Microarchaeology

Standards Covered

NGSS:

4-LA1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

5-PS1-1 Develop a model to describe that matter is made of particles too small to be seen.

5-PS1-3 Make observations and measurements to identify materials based on their properties.

Common Core:

ELA/Literacy –

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.

RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

W.5.7 Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.

W.5.8 Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.

W.5.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

RST.6-8.1 Cite specific textual evidence to support analysis of science and technical texts.

RST.6-8.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

RST.6-8.9 Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

WHST.6-8.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

WHST.6-8.9 Draw evidence from informational texts to support analysis, reflection, and research.

SL.8.5 Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.

Mathematics –

MP.2 Reason abstractly and quantitatively.

MP.5 Use appropriate tools strategically.

Guiding Question

How can the scientific method be used to answer questions on an archaeological dig?

Procedure

Video - Watch as explains how microarchaeology is used in Ashkelon to determine the diet of the people who used to live there

Junior Archaeologist Assignment

Interactive Homework

Word Wall

Micro – Something small. The word microarchaeology refers to the study of microscopic things found in the dig field.

Junior Archaeologist Assignment

Look at some of the things that you eat under the microscope! Ask a teacher if you can borrow a microscope for the weekend and one or two plastic slides (note-you can also make your own slides by cutting a hole out of a small piece of card stock and using transparent tape to hold your item in place). Before you use the microscope, watch this quick video on microscope safety to make sure you are using correct techniques.

Choose four or five fruits that you eat that can be peeled apart into a paper-thin layer that is translucent (light can be seen through). Some examples of this might be different kinds of fruits, vegetables, or liquids that can be dropped on your slide. In your log book, draw what you see and label important features. Think to yourself-what do these foods have in common? What is different?

Do you think that you would see the same thing if you looked at this food in a microscope 2,000 years later? What are the characteristics that would help you identify this food?

Interactive homework

There are a lot of different ways to make your own microscope for very cheap to explore at home. Below are some examples. Ask a parent for help, and start exploring the world of microorganisms around you!

Make Your Own Microscope Ideas-

Foldscopes

Mr. Wizard household microscopes

Using your smartphone to make a microscope

Some ideas of things to look at –

Water from outside

Onion skin

Leaves

Soil

Fingernails