter square section of the dig site to excavate. Each group should have a trowel (small hand spade), dustpan and brush, and small plastic bags. They are asked to dig their section to a depth of 30 cms. All the soil and other things they find they should brush into the dustpan and study carefully. Any objects (including stones, bones, rocks, insects, etc.) they find should be put in the small plastic bags individually and labelled. The label should indicate exactly where it was found using a three dimensional reference number (width in cms, length in cms, depth in cms and which square was being excavated). Using the charts they created, they should indicate exactly where on the chart the object was found.	Recording accurate details about an object's location Working in a small group Attending to detail	
4	Lesson periods 3 and 4	Students continue to dig. They can start on a new square. If so they again dig to a depth of 30 cms. Or they can continue their existing square, this time digging down to 60 cms. Again students should record everything they find and place in small plastic bags carefully labelled.	Ability to work independently outside of the classroom Ability to collaborate with others when carrying out data collection	

		This process can be repeated across a number of lessons, until sufficient objects and materials have been collected.	Technical skills and accuracy of collecting data	
5	Lesson period 5	<p>Students look through all the objects they have collected and decide a system of categorisation. For instance, all rocks could be put together in one category, all animal bones or insects in another category, human artefacts in another category.</p> <p>Students should then research the objects and work out what they are and their possible history. They can use the internet to source information. See resources section for some useful links:</p> <p>When they have completed their research each student should write one very short story about how the object got to the site. The teacher may choose to facilitate a discussion at this point about what 'assumptions' (about history, the object, the area, the people involved etc.) students have made in their story and what alternatives there could have been</p> <p>Objects discovered at the same depth, even if they are from different parts of the dig, will date from the same period and may be connected. Each student should select 2 or 3 objects found at the same depth and write a short story explaining the connection between the objects and how they arrive at the site.</p>	<p>The ability to sort into categories</p>	<p>Generating ideas for categorising objects and for their possible history</p> <p>Making connections between objects and their imagined history</p> <p>Producing a meaningful and original story</p> <p>Stretching ideas to imagine a second story from alternative perspectives</p>
6	Lesson period 6	<p>With the writing that they have produced, students should now decide how to display the objects as if they were in a museum. The object categorization should determine which exhibits are displayed together. The writing the students have created should be used to explain the history and possible source of the objects.</p> <p>Students will work in groups to arrange the displays.</p> <p>When they are finished they should visit the displays of others and ask questions, make suggestions for improvement or discuss issues that arise.</p>	<p>Technical skills in the presentation of materials</p> <p>Ability to critically comment on other people's ideas</p>	<p>Generating novel ideas for an interesting display</p> <p>Reflecting on and appraising their own work and the work of others</p>

Resources and examples for inspiration

Web and print

- For information on different kinds of rocks and stones and where they came from the following websites can be explored:
 - <http://www.nsta.org/publications/news/story.aspx?id=52970>
 - https://education.usgs.gov/lessons/schoolyard/RockStories_TeacherGuide.pdf
 - <https://video.nationalgeographic.com/video/short-film-showcase/a-rocks-fantastic-imaginary-journey-through-time-and-space>
- For information on different kinds of bones the following website can be explored:
 - <http://www.nhm.ac.uk/natureplus/community/identification/teeth-bones?fromGateway=true>

Other

- Plenty of string and wooden pegs to mark out the area of the dig
- Measuring tape of at least 10 metres
- Paper, pencils and rulers
- Trowels (hand spades), dustpans and brushes, small plastic bags and labels

Opportunities to adapt, extend, and enrich

- Follow-up activities could strengthen links to geography and history (for example, by studying a historical period in the local area) or mathematics (for example, by looking at how archaeologists use maths in their everyday work)

Creativity and critical thinking rubric

- Mapping of the different steps of the lesson plan against the OECD rubric to identify the creative and/or critical thinking skills the different parts of the lesson aim to develop

	CREATIVITY Coming up with new ideas and solutions	Steps	CRITICAL THINKING Questioning and evaluating ideas and solutions	Steps
INQUIRING	Make connections to other concepts and knowledge from the same or from other disciplines	2,5,6	Identify and question assumptions and generally accepted ideas or practices	2
IMAGINING	Generate and play with unusual and radical ideas	5,6	Consider several perspectives on a problem based on different assumptions	5,6
DOING	Produce, perform or envision a meaningful output that is personally novel	2-6	Explain both strengths and limitations of a product, a solution or a theory justified on logical, ethical or aesthetic criteria	
REFLECTING	Reflect on the novelty of solution and of its possible consequences	5-6	Reflect on the chosen solution/position relative to possible alternatives	5-6