

Integrated Science

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Morris

April 27 – May 8  
Week 5 & 6



# Schedule and Directions for Weeks 5 & 6

## *Leon High School Distance Learning*

### Integrated Science

#### Week 5 (April 27- May 1):

**Monday-** Unit 14 Vocab foldable (Directions in folder)

**Tuesday-** Unit 14 Vocab Crossword Puzzle

**Wednesday-** Re-Read Unit 14 Reading Passage "Oil Spills" and review the Information Web (complete if not previously done from Week 1)

**Thursday-** Review reading passage and complete Activity G, multiple-choice questions

**Friday-** Complete all work and turn in by 3 PM.

#### Week 6 (May 4 -May 8):

**Monday-** Review Reading Passage and complete Activity I, planning boxes

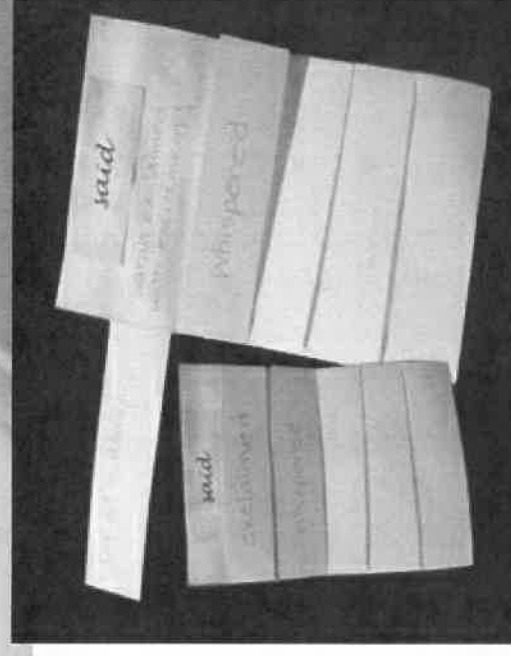
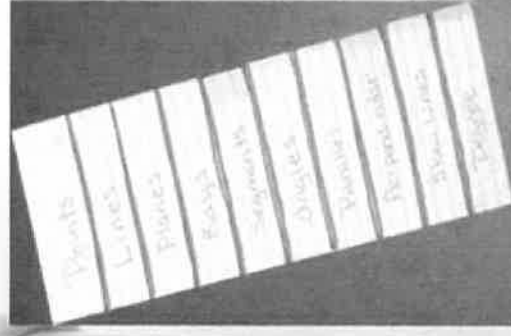
**Tuesday-** Write the 3 paragraphs using your planning boxes from Activity I

**Wednesday-** Review Reading Passage and complete Activity J, short answer (Answer the "What If" question)

**Thursday-** CommonLit assignment, "Pompeii."

**Friday-** Complete all work and turn in by 3 PM.

# Vocabulary Foldable



- 1. Fold a sheet of notebook paper in half like a *hot dog*.
- 2. On one side, cut every third line. This usually results in ten tabs.
- 3. Label the tabs.

## ACTIVITY A Vocabulary

## List 1

1. industrialized *adj.* The word **industrialized** describes a country that has developed large-scale **industries**, such as manufacturing.
2. *Exxon Valdez* *n.* The **Exxon Valdez** was an oil tanker that ran aground in Prince William Sound, Alaska, in 1989.
3. consequences *n.* **Consequences** are the results of earlier actions.
4. rescuers *n.* **Rescuers** are people who save other people or animals.
5. hypothermia *n.* **Hypothermia** is the condition of having abnormally low body temperature.
6. buoyancy *n.* **Buoyancy** is the ability to float or rise in water.
7. aquatic *adj.* The word **aquatic** describes something related to water.
8. mechanical *adj.* **Mechanical** describes something having to do with machinery.

### List 2

1. containment *n.* **Containment** is the act of keeping something from spreading, or the act of **containing** something.
2. encounter *v.* When you **encounter** something, you meet it, usually unexpectedly.
3. habitats *n.* **Habitats** are natural environments where particular organisms live.
4. solution *n.* A **solution** is the result of taking steps to **solve** a problem.
5. restoration *n.* **Restoration** is the act of returning something to the way it was.
6. veterinarians *n.* **Veterinarians** are experts in treating sick or injured animals.
7. minimize *v.* To **minimize** something is to lessen it.
8. monitor *v.* When you **monitor** something, you watch it closely.
9. replenish *v.* When you **replenish** something, you provide a new supply of that thing.
10. extract *v.* When you **extract** something from its source, you use an industrial or chemical process to obtain the substance.

### ACTIVITY B Vocabulary Review

**Directions:** Look at List 1 or List 2 to find the words your teacher is thinking about.

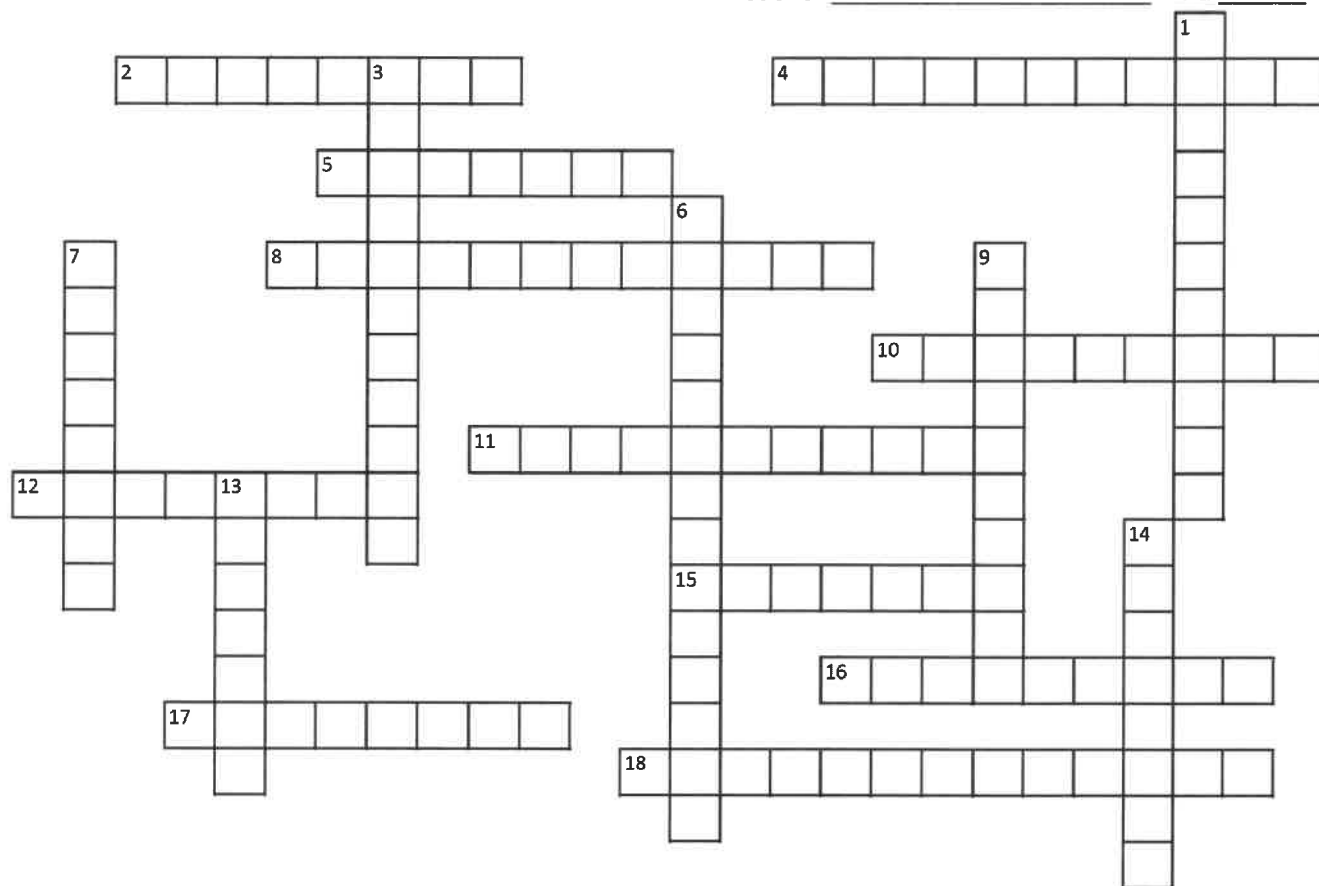
Tally

**UNIT 14 CROSSWORD**

Name \_\_\_\_\_

Teacher \_\_\_\_\_

Pd \_\_\_\_\_

**Across**

- 2. people who save others
- 4. to prevent the spread of something
- 5. to remove something from its surroundings,  
using chemical or industrial means
- 8. the effect or result from an action
- 10. to come across something unexpectedly
- 11. condition of abnormally low body  
temperature
- 12. reduce
- 15. having to do with water
- 16. to make full or complete again
- 17. ability to float
- 18. doctors who care for animals

**Down**

- 1. returning something back to how it used to be
- 3. the oil tanker responsible for a giant oil spill  
in Alaska in 1980
- 6. having developed large-scale production lines
- 7. the answer to a problem
- 9. Having to do with machinery
- 13. to keep close account of
- 14. where organisms live

## ACTIVITY E Passage Reading and Comprehension

### Oil Spills

Crude oil is an important resource for most people in the world. Because oil is trapped inside and between rocks far underground or under the ocean floor, locating and extracting the oil is very expensive. In spite of the expense, the United States, China, Japan, India, Russia, and other industrialized countries use great quantities of oil and use more every year.

Once oil is extracted, it must be transported to where it will be used. Unfortunately, accidents happen and oil is spilled. Almost all major spills happen offshore and along coastlines, so oil spills are extremely expensive, not only in economic terms but environmentally as well. Oil spills can endanger entire ecosystems. (Part A-#1)

### Environmental Consequences

When an oil spill happens offshore, the spilled oil spreads out across the water, where it floats in a thin layer called an *oil slick*. Oil slicks wash ashore and damage coastal ecosystems. The oil spreads into marshes and wetlands and onto beaches and covers everything in the environment, including animals. Oil spills have life-threatening and harmful consequences for both wetland and marine animals and their habitats. The *Exxon Valdez* and *Deepwater Horizon* disasters each affected 1300 miles of shoreline. The accidents killed dolphins, harbor seals, otters, ducks, and thousands of birds; damaged the habitats of surviving animals; and left many other animals to struggle. (Part B-#2)

Mammals and birds depend on fur or feathers to insulate or protect them from the cold water. When their fur or feathers become oiled, it affects their natural waterproofing. The animals can no longer repel the cold water, so they cannot keep warm and dry underneath their fur or feathers. They risk dying from hypothermia. The oil also causes some animals to lose their natural buoyancy, so they have difficulty floating. Others can no longer fly or swim and they drown. Birds and some mammals may also swallow the oil when they try to clean themselves. The oil poisons them. An even more serious consequence results when oil kills tiny organisms called *plankton*, which are food producers. Plankton provide much of our oxygen and serve as the base of aquatic food webs. (Part B-#3)

### Immediate and Long-term Responses

For most oil spills, the first goal is to contain the oil in order to limit the amount of damage the spill causes. Containment reduces the oil's impact on the environment. First responders move into the area immediately with various kinds of containment equipment, including physical barriers that surround the oil. In the case of the BP oil spill, containment was not easily accomplished. Oil continued to

424 spill from the underwater well for almost three months. If a spill is not immediately  
439 contained, wildlife rescue and cleanup begin while containment efforts continue.  
(Part C-#4)

449 Depending on the location and conditions of the spill, several techniques  
460 can be used to clean up the spilled oil. Mechanical techniques include the use of  
475 equipment, such as skimmers, that are designed to capture the spilled oil so that it  
490 can be disposed of properly. Chemical and biological methods are used to change  
503 the composition of the oil and break it down faster. Other methods, such as wiping,  
518 washing, scrubbing, and raking the oil, are used to clean up shorelines. (Part C-#5)

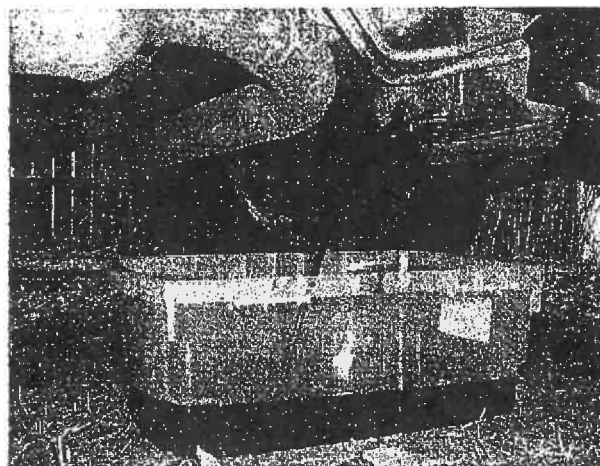


530 While workers get the cleanup started, rescuers arrive to attend to animals.  
542 First, the rescuers try to keep unharmed wildlife safe. They use devices designed  
555 to scare wildlife away from the contaminated area. Then rescuers turn their  
567 attention to wildlife that has already encountered the oil. Wildlife experts capture  
579 birds and mammals and take them to nearby treatment centers for rehabilitation.  
591 At these centers, veterinarians and volunteers do their best to minimize the stress  
604 animals experience in such a crisis. People at the centers carefully monitor the  
617 animals' health and nutrition to help the natural healing process. They gradually  
629 wash the crude oil from the animals' bodies, especially from their eyes and from  
643 their feathers or fur. Washing oil from these body coverings allows the animals to  
657 replenish the natural oils necessary for warmth and buoyancy. (Part C-#6)

666 Just removing oil from the animals isn't enough. Restoration involves assessing  
677 damages, making short- and long-term plans for restoring habitats, and encouraging  
689 animal populations to recover. Along the way, early restoration projects are carried  
701 out. After thorough damage assessment, long-term projects begin. As of 2014,



713 twenty-five years after the *Exxon Valdez* oil spill, 23 of the 28 groupings of affected  
729 species were recovering or had recovered. In 2016, six years after the BP oil spill,  
744 planning was complete, and long-term restoration projects were just beginning.  
(Part C-#7)



755 **Preventative Solutions**

757 In 1989, the *Exxon Valdez* accident was the worst oil spill in U.S. history. People  
772 did not want anything like that to happen again in U.S. waters. The U.S. Congress  
787 passed the Oil Pollution Act of 1990, which required many changes in the shipping  
801 and oil industries. The law inspired changes in international regulations. The  
812 number of large oil spills happening worldwide has decreased significantly since  
823 then. However, the problem of oil pollution has not been entirely solved. Aside  
836 from a huge oil spill like the BP oil spill, most oil pollution of water comes from  
853 the mishandling of oil products. For example, regular people pour over 360 million  
866 gallons of used oil down drains that lead to waterways. Proper disposal or recycling  
880 of used oil can go a long way toward helping to prevent oil pollution in the water.  
897 We can't all help with the huge economic cost of oil spills, but everyone can reduce  
913 the environmental cost of oil pollution. (Part D-#8)

**ACTIVITY F Rate Development**

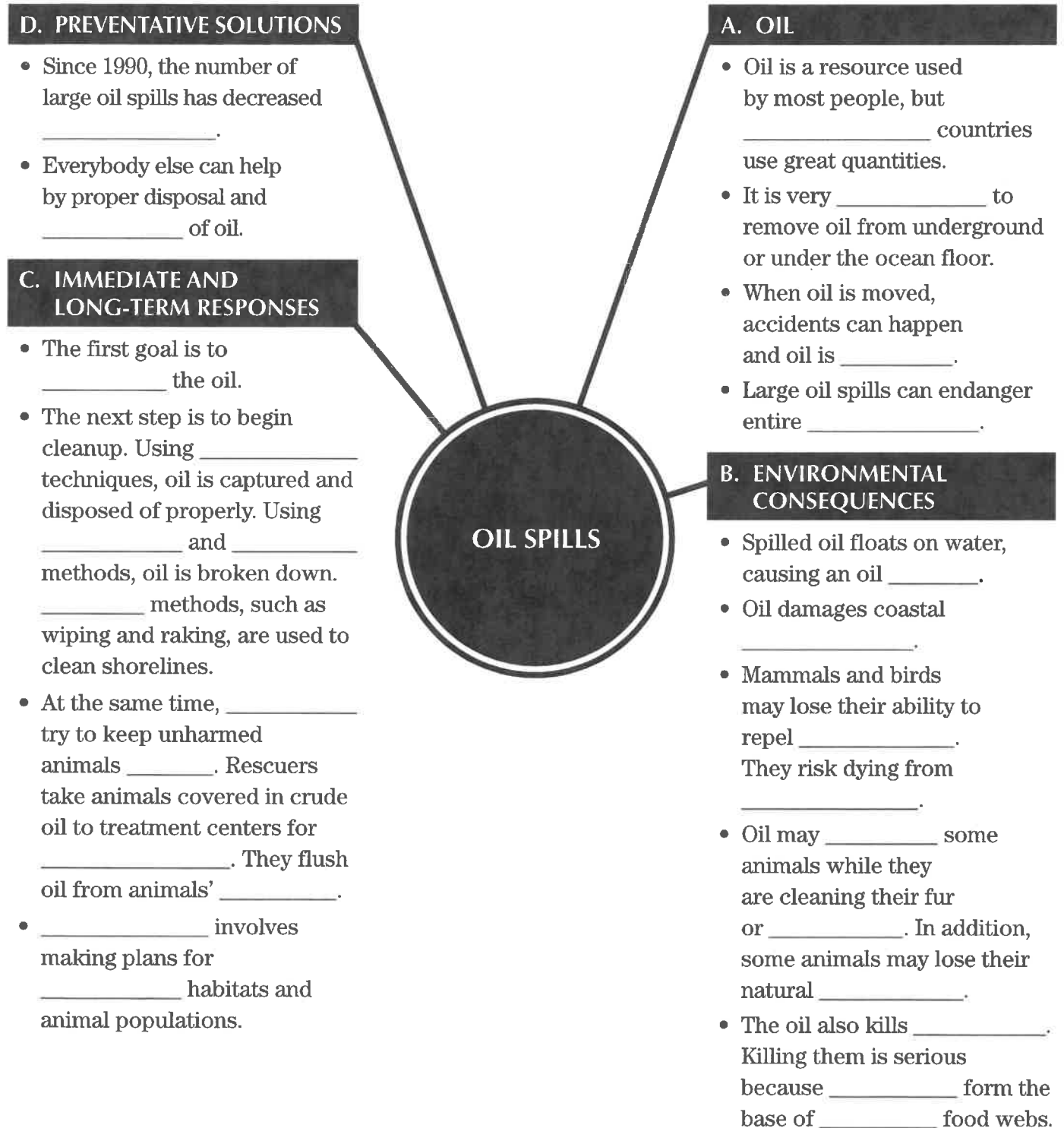
Cold Timing

Practice 1

Practice 2

Hot Timing

# Reproducible N: Information Web for Unit 14



## ACTIVITY G Comprehension—Multiple-Choice Questions

### Multiple-Choice Strategy

- Step 1:** Read the item and think about what it is requesting.
- Step 2:** Read each choice and think about why it might be correct or incorrect. Check the text for evidence as needed.
- Step 3:** Read *all* of the choices, even if you think you know which one is correct.
- Step 4:** From the possible correct choices, select the best answer.

1. (Cause and Effect) **Which of these relationships is *not* accurate?**
  - a. Oil spill → oil on birds' feathers, thus birds can't repel water, thus birds can't keep warm.
  - b. Oil spill → oil on birds' feathers, thus birds swallow oil, thus birds poisoned.
  - c. Oil spill → oil on sea otters' fur, thus sea otters are warmer, thus sea otters protected from cold water.
  - d. Oil spill → oil kills plankton, thus food for some animals is limited, thus some animals die.
2. (Compare and Contrast) **Which of the following comparisons is false?**
  - a. Preventing people on oil tankers and oil rigs from making mistakes would be a better way of solving oil pollution than teaching individuals to properly dispose of used oil.
  - b. When people clean up spilled oil, mechanical methods are used to capture the oil and dispose of it while chemical and biological methods break the oil down and change its composition.
  - c. Natural oils are necessary for an animal's warmth and buoyancy, but crude oils destroy the processes that allow the animal to be warm and buoyant.
  - d. First responders begin cleaning up immediately after an oil spill, but restoration planning may not be complete for many years.
3. (Cause and Effect) **When birds and some mammals become covered with crude oil, why are they at risk of dying from hypothermia?**
  - a. The oil is toxic, so it poisons the animals if they try to clean themselves.
  - b. The oil takes away some animals' natural buoyancy, so they cannot float.
  - c. The oil affects the animals' natural waterproofing, so the animals cannot stay warm and dry underneath their feathers or fur.
  - d. The oil damages the animals' natural habitats, so the animals must move to other environments.
4. (Main Idea) **Which of these titles best indicates the content covered in the passage?**
  - a. Oil Spills: Accidents Happen
  - b. Oil Spills: Who Is Responsible?
  - c. Oil Spills: Causes, Consequences, and Responses
  - d. Oil Spills: Consequences, Responses, and Solutions

## ACTIVITY 1 Writing—Multiple Paragraphs

### *Multi-Paragraph Writing Strategy*

**Step 1: LIST** (List the details that are important enough to include in your response.)

**Step 2: CROSS OUT** (Reread the details. Cross out any that you decide not to include.)

**Step 3: CONNECT** (Connect any details that could go into one sentence.)

**Step 4: NUMBER** (Number the details in a logical order.)

**Step 5: WRITE** (Write the paragraph.)

**Step 6: IMPROVE** (Revise, edit, and proofread your response.)

**Prompt:** Explain the three big ideas from the passage about oil spills: (a) the consequences of large offshore oil spills, (b) the responses to these oil spills, and (c) the solutions for preventing oil spills.

### Planning Box

(topic a)

(detail)

(detail)

(detail)

(detail)

(detail)

(detail)

(detail)

(detail)

(detail)

(detail)

Planning Box (continued)
(topic b)
(detail)
(detail)
(detail)
(detail)
(detail)
(detail)
(detail)
(topic c)
(detail)
(detail)
(detail)
(detail)
(detail)
(detail)

**Write:** Write *paragraphs a, b, and c* on a separate piece of paper.

## ACTIVITY J Writing—Short Answer

### Short-Answer Strategy

**Step 1:** Read the question.

**Step 2:** Turn the question into part of the answer and write it down.

**Step 3:** Think of the answer or locate the answer in the passage.

**Step 4:** Complete your answer.

**Step 5:** Reread your answer. Ask yourself: Does it make sense? Did I answer all parts of the question?

#### Prompt:

**What Is—**After a large oil spill like *Exxon Valdez* or *Deepwater Horizon*, first responders, veterinarians, volunteers, and many other people rush in to contain and clean up the spilled oil and rescue as many animals as possible.

answer  
this

**What If—**What if no one contained the oil or cleaned up after a large oil spill like *Exxon Valdez* or *Deepwater Horizon*?

**Write and Discuss:** Write a paragraph on a separate piece of paper. Then read Caleb's paragraph with your teacher and share your ideas. Use the Discussion Guidelines below.

### Discussion Guidelines

Speaker		Listener	
Looks like:	Sounds like:	Looks like:	Sounds like:
<ul style="list-style-type: none"><li>• Facing peers</li><li>• Making eye contact</li><li>• Participating</li></ul>	<ul style="list-style-type: none"><li>• Using pleasant, easy-to-hear voice</li><li>• Sharing opinions, supporting with facts and reasons from the passage and from your experience</li><li>• Staying on the topic</li></ul>	<ul style="list-style-type: none"><li>• Facing speaker</li><li>• Making eye contact</li><li>• Participating</li></ul>	<ul style="list-style-type: none"><li>• Waiting quietly to speak</li><li>• Giving positive, supportive comments</li><li>• Disagreeing respectfully</li></ul>

Name: \_\_\_\_\_ Class: \_\_\_\_\_

## Pompeii

By Mark Cartwright  
2012

*Mark Cartwright is a Greek philosophy scholar who contributes to Ancient History Encyclopedia. Pompeii was a Roman town that was buried under over 10 feet of volcanic ash when the Vesuvius volcano exploded in 79 A.D. The site today is a popular location for tourists and archaeologists to uncover the history of the Roman Empire, which dominated the Mediterranean Sea from 27 B.C. to 476 A.D. As you read, take notes on what the preserved city can teach us about everyday life in Pompeii*

- [1] Pompeii was a large Roman town in the Italian region of Campania that was completely buried in volcanic ash following the eruption of nearby Mt. Vesuvius in 79 A.D. The town was excavated<sup>1</sup> in the 19th and 20th century A.D., and due to its excellent state of preservation it has given invaluable<sup>2</sup> insight into the Roman world. It may be the richest archaeological site in the world in terms of the sheer volume of data available to scholars.



*"Ruins of Pompeii with Vesuvius" by ElfQrin is licensed under CC BY-SA 4.0.*

### Early Settlement

The area was originally settled in the Bronze Age<sup>3</sup> on an escarpment<sup>4</sup> on the mouth of the Sarno River. The site of Pompeii and the surrounding area offered the twin advantages of a favorable climate and rich volcanic soil which allowed for the blossoming of agricultural activity, particularly olives and grapes. Little did the original settlers realize that the very escarpment on which they built had been formed by a long-forgotten eruption of the now seemingly innocent mountain that overshadowed their town. However, in Greek mythology, a hint at the volcano's power was found in the legend that Hercules<sup>5</sup> had here fought giants in a fiery landscape. Indeed, the nearby town Herculaneum, which would suffer the same fate as Pompeii, was named after this heroic episode. The name Pompeii itself comes from "pumpe," the commemorative<sup>6</sup> procession in honor of Hercules' victory over the giants.

1. **Excavate (verb):** to uncover by digging and removing earth
2. **Invaluable (adjective):** extremely valuable
3. The Bronze Age in Europe, characterized by the use of bronze for tools and weapons, lasted from approximately 3200-600 B.C.
4. An escarpment is a long cliff or steep slope.
5. Hercules is a Greek mythic hero famous for his feats of strength.
6. **Commemorative (adjective):** intended to honor an important person or event

Greeks established colonies in Campania in the 8th century B.C., and the Etruscans<sup>7</sup> were also present until they lost the Battle of Cumae in 474 B.C.<sup>8</sup> From then on, the Samnite<sup>9</sup> people from the local mountains began to infiltrate and dominate the region. The 4th century B.C. saw infighting break out into the Samnite Wars (343-290 B.C.) across Campania and the beginning of Roman influence in the region. Pompeii was favored by Rome, and the town flourished with large building projects being carried out in the 2nd century B.C. However, Pompeii, with its Samnite origins, had always been independent-minded when it came to Roman authority. The Roman dictator Sulla besieged the city following a rebellion and set up his colony of Venus in 80 B.C., resettling 4,000 to 5,000 legionaries<sup>10</sup> in the town. Another period of prosperity<sup>11</sup> followed: a local senate was formed and a new amphitheater and Odeon<sup>12</sup> were built with capacity for 5,000 and 1,500 spectators, respectively. After centuries of ups and downs, the town had reached its peak.

Following seismic<sup>13</sup> activity and coastal changes, Pompeii now stands just over a mile inland, but it would have been much closer to the sea and the mouth of the Sarno River in Roman times, as well as around 13 feet lower. The Roman town of Pompeii covers some two square miles (one third remains unexcavated) but the outer suburbs were also densely populated. There were also hundreds of farms and around 100 villas<sup>14</sup> in the surrounding countryside. The population of the town has been estimated at 10,000 to 12,000, with one third being slaves. Twice as many people again would have lived in the surrounding farms and villas. The coast of Campania was a favorite playground for Rome's well-to-do, and many of the villas were particularly grand with panoramic<sup>15</sup> sea-side views. Even Emperor Nero (reign 54-68 A.D.) is thought to have had a villa near Pompeii; his wife was a native of the town.

## A Thriving Trade Center

- [5] The town was one of the more important ports on the Bay of Naples and the surrounding settlements would have sent their produce to Pompeii for transportation across the Roman Empire. Goods such as olives, olive oil, wine, wool, fish sauce, salt, walnuts, figs, almonds, cherries, apricots, onions, cabbages, and wheat were exported, and imports included exotic fruit, spices, giant clams, silk, sandal wood, wild animals for the arena, and slaves to man the thriving agricultural industry. We know that the diet of Pompeians also included beef, pork, birds, fish, oysters, crustaceans, snails, lemons, figs, lettuce, artichokes, beans, and peas.

7. The Etruscans were an ancient people who populated modern-day Italy before Roman times and built the Etruscan Civilization in the north and east of Italy from the 8th to 3rd centuries B.C.
8. People from Syracuse and Cumae fought against the Etruscans in the naval battle on the Bay of Naples.
9. The Samnites are an ancient Italian people from south-central Italy.
10. Legionaries are the members of legions, or large groups of soldiers in ancient Rome.
11. **Prosperity (noun):** the state of being successful or wealthy
12. The Odeon was an ancient Greek or Roman building meant for musical performances.
13. of, relating to, or caused by an earthquake
14. A villa is a large house or estate located in the countryside.
15. **Panoramic (adjective):** a full and wide view of something



The town itself, in the Roman custom, was surrounded by a wall with many gates, often with two or three arched entrances to separate pedestrian and vehicle traffic. Within the walls there are wide paved streets in a largely regular layout, but there were no street names or numbers. The town presents an astonishing mix of several thousand buildings: shops, large villas, modest housing, temples, taverns, a pottery studio, an exercise ground, baths, an arena, public latrines, a market hall, schools, water towers, a flower nursery, fulleries to make wool cloth, a basilica,<sup>16</sup> brothels, and theatres. In among all of these were hundreds of small shrines to all kinds of gods and ancestors and around forty public fountains. In short, Pompeii had all the amenities<sup>17</sup> one would expect to find in a thriving and prosperous community.

Pompeii had many large villas, most of which were built in the 2nd century B.C., and they display the Greek colonial origins of the town. The typical entrance of these plush<sup>18</sup> residences was a small street doorway with an entrance corridor that opened out into a large columned atrium<sup>19</sup> with a rectangular pool of water open to the sky and from which other rooms were accessed. A striking feature of these residences is their magnificent floor mosaics, which depict all manner of scenes, from myths to the homeowner's business activities.

Many houses had a private garden with statues, and ornate<sup>20</sup> fountains surrounded by a row of columns called a peristyle. Many private residences even had areas dedicated to growing grapes for wine. Many of the larger villas also had a permanent eating area in the garden so that guests might dine outside on cushioned benches. Villas often employed wall paintings to give the illusion of landscape vistas.<sup>21</sup> Indeed, the wall paintings from these residences have also given insights into many other areas of Pompeian life such as religion, diet, clothes, architecture, industry, and agriculture.

In complete contrast to the richer residences, slave quarters have also survived, and they show the cramped, prison-like existence of this large section of the population. Other more modest architecture included basic two or three-storied residences, simple taverns, and small buildings that resembled curtained cubicles, where lower-class prostitutes worked their trade.

16. A basilica is a large church.

17. **Amenity (noun):** something that makes life easier or more pleasant

18. **Plush (adjective):** fancy and expensive

19. An atrium is an open area inside a tall building that lets in natural light.

20. **Ornate (adjective):** highly decorated

21. **Vista (noun):** a large and beautiful view of an area of land or water

## Vesuvius Awakens

[10] The area around Vesuvius received its first warning sign that the mountain was perhaps reawakening when a massive earthquake struck on the 5th of February 62 A.D. The quake measured 7.5 on the Richter scale<sup>22</sup> and devastated the surrounding towns; even parts of Naples, 20 miles away, were damaged. At Pompeii, few buildings escaped damage. Temples, houses, and parts of the thick city walls collapsed, fires ravaged sections of the town, and even sheep in the surrounding countryside died from the release of poisonous gases. The death toll was likely in the thousands rather than the hundreds. The water supply to the town was also severely affected with damage to aqueducts<sup>23</sup> and underground pipes. The recovery process was also hampered<sup>24</sup> by the collapse of the bridge over the Sarno. Things were so bad that a significant portion of the population left the town for good. However, slowly, the town made repairs, some hasty and others more considered and life began to return to normal. The civic repairs and improvements must also have been spurred on by the royal visit of Emperor Nero in 64 A.D., an occasion which led to the lifting of the ban on gladiator games imposed following the famous crowd riots in 59 A.D.

Seismic activity continued for the next decade but it seems not to have unduly<sup>25</sup> perturbed<sup>26</sup> the population. Life, and repairs from the catastrophe of 62 A.D., continued until 79 A.D. It was then, in high summer, that strange things began to occur. Fish floated dead in the Sarno, springs and wells inexplicably dried up, and vines on the slopes of Vesuvius mysteriously wilted and died. Seismic activity, although not strong, increased dramatically in frequency. Something was clearly not right. Strangely, although some people left the town, the majority of the population seemed to still not be too worried about the events that were unfolding. Little did they know that they were about to face an apocalypse.

On the morning of 24th of August a tremendous bang signaled that the magma<sup>27</sup> that had been building over the last thousand years had finally burst through the crater of Vesuvius. Fire and smoke bellowed from the volcano. At this point, it may have seemed that the mountain was doing nothing more than offering a harmless pyrotechnic<sup>28</sup> display, but at midday an even bigger explosion blew off the entire cone of Vesuvius and a massive mushroom cloud of pumice<sup>29</sup> particles rose 27 miles into the sky. The power of the explosion has been calculated as 100,000 times greater than the nuclear bomb which devastated Hiroshima in 1945 A.D.<sup>30</sup> The ash that started to rain down on Pompeii was light in weight but the density was such that within minutes everything was covered in inches of it. People tried to flee the town or sought shelter where they could. Those without shelter tried desperately to keep themselves above the shifting layers of volcanic material.

- 22. The Richter scale measures the intensity of earthquakes on a logarithmic scale, meaning that a level 8 earthquake is 10 times stronger than a level 7 earthquake and 100 times stronger than a level 6 earthquake.
- 23. Aqueducts are raised channels resembling bridges that carry water across valleys.
- 24. **Hamper (verb):** to slow the movement, progress, or action of (something)
- 25. **Unduly (adverb):** to an extreme, unreasonable, or unnecessary degree
- 26. **Perturb (verb):** to cause (someone) to be worried or upset
- 27. Magma is hot liquid rock that lies beneath the surface of the earth.
- 28. like a large display of fireworks
- 29. Pumice is a volcanic rock.
- 30. On August 6, 1945, the United States dropped the first of two nuclear bombs ever detonated on Hiroshima, Japan. Soon after the second bomb was dropped on Nagasaki on August 9th, Japan surrendered to the U.S. and its allies, ending World War II.

Then in the late afternoon another massive explosion rang the air, sending a column of ash six miles higher than the previous cloud. When the ash fell it was full of much heavier stones than in the first eruption, and the volcanic material that smothered the town was by now yards thick. Buildings began to collapse under the accumulated weight; survivors huddled near walls and under stairs for greater protection, some hugging their loved ones or clasping their most precious possessions. Then, at 11 p.m., the huge cloud hanging above the volcano collapsed from its own weight and blasted the town in six devastating waves of super-heated ash and air, which asphyxiated<sup>31</sup> and literally baked the bodies of the entire population. Still the ash kept falling relentlessly, and the once vibrant city was buried meters deep, to be lost and forgotten, wiped from the face of the Earth.

## Rediscovery and Archaeology

Pompeii was finally rediscovered in 1755 A.D. when work on the construction of the Sarno Canal began. Local stories of “the city” were proved to have been based on fact when under just a few feet of volcanic debris lay an entire town. From then on, Pompeii became an essential stopping point on the fashionable Grand Tour<sup>32</sup> and included such famous visitors as Goethe<sup>33</sup> and Mozart.<sup>34</sup>

- [15] Besides architectural remains, scholars of Pompeii have been presented with a mine of much rarer historical artifacts, a real treasure trove of data providing unique insights into the past. For example, the quantity of bronze statues has led scholars to recognize the material was more commonly used in Roman art than previously thought. A particular rich source of data has been skeletal remains and the possibility to take plaster casts of the impressions left by the dead in the volcanic material. One plaster cast reveals a couple holding hands. One reveals a man covering his mouth from the raining ash with a useless piece of cloth. Yet another shows a pregnant woman in the fetal position, trying desperately to protect her unborn child. Skeletal remains and plaster casts provide evidence that bad teeth were a common problem. Diseases such as tuberculosis, brucellosis, and malaria were also rife.<sup>35</sup> The skeletal remains of slaves, often found still chained despite the disaster, also tell a sad tale of malnutrition, chronic arthritis, and deformity caused by overwork.

It has also been possible to reconstruct the daily life of the town through the wealth of written records preserved at the site. These take the form of thousands of electoral notices and hundreds of wax tablets, mainly dealing with financial transactions. The wax of these tablets has long since melted but often impressions of the stylus<sup>36</sup> have remained on the wooden backing. Other invaluable sources of text include signs, graffiti, amphorae<sup>37</sup> labels, seals, and tomb inscriptions. Not only are such sources typically unavailable to the historian, but also their variety permits an insight into sections of society (slaves, the poor, women, gladiators) usually ignored or hardly discussed in traditionally surviving texts such as books and legal records. We know that there were forty festivals of one kind or another every year and that Saturday was market day. Graffiti, for example, tells us how a gladiator was “the sighed-for joy of girls,” a mosaic in the house of a local businessman proudly proclaims “Profit is Joy,” and corrections on tablets reveal the changing status of citizens over time. Something more than names and figures have survived, however. The unique archaeological evidence from Pompeii allows us the rarest of opportunities—the possibility to reconstruct the actual thoughts, hopes, despair, wit and even the very ordinariness of these people who lived so long ago.

31. **Asphyxiate (verb):** to cause (someone) to stop breathing, often leading to death

32. The Grand Tour was the name for an extended period of travel throughout Europe that was meant to complete a man's education.

33. Johann Wolfgang von Goethe (1749-1832) was a German writer and statesman.

34. Wolfgang Amadeus Mozart (1756-1791) was an Austrian composer.

35. **Rife (adjective):** very common

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36. A stylus is a tool used to write on clay or wax tablets.
37. a tall ancient Greek or Roman jar with two handles and a narrow neck

## Text-Dependent Questions

**Directions:** For the following questions, choose the best answer or respond in complete sentences.

1. PART A: Which statement best expresses a central idea in the text? [RI.2]
  - A. Pompeii was a thriving cultural center of the Roman Empire and its destruction was the greatest loss in human history.
  - B. While Pompeii is an important resource for archaeologists, the site does not provide any understanding into the emotional impact of the city's tragic end.
  - C. The preservation of Pompeii has allowed the site to become a major source of income for Italy through tourism, but this has hindered many archaeological digs.
  - D. Pompeii's preservation contains a great deal of information about daily life in the ancient Roman world and how its citizens reacted to the eruption.
  
2. PART B: Which quote from the text best supports the answer to Part A? [RI.1]
  - A. "It may be the richest archaeological site in the world in terms of the sheer volume of data available to scholars." (Paragraph 1)
  - B. "In short, Pompeii had all the amenities one would expect to find in a thriving and prosperous community." (Paragraph 6)
  - C. "The power of the explosion has been calculated as 100,000 times greater than the nuclear bomb which devastated Hiroshima in 1945 A.D." (Paragraph 12)
  - D. "From then on, Pompeii became an essential stopping point on the fashionable Grand Tour and included such famous visitors as Goethe and Mozart." (Paragraph 14)
  
3. PART A: What relationship does the author depict between archaeology and history? [RI.3]
  - A. Archaeology can uncover evidence that may go against previous theories, strengthening the understanding of human history.
  - B. Archaeology rarely contradicts human understanding of the past, strengthening scholars' understanding of history.
  - C. History provides scholars with a broad view of the past, whereas archaeology investigates how people died in natural disasters.
  - D. Archaeology imagines what a city physically looked like in the past, but it cannot help scholars understand ancient peoples' thoughts, feelings, or lives.
  
4. PART B: Which phrase from the text best supports the answer to Part A? [RI.1]
  - A. "Temples, houses, and parts of the thick city walls collapsed, fires ravaged sections of the town, and even sheep in the surrounding countryside died from the release of poisonous gases." (Paragraph 10)
  - B. "Pompeii was finally rediscovered in 1755 A.D.... Local stories of 'the city' were proved to have been based on fact when under just a few feet of volcanic debris lay an entire town." (Paragraph 14)
  - C. "One plaster cast reveals a couple holding hands. One reveals a man covering his mouth from the raining ash with a useless piece of cloth. Yet another shows a pregnant woman in the fetal position" (Paragraph 15)
  - D. "Not only are such sources typically unavailable to the historian, but also their variety permits an insight into sections of society... hardly discussed in traditionally surviving texts" (Paragraph 16)

5. What is the author's purpose in writing this text? [RI.6]
- A. to place the readers in the daily lives of the people of Pompeii
  - B. to discuss how archaeological research can provide different types of insight
  - C. to blame the Roman Empire for its failure to protect the people of Pompeii
  - D. to argue why the site of Pompeii should not be neglected by the Italian government
6. How does the section entitled "A Thriving Trade Center" (Paragraphs 5-9) contribute to the author's depiction of Pompeii? [RI.5]

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## Discussion Questions

**Directions:** *Brainstorm your answers to the following questions in the space provided. Be prepared to share your original ideas in a class discussion.*

1. What can we learn about how people faced death in Pompeii based on their skeletal remains and impressions in volcanic ash? While ancient deaths usually feel removed, do the deaths in Pompeii feel more personal because of this archaeological preservation?
  
  
  
  
  
  
  
  
  
  
2. In the context of this text, what can we learn from tragedy? Cite evidence from the text, your personal experience, and other literature, art, and history in the answer.
  
  
  
  
  
  
  
  
  
  
3. In the context of this article, who is in control: man or nature? Are there ways in which people could have had more control over their destinies in Pompeii?
  
  
  
  
  
  
  
  
  
  
4. Do you think that Pompeii is a compelling place to visit today? Why does this town attract more tourists than other ruins? Is it simply their preservation, or the more human undertones found in the town's quick death and entombment?