

ELEMENTARY

SOCIAL STUDIES, MATHEMATICS
History, Using Evidence, Measurement & Data

Elementary School Lesson Plan 1: Artifact Detective

Teacher Instructions

When Pompeii was rediscovered centuries after it was buried by the eruption of Mt. Vesuvius, many valuable artifacts were taken from the ground and sent to museums for display. No one took field notes on exactly where an object was found or what else it was found with, leaving many important details unknown. These missing facts, or context, help historians understand more about an artifact, such as how an object might have been used and by whom.

For example, in the Atrium gallery of Pompeii: The Exhibition, you will see beautiful sculptures of women's heads, called "busts." Without knowing where they were originally found in Pompeii, many questions remain. Were they found in a temple and supposed to represent goddesses? Were they found in someone's home and are wives of wealthy merchants? Perhaps archaeologists found them in a garden, and they came from statues celebrating favorite myths and legends.

Similarly, you will see two bronze keys in the Atrium gallery on your class visit to the exhibition. If these artifacts were found at a house, they were most likely used to lock the doors or gates. However, history tells us that keys had many other uses in ancient Rome. They locked shop and warehouse doors, cupboards, and even caskets. Knowing where in Pompeii these keys were found would help us make a much better guess about how they were used.

Scientists and historians have to work together in order to preserve these objects while learning from them. As your class will discover in this lesson, it sometimes even requires becoming an artifact detective! Students might be surprised to find out that people in Pompeii had many of the same careers we do today such as restaurant owners, artists, teachers, businessmen, carpenters, bakers, artists, athletes, and bankers (or mon-

ey lenders). How do we know? The artifacts tell us! In Part 1, your students will match collections of artifacts from Pompeii: The Exhibition with the person they might reveal to us: a doctor, gardener, fisherman, gladiator, or a wealthy woman.

Continuing their investigation, students will see that some artifacts from the kitchens of Pompeii look like they could be in a modern kitchen: colanders, pans, plates, and mugs. Others are a bit more unusual, such as the glirarium, which was a terra cotta pot used to raise and fatten up dormice (small rodents)—a special delicacy on an ancient Roman menu! How do the kitchen and dining wares of ancient Rome compare to those of today? The measurement activity in part 2 uses artifacts from both the Kitchen and the Triclinium (dining room) galleries of Pompeii: The Exhibition to discover the differences. Students will need a metric ruler to measure the objects and examples of a modern-day kitchen colander, plate, mug, pitcher or jug, and cooking pot to compare to their counterparts from Pompeii.

Many of the priceless artifacts you see at Pompeii: The Exhibition were once simple, everyday items from people's houses. These items are fascinating because they give us an idea of what life was like for the average person in ancient Rome, and not just for the emperors, senators, and famous gladiators we often read about in books. What would the tools and objects your students use every day tell an archaeologist 2000 years from now about life in the 21st century? If these archaeologists of the future sifted through your trash and recycling, what would its contents—its artifacts—tell them about your community? Students will dig in and write their field notes in Part 3, which also works well as a homework assignment.



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ANSWER KEY

Part 1

1.c, 2.a, 3.e, 4.d, 5.b

Part 2

The answers for #1-5 will vary based on the actual object measured. Students should also provide one example of how the items from Pompeii and today are the same and one way they are different.

6. Object: Plate

Height	40 mm	4 cm	0.04 m
Diameter	140 mm	14 cm	0.14 m

7. Object: Mug

Height	98 mm	9.8 cm	0.098 m
Diameter	114 mm	11.4 cm	0.114 m

8. Answers will vary but students will probably choose millimeters or centimeters because the objects being measured are smaller/less than a meter

Part 3

Answers will vary based in objects selected, but the chart should be completed with five items and five logical extrapolations from those objects



ARTIFACT DETECTIVE

Student Activity

When Pompeii was rediscovered centuries after it was buried by the eruption of Mt. Vesuvius, many valuable artifacts were taken from the ground and sent to museums for display. No one took field notes on exactly where an object was found or what else it was found with, leaving many important details unknown. These missing facts, or context, help historians understand more about an artifact, such as how an object might have been used and by whom.

For example, in the Atrium gallery of Pompeii: The Exhibition, you will see beautiful sculptures of women's heads, called "busts." Without knowing where they were originally found in Pompeii, many questions remain. Were they found in a temple and supposed to represent goddesses? Were they found in someone's home and are wives of wealthy merchants? Perhaps archaeologists found them in a garden, and they came from statues celebrating favorite myths and legends.

Similarly, you will see two bronze keys in the Atrium gallery on your class visit to the exhibition. If these artifacts were found at a house, they were most likely used to lock the doors or gates. However, history tells us that keys had many other uses in ancient Rome. They locked shop and warehouse doors, cupboards, and even caskets. Knowing where in Pompeii these keys were found would help us make a much better guess at how they were used.

Scientists and historians have to work together in order to preserve these objects while learning from them. Sometimes it even requires becoming an artifact detective! In these activities, you will discover what can be learned from the artifacts at *Pompeii: The Exhibition*—and in your own trash!

Terms to Know: archaeologist, artifact, atrium, bronze, casket, ceramic, cesspit, conserve, context, delicacy, diameter, dormouse, lavatory, pitcher, terra cotta



These bronze keys found in one of the largest and most luxurious homes in Pompeii. They were used for complex locks, but Roman locks could only be opened from one side of the door.

POMPEII
THE EXHIBITION

TO WHOM DID THESE ARTIFACTS BELONG?



Part 1: Who's Who

Match each collection of artifacts below from *Pompeii: The Exhibition* with the person they might reveal to us.

- | | |
|--------------|------------------|
| a. Doctor | d. Gladiator |
| b. Gardener | e. Wealthy woman |
| c. Fisherman | |

- _____ Anchor, fishing needle, weights for fishing net, fishing hooks
- _____ Case for medical kit, suction cup, scalpels, tweezers
- _____ Gold and emerald necklace, gold bracelet and rings, pearl earrings
- _____ Bronze helmet, shin guards, spear head, tool for cleaning armor
- _____ Iron hoe, hatchet, rake, sickle

POMPEII
THE EXHIBITION

Part 2: Metric Measures

Some artifacts from the kitchens of Pompeii look like they could be in your kitchen: colanders, pans, plates, and mugs. Others are a bit more unusual, such as the glirarium, which was a terra cotta pot used to raise and fatten up dormice (small rodents) —a special delicacy on an ancient Roman menu!

How do the kitchen and dining wares of Pompeii compare to those of today? Complete this measurement activity using artifacts from both the Kitchen and the Triclinium (dining room) galleries of Pompeii: The Exhibition to find out!

Supplies: ruler with centimeters, colander, plate, mug, pitcher or jug, cooking pot

1. Object: Colander with handle



	<i>Pompeii: The Exhibition</i>	Today
Length	30.5 cm	
Height	16.5 cm	
Diameter	14 cm	
Material	Bronze metal	

Colanders, like this bronze one, were abundant in Pompeian households. The geometric patterns punched into the bowl served as decoration when they were stored on kitchen walls.

a. How are the colanders the same? _____

b. How are the colanders different? _____



Name _____

Class _____

Date _____

2. Object: Plate



Plate

	<i>Pompeii: The Exhibition</i>	Today
Height	4 cm	
Diameter	14 cm	
Material	Clay pottery	

a. How are the plates the same? _____

b. How are the plates different? _____

3. Object: Mug (Tankard)



Ceramic mug or tankard

	<i>Pompeii: The Exhibition</i>	Today
Height	9.8 cm	
Diameter	11.4 cm	
Material	Ceramic pottery	

a. How are the mugs the same? _____

b. How are the mugs different? _____



Name _____

Class _____

Date _____

4. Object: Jug or pitcher



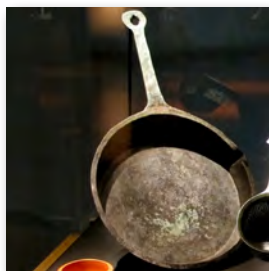
Ceramic mug or tankard

	<i>Pompeii: The Exhibition</i>	Today
Height	21 cm	
Diameter at widest part	17.8 cm	
Material	Ceramic pottery	

a. How are the pitchers the same? _____

b. How are the pitchers different? _____

5. Object: Cooking pot



*Bronze cooking pot.
Pans hung in the kitchen
and were used by
household slaves to
prepare meals for family
and guests.*

	<i>Pompeii: The Exhibition</i>	Today
Height	11.7 cm	
Diameter at opening	13.5 cm	
Diameter at widest part	20 cm	
Material	Bronze metal	

a. How are the pots the same? _____

b. How are the pots different? _____



Name

Class

Date

In the United States, we usually measure length in inches and feet. Other countries use the metric system, including Italy where Pompeii is located. Scientists and historians usually measure with the metric system, too. Practice converting centimeters to both millimeters and meters by using the dimensions of two Pompeiian artifacts from above: the plate and the mug. The pitcher's measurements are converted for you as an example.

Object: Pitcher



	Millimeters	Centimeters	Meters
Height	210 mm	21 cm	0.21 m
Diameter	178 mm	17.8 cm	0.178

6. Object: Plate



	Millimeters	Centimeters	Meters
Height		4 cm	
Diameter		14 cm	

7. Object: Mug



	Millimeters	Centimeters	Meters
Height		9.8 cm	
Diameter		11.4 cm	

8. Within the metric system, which unit do you think is better for measuring artifacts, millimeter, centimeter, or meter? Why?

POMPEII
THE EXHIBITION

Part 3: Field Notes

There is one item in the kitchens of ancient Rome that you will definitely not find in a house today: the toilet. A kitchen counter held a hearth for cooking and a sink with a wastepipe that was hooked up to the drain of a lavatory. All kinds of waste went into the lavatory, including broken dishes, old lamps, jewelry, and food scraps. For archaeologists, these underground holding tanks, called cesspits, are like gold mines! In 2007, a huge pit was found under Herculaneum. Herculaneum is a town near Pompeii that was also buried by the eruption of Mt. Vesuvius in 79 A.D. The objects found in there tell us what daily life was like for the people in ancient times.

If archaeologists of the future sifted through your classroom's or family's trash and recycling, what would its contents—its artifacts—tell them about you and your community? You may want to wear rubber gloves for this dig!



A counter in the culina, or kitchen, held a hearth for cooking and a sink with a wastepipe that hooked up to the drain of a nearby toilet.

The glirarium has spiral shelves inside, two food tanks, and multiple air holes. It encouraged dormice to hibernate in captivity where they were fattened until they became a delicious snack.



POMPEII
THE EXHIBITION

Supplies: ruler with centimeters, colander, plate, mug, pitcher or jug, cooking pot

Artifact	Information
Chicken bones	People's diets included protein from animals.
Broken cell phone	It was cheaper to throw away some forms of technology and get a new one rather than get the old one repaired.
1.	
2.	
3.	
4.	
5.	



ELEMENTARY

SCIENCE, MATHEMATICS, FINE ARTS, SOCIAL STUDIES
Earth Science, Measurement & Data, Visual Art, Geography

Elementary School Lesson Plan 2: The Art of Climate

Teacher Instructions

Pompeii is located in a region of Italy with a mild, sunny climate. Farmers in the countryside and gardeners in the city could grow almost any kind of food. Romans took great pride in their gardens. A home's peristyle, or inner garden and courtyard, was the center of family life. Gardens were filled with trees, shrubs and flowers of many kinds. Just outside of town, farmers could grow crops three of the four seasons in the year. What were the seasons like for the people of Pompeii? How did their climate compare to your own? In Part 1 of this activity, your students will create a bar graph to answer these questions and more.

In addition to a nice climate, the soil in Pompeii was very fertile. The land closest to Mount Vesuvius was used to grow grapes for wine. Layers of ash from long-ago eruptions had enriched the soil with minerals. Pompeii became famous for its vineyards and wines and the city filled with statues, frescoes, and mosaics of Bacchus, the Roman god of winemaking. One fresco from Pompeii shows Bacchus next to the oldest image of Vesuvius that has ever been found! See if you can spot this image on a sign inside Pompeii: The Exhibition. Much of what we know about life in ancient Rome, including the kinds of crops and plants that grew in the Mediterranean climate, comes from these frescoes discovered in Pompeii.

A fresco is a painting made on wet plaster. In Pompeii, frescoes decorated the walls in almost every room of the house. The topic of the frescoes often matched

the uses of the room. Two frescoes with fruit appear in the Triclinium gallery in Pompeii: The Exhibition. The triclinium was the dining room, so pictures of food were popular. What kinds of frescoes do you think should decorate a classroom? What people, object, or activity should they show? In Part 2, your students will design and paint a fresco to decorate the walls of your school. Student can work individually or collaboratively in groups to make their frescoes. The materials listed below will make one fresco. Adjust the amount of supplies based on your class size.

Materials

- Plain white paper
- Pencils and colored pencils
- Plastic plate
- Acrylic, tempura, or watercolor paints
- Paint brushes
- Spray bottle with water
- 1-inch pieces of drinking straw
- Plaster of Paris mix
- Items for preparing plaster
 - o Measuring cups
 - o Water
 - o Plastic/disposable bowl for mixing
 - o Plastic spoon for stirring



ELEMENTARY

SCIENCE, MATHEMATICS, FINE ARTS, SOCIAL STUDIES
Earth Science, Measurement & Data, Visual Art, Geography

ANSWER KEY

Part 1

1. (a.) January; (b.) August
2. 30°
3. June and September
4. Answers will vary based on your climate
5. Answers will vary based on your climate
6. Answers will vary but should address that crops need a good climate to grow well
7. Fall; it's too warm in August to wear heavy clothing
8. The temperatures in this area during the year are neither extremely hot nor extremely cold



Name _____

Class _____

Date _____



This fresco from a house in Pompeii shows Mount Vesuvius and Bacchus, the god of winemaking. It is the first known painting of the volcano.

THE ART OF CLIMATE

Student Activity

Pompeii is located in a region of Italy with a mild, sunny climate. Farmers in the countryside and gardeners in the city could grow almost any kind of food. Romans took great pride in their gardens. A home's peristyle, or inner garden and courtyard, was the center of family life. Gardens were filled with trees, shrubs and flowers of many kinds. Just outside of town, farmers could grow crops three of the four seasons in the year. What were the seasons like for the people of Pompeii? How did their climate compare to your own? In Part 1 of this activity, you will create a bar graph to answer these questions and more.

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frescoes with fruit appear in the Triclinium gallery in Pompeii: The Exhibition. The triclinium was the dining room, so pictures of food were popular. What kinds of frescoes do you think should decorate a classroom? What people, object, or activity should they show? In Part 2, you will design and paint a fresco to decorate the walls of your school.



These frescoes of pomegranates and pears were painted on the wall of a triclinium. Fresh fruit was plentiful in Pompeii, thanks to the climate.

Terms to Know: depict, enriched, fertile, fresco, mosaic, pomegranate, temperate, vineyard



Name _____

Class _____

Date _____

Part 1: Climate

Create a bar graph for the monthly temperature averages in Naples, the nearest large city to Pompeii, to see how warm or cold it is in this climate zone.

Month	Average Temperature
January	47°
February	48°
March	51°
April	56°
May	64°
June	70°

Month	Average Temperature
July	76°
August	77°
September	70°
October	63°
November	54°
December	49°

85°												
80°												
75°												
70°												
65°												
60°												
55°												
50°												
45°												
40°												
35°												
30°												
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec

POMPEII
THE EXHIBITION

Name _____

Class _____

Date _____

Answer these questions using the information in your bar graph.

1. (a.) Which month is the coldest? (b.) Which month is the warmest?

2. What is the difference in temperature between the coldest and warmest months?

3. Which two months have the same average temperatures?

4. How do the warmest months of the year in Naples and Pompeii compare to summer where you live?

5. How do the coldest months of the year in Naples and Pompeii compare to winter where you live?



Name _____

Class _____

Date _____

6. The region of Italy around Pompeii has a mild, sunny climate. What effect do you think this climate has on growing crops in the area?

7. For many years, scientists and historians thought that Vesuvius erupted in August of the year 79 A.D. New research suggests it may have happened in October or November. One clue is that some of the people in Pompeii wore heavy clothing when they were killed by the volcano. Which season does this evidence suggest for the eruption? Why?

8. The word “temperate” means mild, or not too extreme. Based on your graph above, why is that a good description for the climate zone where Pompeii is located?



These charred raisins were found in Pompeii. Raisins and grape seeds were found all over Pompeii and Herculaneum. Modern scientists replanted the vineyards of Pompeii and were surprised by how quickly the vines grew.

POMPEII
THE EXHIBITION

Part 2: Art

Pick a room in your school, such as the library, gymnasium, your classroom, cafeteria, or music room to represent in your own fresco. After you select a location, decide on what people, object, or activity your fresco will show for that room. Follow the steps below to complete your project.

Materials

- Plain white paper
- Pencils and colored pencils
- Plastic plate
- Acrylic, tempura, or watercolor paints
- Paint brushes
- Spray bottle with water
- 1-inch pieces of drinking straw
- Plaster of Paris mix
- Items for preparing plaster
 - o Measuring cups
 - o Water
 - o Plastic/disposable bowl for mixing
 - o Plastic spoon for stirring

Steps

1. Use the paper and pencils to design and sketch a rough draft of your picture on the piece of paper before you begin painting. The plaster will dry quickly, so you need to have a design already planned before you begin painting.
2. Mix the plaster of Paris according to the package directions.
3. Use your stirring spoon to spread the plaster on your paper plate until it is a smooth layer, about 1/4-inch thick.
4. Decide where you want the top of your painting to be, based on your sketch.
5. Push the 1-inch piece of straw into the plaster near the top. Do not push the straw all the way through the plate. (When you are finished and your fresco is dry, this will be the hole for hanging your fresco. If you are using a large paper plate, make two holes with straws spaced evenly apart.)
6. Let the plaster set for 10 minutes.

7. Begin painting your masterpiece! The plaster needs to stay wet while you are painting. If it starts to dry and harden, dampen the surface using the spray bottle with water.
8. Let your fresco dry completely overnight.
9. When it is dry, carefully remove the fresco from the paper plate. Pull out the piece of straw, too.

Decorate the Walls

Present your finished fresco to your class. Explain the reasons you chose the particular location in your school and the subject (person, object, activity) of your art. Include the sketch you made before you began the fresco. Hang your 21st century fresco on the wall to decorate the room in your school that you chose, just as the Romans did in the first century.



This fish fresco may have advertised the local fish market or perhaps a shop that sold garum, a flavorful sauce made from fermented fish.

POMPEII
THE EXHIBITION