



# Review & Enrichment

Week of April 20<sup>th</sup>

Grade 8

Student Name \_\_\_\_\_

Teacher Name \_\_\_\_\_

If possible, please return paper copies to drop boxes at food distribution sites or if using online access email teacher upon completion.



**McKeesport Area School District**  
**Flexible Instruction Days –Founders Hall Lesson Plan**

<b>GRADE/SUBJECT:</b> 8 <sup>th</sup> Grade Science				<b>LESSON TITLE:</b> The Effects of Change (Biotic and Abiotic Factors)	
<input type="checkbox"/> <b>LESSON 1:</b> 1 <sup>st</sup> or 2 <sup>nd</sup> 9-Weeks	<input type="checkbox"/> <b>LESSON 2:</b> 2 <sup>nd</sup> or 3 <sup>rd</sup> 9-Weeks	<input type="checkbox"/> <b>LESSON 3:</b> 2 <sup>nd</sup> or 3 <sup>rd</sup> 9-Weeks	<input type="checkbox"/> <b>LESSON 4:</b> 2 <sup>nd</sup> or 3 <sup>rd</sup> 9-Weeks	<input checked="" type="checkbox"/> <b>LESSON 5:</b> 3 <sup>rd</sup> or 4 <sup>th</sup> 9-Weeks	
<b>STANDARD(S):</b> S8.A.1.3.2, S8.A.1.3.3, S8.A.3.1.4					
<b>INSTRUCTIONAL OUTCOMES:</b> Students will: <ul style="list-style-type: none"><li>• Understand how changes affect a habitat and the populations of organisms living in it.</li><li>• Be able to explain and give examples of biotic and abiotic factors in an ecosystem.</li><li>• Be able to define and give examples of urban sprawl, habitat fragmentation, habitat degradation, and habitat loss.</li></ul>					
<b>STUDENT PARTICIPATION</b> ( <i>Lesson steps</i> ): Students will: <ol style="list-style-type: none"><li>1. Read the passages from pages 20-23 and answer the "Active Reader" questions on each page.</li><li>2. Answer the "Focus Questions" at the end of the section.</li></ol>					
<b>ACCOMMODATIONS:</b> For struggling learners: <ul style="list-style-type: none"><li>• Underline the key terms (in bold print) in each section.</li></ul> For advanced learners: <ul style="list-style-type: none"><li>• Complete the "Web Quest" question on page 23 (upper right corner of the page).</li></ul>					
<b>HANDOUTS</b> ( <i>exact names of ALL accompanying handouts</i> ) & <b>RESOURCES</b> ( <i>materials, websites, books, etc.</i> ) <ul style="list-style-type: none"><li>• <b>The Effect of Change:</b> pages 20-23.</li></ul>					
<b>EVIDENCE OF LEARNING</b> Students will demonstrate their: <ul style="list-style-type: none"><li>• Understanding of the relationship between living things and environmental changes that occur over time.</li><li>• Ability to apply the concepts in this section to various types of ecosystems and organisms.</li></ul>					



# Chapter 1 The Effects of Change



This chapter explains how changes affect a habitat and the populations of organisms living in it. As you read, look for all the types of changes that can happen and how the organisms are affected.

## Biotic and Abiotic Factors

The term *abiotic* refers to non-living things in an environment such as temperature, water, light, soil, wind, and natural disasters. The term *biotic* refers to living things, such as the organisms that share a habitat.

When change happens to abiotic factors in a habitat, biotic factors are usually affected, too. This is because organisms are adapted to their natural surroundings. Camels, for example, possess physical features which make them well-suited to a desert habitat. Animals that lack features like these will begin to die off if climate change slowly converts their normally-wet habitat to desert.

## Changes to Abiotic Factors

Changes in natural surroundings affect organisms, sometimes for the better, other times for the worse. A much-needed rainfall may end a drought in one area, while a wildfire may destroy a forest in another. Environmental changes have positive and negative effects. For example, an early frost will harm some plants, but it will also kill adult fleas thereby benefiting mammals.

Large scale climate change can affect populations, too. For example, if the polar bears die off because of warming seas, the populations of prey species such as seals may increase to the point that the available resources in the environment can't support them.

Humans are a major source of change to abiotic factors in an ecosystem. For example, we like to spread out and build in new places creating urban sprawl. When we start building, we first have to level the area we want to build on, including removing trees and smaller plants. This drives away the herbivores that rely on those plants for food. The carnivores, omnivores, scavengers, and decomposers that rely on the herbivore populations for food will either die off or be forced to move away as well.

## ACTIVE READER

**1 Cause and Effect** Name a natural disaster, and describe an effect it can have on the organisms in a habitat.

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**2 Define** Explain the difference between biotic and abiotic factors in your own words.

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## Habitat Fragmentation

Habitats can become fragmented—broken up into smaller areas some of which are completely isolated from the others. The major cause of habitat fragmentation is development by humans. As the built environment expands, habitats are broken up and isolated from one another.

This kind of development has occurred in Pennsylvania and around the world for generations. Before 1800 deer were very common in Pennsylvania. The population was kept in control by predators, including people, wolves, and cougars. Later, settlers began to cut down the forest and create farms. This broke up the vast forest, thereby fragmenting the deer's habitat. Wolves and cougars were eliminated by hunting, and hunting deer by humans increased. The Pennsylvania Game Commission estimated around 1900 that there were only about 500 deer in Pennsylvania.

Habitat fragmentation can cause populations of animals to move away and can even lead to extinction. But the story of Pennsylvania's whitetail deer has a different ending. The commission began stocking deer in 1906 and continued through the 1920s. Today, they have flourished, living just about anywhere and eating just about anything to survive.

The deer adapted to their new habitat in part by changing their diet. Today, their diet includes almost any vegetation including many of the plants in our yards. Now, whitetail deer live on the edge of the forest and spend much of their time in small clearings and open fields.



*In 1900, there were only a few hundred whitetail deer in Pennsylvania.*

### ACTIVE READER

**1 Define** Explain what is meant by the term built environment?

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**2 Classify** Deer will sometimes eat meat, such as bird eggs and carrion. How should deer be classified as to their feeding habits?

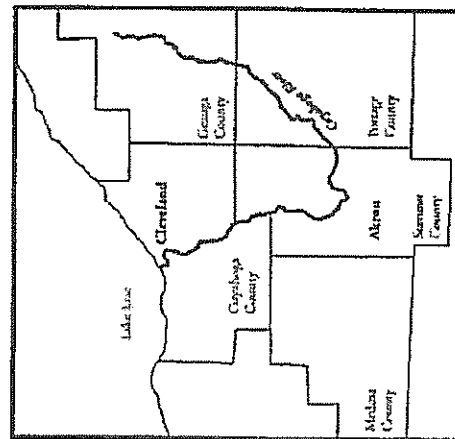
- a) herbivore
- b) carnivore
- c) omnivore
- d) decomposer

## Habitat Degradation

Habitat degradation occurs when a habitat becomes less able to support the life of the organisms that live in it. Pollution is often the cause of habitat degradation. The Cuyahoga River, for example, runs through the cities of Akron and Cleveland. The river became heavily polluted by the dumping of sewage and industrial waste in the twentieth century and actually caught fire several times between 1936 and 1968. The habitat was so degraded by 1968 that it supported little life in the section that runs between Akron and Cleveland.

Efforts to restore the Cuyahoga habitat have been largely successful. Populations of fish have returned and the river can be used for activities such as boating and wading.

The increase or decrease of a population because of habitat fragmentation or degradation also affects other populations. For example, humans sometimes build where tree sparrows usually nest. The sparrows move to a new spot, crowding the bird population in the new habitat. The sparrows eat a lot of seeds and insects, creating a scarcity for other birds and small animals that eat the same things. However, the food supply for larger carnivores that feed on sparrows, such as owls, increases and allows for an increase in the population of the larger carnivores.



The Cuyahoga River flows south from Geauga County to Akron, then north from Akron to Cleveland where it flows into Lake Erie.



Pollution in the Cuyahoga River caused it to catch on fire several times between 1936 and 1968.

### ACTIVE READER

*1 Interpret* The map shows that the source of the Cuyahoga River is in Geauga County. Where is its mouth?

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*1 Infer* Reread paragraph 3. Explain what might happen if the population of larger carnivores increases beyond the capacity of the habitat to provide food for them all.

- a) The herbivores will move away.
- b) The carnivores will fight each other, die off, or move away.
- c) The omnivores will increase, providing more food for the carnivores.

## Habitat Loss

Pollution, massive development, and climate change can lead to the complete loss of habitat. Habitat loss changes or eliminates the conditions organisms need to survive. The rate of species extinction, a normal part of the natural world, is speeded up to an unnatural level. When habitat is lost on a large scale, the world's biodiversity is threatened.

The term *biodiversity* means "biological diversity" and it refers to the genetic variation within and between all species. Maintaining this variation is key to how all natural and man-made habitats function.

### FOCUS

### QUESTIONS

1. What, besides drought or urban sprawl, might affect a food chain? Explain the effect.

2. What might bring on a positive change in a habitat?



Human affect wildlife in many ways – directly as well as indirectly. Pollution, is a major cause of habitat degradation. Research online to find ways people affect wildlife and the environment. What can we do to stop or slow any harmful effects?



**McKeesport Area School District**  
**Flexible Instruction Days –Founders Hall Lesson Plan**

<b>GRADE/SUBJECT:</b> Math – Grade 8			<b>LESSON TITLE:</b> Volume of Solids	
<input type="checkbox"/> <b>LESSON 1:</b> 1 <sup>st</sup> or 2 <sup>nd</sup> 9-Weeks	<input type="checkbox"/> <b>LESSON 2:</b> 2 <sup>nd</sup> or 3 <sup>rd</sup> 9-Weeks	<input type="checkbox"/> <b>LESSON 3:</b> 2 <sup>nd</sup> or 3 <sup>rd</sup> 9-Weeks	<input type="checkbox"/> <b>LESSON 4:</b> 2 <sup>nd</sup> or 3 <sup>rd</sup> 9-Weeks	<input checked="" type="checkbox"/> <b>LESSON 5:</b> 3 <sup>rd</sup> or 4 <sup>th</sup> 9-Weeks
<b>STANDARD(S):</b> <ul style="list-style-type: none"> <li>8.G.C.9 – Know the formulas for volumes of cones, cylinders, and spheres and use them to solve real world and mathematical problems.</li> </ul>				
<b>INSTRUCTIONAL OUTCOMES:</b> <b>Students will:</b> <ul style="list-style-type: none"> <li>Use formulas of capacity to find the volume of shapes</li> </ul>				
<b>STUDENT PARTICIPATION (<i>Lesson steps</i>):</b> <b>Students will:</b> <ol style="list-style-type: none"> <li>1. Solve volume problems</li> </ol>				
<b>ACCOMMODATIONS:</b> <b>For struggling learners:</b> <ul style="list-style-type: none"> <li>FID Lesson 5 DL</li> </ul> <b>For advanced learners:</b> <ul style="list-style-type: none"> <li>Bonus activities within the assignment</li> </ul>				
<b>HANDOUTS (<i>exact names of ALL accompanying handouts</i>) &amp; RESOURCES (<i>materials, websites, books, etc.</i>)</b> <ul style="list-style-type: none"> <li>Worksheet FID -5</li> </ul>				
<b>EVIDENCE OF LEARNING</b> <b>Students will demonstrate their:</b> <ul style="list-style-type: none"> <li>Ability to solve for the volume of solids</li> </ul>				

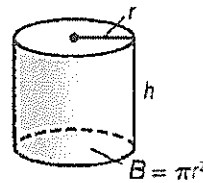


**For any student that does not have access to a calculator, in lieu of solving the problem for the final answer simply substitute your values into the formula**

### Volume of Cylinders

As with prisms, the area of the base of a **cylinder** tells the number of cubic units in one layer. The height tells how many layers there are in the cylinder. The volume  $V$  of a cylinder with radius  $r$  is the area of the base  $B$  times the height  $h$ .

$$V = Bh, \text{ where } B = \pi r^2, \text{ or } V = \pi r^2 h$$



#### Example

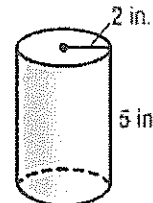
Find the volume of the cylinder. Round to the nearest tenth.

$$V \approx \pi r^2 h \quad \text{Volume of a cylinder}$$

$$V \approx \pi (2)^2 (5) \quad \text{Replace } r \text{ with 2 and } h \text{ with 5.}$$

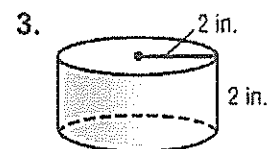
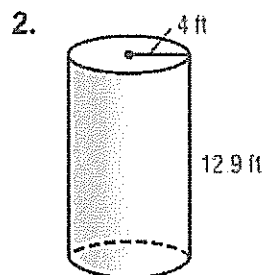
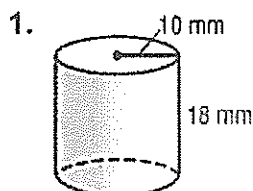
$$V \approx 62.8318 \quad \text{Use a calculator}$$

The volume is about 62.8 cubic inches.



#### Exercises

Find the volume of each cylinder. Round to the nearest tenth – #3 and #6 are bonus



4. radius = 9.5 yd  
height = 2.2 yd

5. diameter = 6 cm  
height = 11 cm

6. diameter = 3.4 m  
height = 1.25 m

**Volume of Cones**

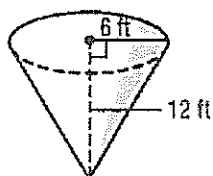
A **cone** is a three-dimensional shape with one circular base.

The volume  $V$  of a cone with radius  $r$  is one third the area of the base  $B$  times the height  $h$ .

$$V = \frac{1}{3}Bh \text{ or } V = \frac{1}{3}\pi r^2 h$$

**Example**

Find the volume of the cone. Round to the nearest tenth.



$$V = \frac{1}{3}\pi r^2 h$$

Volume of a cone

$$V = \frac{1}{3}(\pi \cdot 6^2 \cdot 12)$$

$r = 6$  and  $h = 12$

$$V \approx 452.4$$

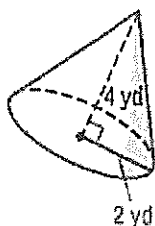
Simplify.

The volume is about 452.4 cubic feet.

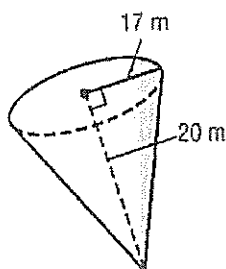
**Exercises**

Find the volume of each cone. Round to the nearest tenth. – #3 and #6 are bonus

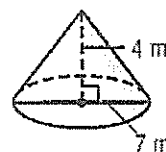
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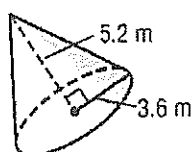
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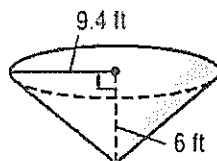
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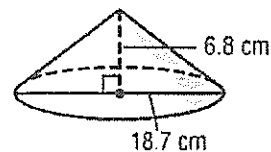
4.



5.



6.



**Volume of Spheres**

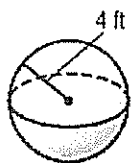
A sphere is a set of all points in space that are a given distance from a given point.

The volume  $V$  of a sphere with radius  $r$  is four thirds the product of  $\pi$  and the cube of the radius  $r$ .

$$V = \frac{4}{3}\pi r^3.$$

**Example**

Find the volume of the sphere. Round to the nearest tenth.



$$V = \frac{4}{3}\pi r^3 \quad \text{Volume of a sphere}$$

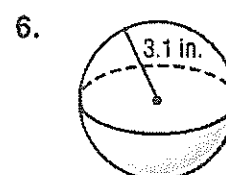
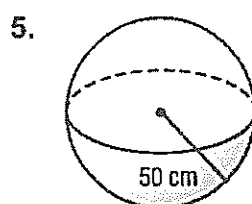
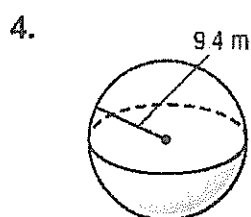
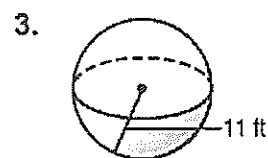
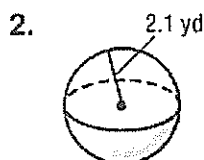
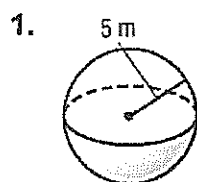
$$V = \frac{4}{3}(\pi \cdot 4^3) \quad r = 4$$

$$V \approx 268.1 \quad \text{Simplify. Use a calculator.}$$

The volume is about 268.1 cubic feet.

**Exercises**

Find the volume of each sphere. Round to the nearest tenth. – #3 and #6 are bonus



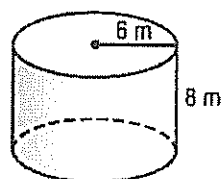
**Surface Area of Cylinders**

The surface area S.A. of a cylinder with height  $h$  and radius  $r$  is the sum of the area of the curved surface and the area of the circular bases.

$$S.A. = 2\pi rh + 2\pi r^2$$

**Example**

Find the total surface area of the cylinder. Round to the nearest tenth.



$$S.A. = 2\pi rh + 2\pi r^2$$

Surface area of a cylinder

$$S.A. = 2\pi(6)(8) + 2\pi(6)^2$$

Replace  $r$  with 6 and  $h$  with 8.

$$S.A. \approx 527.7875$$

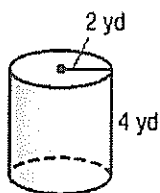
Simplify.

The surface area of the cylinder is about 527.8 square meters.

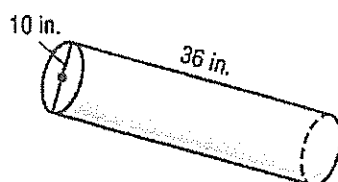
**Exercises**

Find the total surface area of each cylinder. Round to the nearest tenth. # 4 is bonus

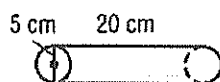
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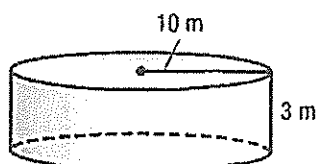
2.



3.



4.



**Surface Area of Cones**

The lateral area  $L.A.$  of a cone is  $\pi$  times the radius times the slant height, or  $L.A. = \pi r \ell$ . The total surface area of a cone with slant height  $\ell$  and radius  $r$  is the lateral area plus the area of the base, or  $S.A. = L.A. + \pi r^2$  or  $S.A. = \pi r \ell + \pi r^2$ .

**Example**

Find the lateral and total surface areas of the cone. Round to the nearest tenth.

**Lateral Surface Area**

$$L.A. = \pi r \ell$$

$$L.A. = \pi \cdot 3 \cdot 5 \quad r = 3, \ell = 5$$

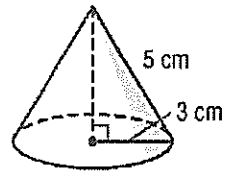
$$L.A. \approx 47.1$$

**Total Surface Area**

$$S.A. = L.A. + \pi r^2$$

$$S.A. = 47.1 + \pi \cdot 3^2$$

$$S.A. \approx 75.4$$

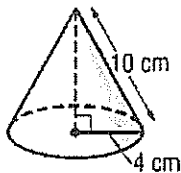


The lateral and total surface areas of the cone are about 47.1 and 75.4 square centimeters.

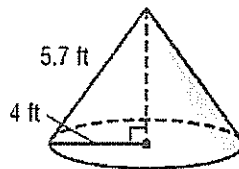
**Exercises**

Find the lateral and total surface areas of each cone. Round to the nearest tenth. # 4 is bonus

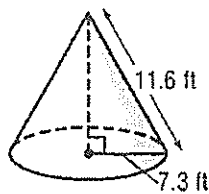
1.



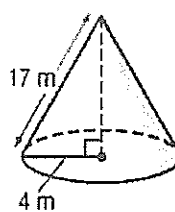
2.



3.



4.



**Changes in Dimensions**

A **scale factor** is how much larger or smaller one solid is than another. **Similar solids** have the same shape and their corresponding linear measures are proportional.

For similar solids A and B:

$$\text{surface area of } B = (\text{surface area of } A) \times (\text{scale factor})^2$$

**Example 1**

The surface area of a rectangular prism is 144 square centimeters. Find the surface area of a similar prism that is larger by a scale factor of 4.

$$\text{S.A.} = 144 \cdot 4^2 \quad \text{Multiply by the square of the scale factor.}$$

$$\text{S.A.} = 144 \cdot 16 \quad \text{Square 4.}$$

$$\text{S.A.} = 2,304 \text{ cm}^2 \quad \text{Simplify.}$$

For similar solids A and B:

$$\text{Volume of } B = (\text{volume of } A) \times (\text{scale factor})^3$$

**Example 2**

The volume of a rectangular prism is 120 cubic feet. Find the volume of a similar prism that is larger by a scale factor of 2.

$$V = 120 \cdot 2^3 \quad \text{Multiply by the cube of the scale factor.}$$

$$V = 120 \cdot 8 \quad \text{Cube 2.}$$

$$V = 960 \text{ ft}^3 \quad \text{Simplify.}$$

**Choose 2 – All 4 bonus**

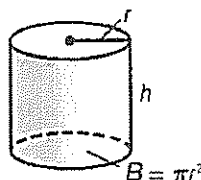
1. The surface area of a rectangular prism is 1,150 square inches. Find the surface area of a similar prism that is larger by a scale factor of 2.
2. The surface area of a pyramid is 38 square feet. What is the surface area of a similar pyramid that is smaller by a scale factor of  $\frac{1}{3}$ ? Round to the nearest tenth.
3. The volume of a triangular prism is 5 cubic meters. Find the volume of a similar prism that is larger by a scale factor of 3.
4. The volume of a cylinder is 416 cubic inches. What is the volume of a similar cylinder that is smaller by a scale factor of  $\frac{1}{2}$ ?

**For any student that does not have access to a calculator, in lieu of solving the problem for the final answer simply substitute your values into the formula**

### Volume of Cylinders

As with prisms, the area of the base of a **cylinder** tells the number of cubic units in one layer. The height tells how many layers there are in the cylinder. The volume  $V$  of a cylinder with radius  $r$  is the area of the base  $B$  times the height  $h$ .

$$V = Bh, \text{ where } B = \pi r^2, \text{ or } V = \pi r^2 h$$



### Example

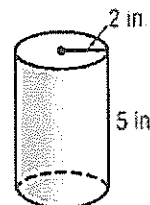
Find the volume of the cylinder. Round to the nearest tenth.

$$V \approx \pi r^2 h \quad \text{Volume of a cylinder}$$

$$V \approx \pi(2)^2(5) \quad \text{Replace } r \text{ with 2 and } h \text{ with 5.}$$

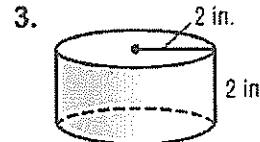
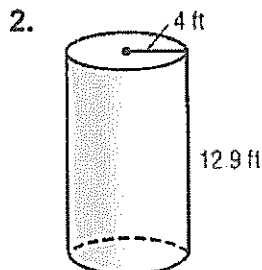
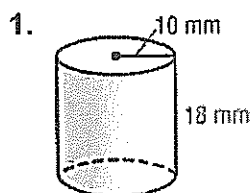
$$V \approx 62.8318 \quad \text{Use a calculator}$$

The volume is about 62.8 cubic inches.



### Exercises

Choose 3 – each additional problem is bonus



4. radius = 9.5 yd  
height = 2.2 yd

5. diameter = 6 cm  
height = 11 cm

6. diameter = 3.4 m  
height = 1.25 m

**Volume of Cones**

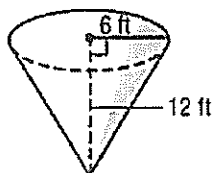
A **cone** is a three-dimensional shape with one circular base.

The volume  $V$  of a cone with radius  $r$  is one third the area of the base  $B$  times the height  $h$ .

$$V = \frac{1}{3}Bh \text{ or } V = \frac{1}{3}\pi r^2 h$$

**Example**

Find the volume of the cone. Round to the nearest tenth.



$$V = \frac{1}{3}\pi r^2 h$$

Volume of a cone

$$V = \frac{1}{3}(\pi \cdot 6^2 \cdot 12) \quad r = 6 \text{ and } h = 12$$

$$V \approx 452.4$$

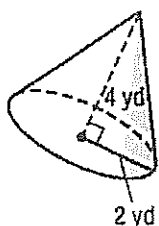
Simplify.

The volume is about 452.4 cubic feet.

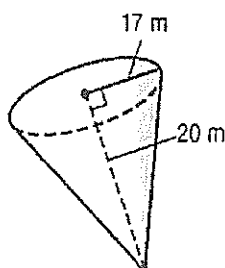
**Exercises**

Choose 3 – each additional problem is bonus

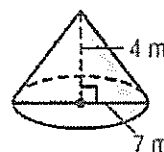
1.



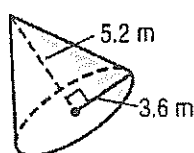
2.



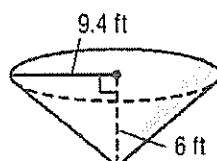
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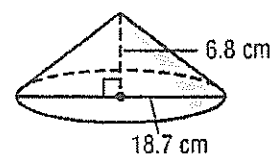
4.



5.



6.





**Volume of Spheres**

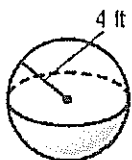
A **sphere** is a set of all points in space that are a given distance from a given point.

The volume  $V$  of a sphere with radius  $r$  is four thirds the product of  $\pi$  and the cube of the radius  $r$ .

$$V = \frac{4}{3}\pi r^3.$$

**Example**

Find the volume of the sphere. Round to the nearest tenth.



$$V = \frac{4}{3}\pi r^3 \quad \text{Volume of a sphere}$$

$$V = \frac{4}{3}(\pi \cdot 4^3) \quad r = 4$$

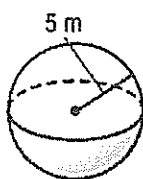
$$V \approx 268.1 \quad \text{Simplify. Use a calculator.}$$

The volume is about 268.1 cubic feet.

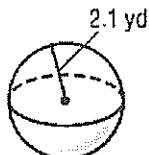
**Exercises**

Choose 3 – each additional problem is bonus

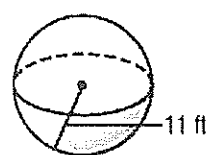
1.



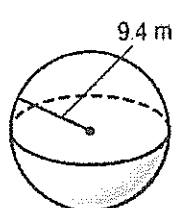
2.



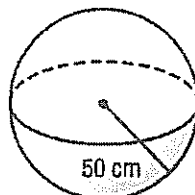
3.



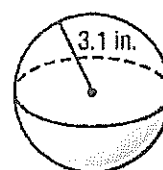
4.



5.



6.



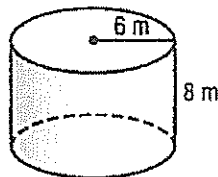
**Surface Area of Cylinders**

The surface area S.A. of a cylinder with height  $h$  and radius  $r$  is the sum of the area of the curved surface and the area of the circular bases.

$$S.A. = 2\pi rh + 2\pi r^2$$

**Example**

Find the total surface area of the cylinder. Round to the nearest tenth.



$$S.A. = 2\pi rh + 2\pi r^2$$

Surface area of a cylinder

$$S.A. = 2\pi(6)(8) + 2\pi(6)^2$$

Replace  $r$  with 6 and  $h$  with 8.

$$S.A. \approx 527.7875$$

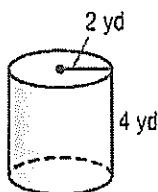
Simplify.

The surface area of the cylinder is about 527.8 square meters.

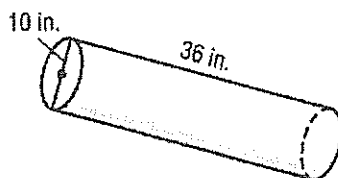
**Exercises**

Choose 2 – each additional problem is bonus

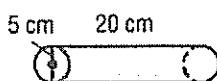
1.



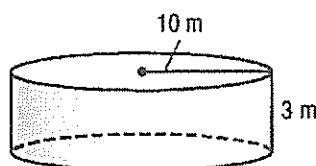
2.



3.



4.



**Surface Area of Cones**

The lateral area  $L.A.$  of a cone is  $\pi$  times the radius times the slant height, or  $L.A. = \pi r \ell$ . The total surface area of a cone with slant height  $\ell$  and radius  $r$  is the lateral area plus the area of the base, or  $S.A. = L.A. + \pi r^2$  or  $S.A. = \pi r \ell + \pi r^2$ .

**Example**

Find the lateral and total surface areas of the cone. Round to the nearest tenth.

**Lateral Surface Area**

$$L.A. = \pi r \ell$$

$$L.A. = \pi \cdot 3 \cdot 5 \quad r = 3, \ell = 5$$

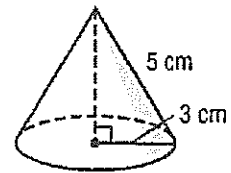
$$L.A. \approx 47.1$$

**Total Surface Area**

$$S.A. = L.A. + \pi r^2$$

$$S.A. = 47.1 + \pi \cdot 3^2$$

$$S.A. \approx 75.4$$

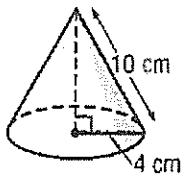


The lateral and total surface areas of the cone are about 47.1 and 75.4 square centimeters.

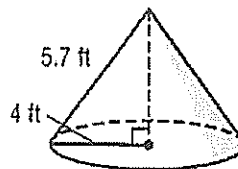
**Exercises**

Choose 2 – each additional problem is bonus

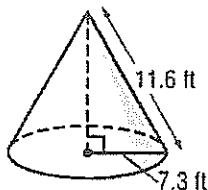
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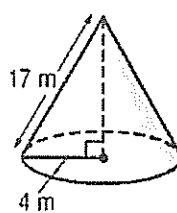
2.



3.



4.



**Changes in Dimensions**

A **scale factor** is how much larger or smaller one solid is than another. **Similar solids** have the same shape and their corresponding linear measures are proportional.

For similar solids A and B:

$$\text{surface area of } B = (\text{surface area of } A) \times (\text{scale factor})^2$$

**Example 1**

The surface area of a rectangular prism is 144 square centimeters. Find the surface area of a similar prism that is larger by a scale factor of 4.

$$\text{S.A.} = 144 \cdot 4^2 \quad \text{Multiply by the square of the scale factor.}$$

$$\text{S.A.} = 144 \cdot 16 \quad \text{Square 4.}$$

$$\text{S.A.} = 2,304 \text{ cm}^2 \quad \text{Simplify.}$$

For similar solids A and B:

$$\text{Volume of } B = (\text{volume of } A) \times (\text{scale factor})^3$$

**Example 2**

The volume of a rectangular prism is 120 cubic feet. Find the volume of a similar prism that is larger by a scale factor of 2.

$$V = 120 \cdot 2^3 \quad \text{Multiply by the cube of the scale factor.}$$

$$V = 120 \cdot 8 \quad \text{Cube 2.}$$

$$V = 960 \text{ ft}^3 \quad \text{Simplify.}$$

**Choose 2 – each additional problem is bonus**

1. The surface area of a rectangular prism is 1,150 square inches. Find the surface area of a similar prism that is larger by a scale factor of 2.
2. The surface area of a pyramid is 38 square feet. What is the surface area of a similar pyramid that is smaller by a scale factor of  $\frac{1}{3}$ ? Round to the nearest tenth.
3. The volume of a triangular prism is 5 cubic meters. Find the volume of a similar prism that is larger by a scale factor of 3.
4. The volume of a cylinder is 416 cubic inches. What is the volume of a similar cylinder that is smaller by a scale factor of  $\frac{1}{2}$ ?



**McKeesport Area School District**  
Flexible Instruction Days –Founders Hall Lesson Plan

<b>GRADE/SUBJECT:</b> 8 History			<b>LESSON TITLE:</b> CNN 10	
<input checked="" type="checkbox"/> <b>LESSON 1:</b> 1 <sup>st</sup> or 2 <sup>nd</sup> 9-Weeks	<input checked="" type="checkbox"/> <b>LESSON 2:</b> 2 <sup>nd</sup> or 3 <sup>rd</sup> 9-Weeks	<input checked="" type="checkbox"/> <b>LESSON 3:</b> 2 <sup>nd</sup> or 3 <sup>rd</sup> 9-Weeks	<input checked="" type="checkbox"/> <b>LESSON 4:</b> 2 <sup>nd</sup> or 3 <sup>rd</sup> 9-Weeks	<input checked="" type="checkbox"/> <b>LESSON 5:</b> 3 <sup>rd</sup> or 4 <sup>th</sup> 9-Weeks
<b>STANDARD(S):</b> 5.1.8.C, 5.1.8.F, 5.2.8.B				
<b>INSTRUCTIONAL OUTCOMES:</b> Students will: <ul style="list-style-type: none"> <li>Understand one major current event in the world</li> <li>Be able to list the major events both locally and worldly for the upcoming quiz</li> </ul>				
<b>STUDENT PARTICIPATION (<i>Lesson steps</i>):</b> Students will: <ol style="list-style-type: none"> <li>Watch the CNN 10 video clip online</li> <li>Complete the CNN 10 Student News Guided Worksheet</li> </ol>				
<b>ACCOMMODATIONS:</b> For struggling learners: <ul style="list-style-type: none"> <li>Students can only write their reflection on one of the current event stories in the video.</li> </ul> For advanced learners: <ul style="list-style-type: none"> <li>Students can complete both sides of the worksheet and receive bonus for choosing a single story on the reverse side</li> </ul>				
<b>HANDOUTS (<i>exact names of ALL accompanying handouts</i>) &amp; RESOURCES (<i>materials, websites, books, etc.</i>)</b> <ul style="list-style-type: none"> <li>CNN 10 website</li> <li>CNN Student News Guided Worksheet</li> <li>Current Event Reviewsheet</li> </ul>				
<b>EVIDENCE OF LEARNING</b> Students will demonstrate their: <ul style="list-style-type: none"> <li>Understanding of the main ideas for the major stories discussed in the video</li> <li>By being able to provide the correct answers on the weekly quiz from the notes on the video and the completed worksheet</li> <li>By being able to discuss their reflection on their worksheet when they return to class</li> </ul>				



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

Date: \_\_\_\_\_

CNN Student News Guided Worksheet – Week of \_\_\_\_\_

Instructions: As you watch the news, complete the chart for each day. If that section is not used for the day, just leave it blank.

Day of the Week _____	Describe the news stories from the day:
1.	_____ _____ _____
2.	_____ _____ _____
3.	_____ _____ _____
4.	_____ _____ _____

Describe the "Before We Go": _____ _____ _____
---

Reflection: What's your opinion on one of today's top stories? Write a short summary: _____ _____ _____ _____
---

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## Current Event

Publication or Website \_\_\_\_\_

Topic of Stories \_\_\_\_\_

Briefly summarize the important information from the stories.

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What is your opinion or reaction to this article?

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**McKeesport Area School District**  
**Flexible Instruction Days –Founders Hall Lesson Plan**

<b>GRADE/SUBJECT:</b> 8 <sup>th</sup> English and Language Arts			<b>LESSON TITLE:</b> The Flying Machine	
<input type="checkbox"/> <b>LESSON 1:</b> 1 <sup>st</sup> or 2 <sup>nd</sup> 9-Weeks	<input type="checkbox"/> <b>LESSON 2:</b> 2 <sup>nd</sup> or 3 <sup>rd</sup> 9-Weeks	<input type="checkbox"/> <b>LESSON 3:</b> 2 <sup>nd</sup> or 3 <sup>rd</sup> 9-Weeks	<input type="checkbox"/> <b>LESSON 4:</b> 2 <sup>nd</sup> or 3 <sup>rd</sup> 9-Weeks	<input checked="" type="checkbox"/> <b>LESSON 5:</b> 3 <sup>rd</sup> or 4 <sup>th</sup> 9-Weeks
<b>STANDARD(S):</b> Citing evidence and determining theme. Analyzing dialogue. Comparing and contrasting the short story verses the graphic novel version.				
<b>INSTRUCTIONAL OUTCOMES:</b> <b>Students will:</b> <ul style="list-style-type: none"><li>• Understand graphic novel and how to interpret and read the pictures.</li><li>• Be able to compare and contrast multiple literary sources and cite textual evidence.</li></ul>				
<b>STUDENT PARTICIPATION (<i>Lesson steps</i>):</b> <b>Students will:</b> <ol style="list-style-type: none"><li>1. Read graphic novel in close reader book. Pages 118-124, including the short response.</li></ol>				
<b>ACCOMMODATIONS:</b> <b>For struggling learners:</b> <ul style="list-style-type: none"><li>• Students will complete the even numbered questions as well as the short response.</li></ul> <b>For advanced learners:</b> <ul style="list-style-type: none"><li>• Also provide definitions of vocabulary and write sentence using the vocabulary word correctly.</li></ul>				
<b>HANDOUTS (<i>exact names of ALL accompanying handouts</i>) &amp; RESOURCES (<i>materials, websites, books, etc.</i>)</b> <ul style="list-style-type: none"><li>• Close reader book</li></ul>				
<b>EVIDENCE OF LEARNING</b> <b>Students will demonstrate their:</b> <ul style="list-style-type: none"><li>• Understanding how different mediums can produce the same result</li><li>• By being able to construct writing response and compare and contrast using appropriate textual evidence</li></ul>				

1. **READ** ▶ As you read the following two pages, begin to collect and cite text evidence.
  - Circle illustrations that show the characters' reactions to the "miracle."
  - Circle illustrations and text that tell you about the flying machine.
  - Circle the illustration of the Great Wall and explain its importance in the margin.

# The FLYING MACHINE

IN THE YEAR A.D. 400, THE EMPEROR YUAN HELD HIS THRONE BY THE GREAT WALL OF CHINA, AND THE LAND WAS GREEN WITH RAIN, READYING ITSELF TOWARD THE HARVEST, AT PEACE, THE PEOPLE IN HIS DOMINATION NEITHER TOO HAPPY NOR TOO SAD. EARLY ON THE MORNING OF THE FIRST DAY OF THE FIRST WEEK OF THE SECOND MONTH OF THE NEW YEAR, THE EMPEROR YUAN WAS SIPPING TEA AND FANNING HIMSELF AGAINST A WARM BREEZE WHEN A SERVANT RAN ACROSS THE SCARLET AND BLUE GARDEN TILES, CALLING...



THE EMPEROR STOPPED HIS FAN... ①

I SAW HIM IN THE AIR, A MAN FLYING WITH WINGS. I HEARD A VOICE CALL OUT OF THE SKY, AND WHEN I LOOKED UP, THERE HE WAS, A DRAGON IN THE HEAVENS WITH A MAN IN ITS MOUTH, A DRAGON OF PAPER AND BAMBOO, COLORED LIKE THE SUN AND THE GRASS.

IT IS EARLY, AND YOU HAVE JUST WAKENED FROM A DREAM.

IT IS EARLY, BUT I HAVE SEEN WHAT I HAVE SEEN! COME, AND YOU WILL SEE IT TOO.

SIT DOWN WITH ME HERE, DRINK SOME TEA. IT MUST BE A STRANGE THING, IF IT IS TRUE, TO SEE A MAN FLY. YOU MUST HAVE TIME TO THINK OF IT, EVEN AS I MUST HAVE TIME TO PREPARE MYSELF FOR THE SIGHT.

THEY DRANK TEA. THE EMPEROR ROSE THOUGHTFULLY AS THE SERVANT PLEADED...

PLEASE, OR HE WILL BE GONE.

NOW YOU MAY SHOW ME WHAT YOU HAVE SEEN.

THEY WALKED INTO A GARDEN, ACROSS A MEADOW OF GRASS, OVER A SMALL BRIDGE, THROUGH A GROVE OF TREES, AND UP A TINY HILL...

THERE!

THE EMPEROR LOOKED INTO THE SKY...

AND IN THE SKY, LAUGHING SO HIGH THAT YOU COULD HARDLY HEAR HIM LAUGH, WAS A MAN; AND THE MAN WAS CLOTHED IN BRIGHT PAPERS AND REEDS TO MAKE WINGS AND A BEAUTIFUL YELLOW TAIL, AND HE WAS SOARING ALL ABOUT LIKE THE LARGEST BIRD IN A UNIVERSE OF BIRDS, LIKE A NEW DRAGON IN A LAND OF ANCIENT DRAGONS...

I FLY! I FLY!

YES! YES...

THE EMPEROR YUAN DID NOT MOVE. INSTEAD HE LOOKED AT THE GREAT WALL OF CHINA NOW TAKING SHAPE OUT OF THE FARTHEST MIST IN THE GREEN HILLS, THAT WONDERFUL WALL WHICH HAD PROTECTED THEM FOR A TIMELESS TIME FROM ENEMY HORDES AND PRESERVED PEACE FOR YEARS WITHOUT NUMBER...

TELL ME, HAS ANYONE ELSE SEEN THIS FLYING MAN?

I AM THE ONLY ONE EXCELLENCY.

THE EMPEROR WATCHED THE HEAVENS ANOTHER MINUTE AND THEN SAID...

CALL HIM DOWN TO ME.

HO, COME DOWN, COME DOWN! THE EMPEROR WISHES TO SEE YOU!

2. **◀ REREAD** Contrast the drawings of the Emperor with the drawings of the servant. How do the illustrations convey each character's feelings about the flying machine?

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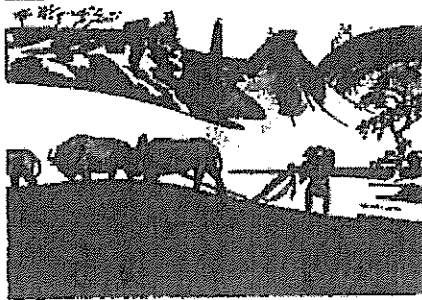
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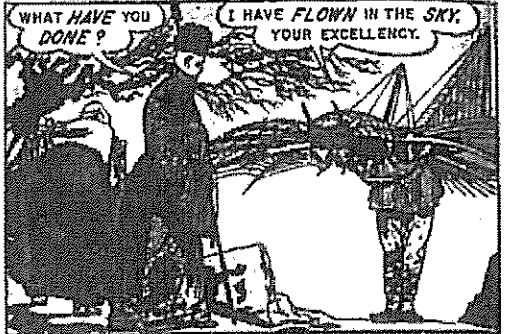
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**CLOSE READ**  
Notes

THE EMPEROR GLANCED IN ALL DIRECTIONS WHILE THE FLYING MAN SOARED DOWN THE MORNING WIND. HE SAW A FARMER, EARLY IN HIS FIELDS, WATCHING THE SKY, AND HE NOTED WHERE THE FARMER STOOD...



THE FLYING MAN ALIT WITH A RUSTLE OF PAPER AND A CREAK OF BAMBOO REEDS. HE CAME PROUDLY TO THE EMPEROR, CLUMSY IN HIS RIG, AT LAST BOWING BEFORE THE OLD MAN...



WHAT HAVE YOU DONE?

I HAVE JUST TOLD YOU!

YOU HAVE TOLD ME NOTHING AT ALL.

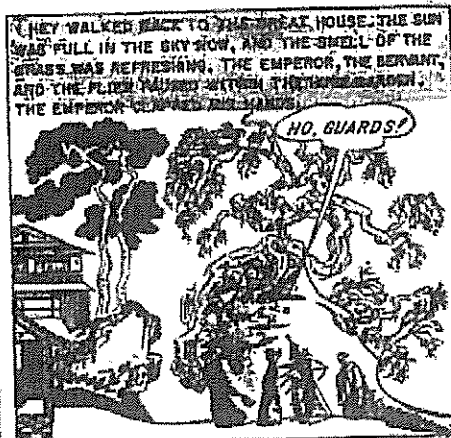


THE EMPEROR REACHED OUT A THIN HAND TO TOUCH THE PRETTY PAPER AND THE BIRDLIKE KEEL OF THE APPARATUS. IT SMELLED COOL, OF THE WIND...



3. **READ** ▶ As you read this page and the next, continue to cite text evidence.

- In the margin, explain the purpose of the Emperor's questions.
- On the next page, underline the question the flying man asks.
- Circle the close up of the Emperor's face.



THE GUARDS CAME RUNNING...



THE GUARDS SEIZED THE FLIER...



HERE IS A MAN WHO HAS MADE A CERTAIN MACHINE, AND YET HE ASKS US WHAT HE HAS CREATED. HE DOES NOT KNOW HIMSELF. IT IS ONLY NECESSARY THAT HE CREATE, WITHOUT KNOWING WHY HE HAS DONE SO, OR WHAT THIS THING WILL DO.



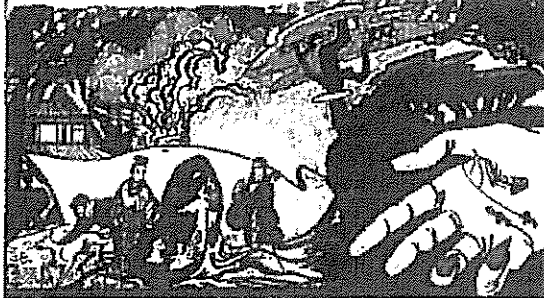
THE EMPEROR TURNED TO A NEARBY TABLE UPON WHICH SAT A MACHINE THAT HE HIMSELF HAD CREATED. HE TOOK A TINY GOLDEN KEY FROM AROUND HIS OWN NECK. HE FITTED THIS KEY TO THE TINY, DELICATE MACHINE AND WOUND IT UP...



4. ◀ **REREAD AND DISCUSS** In a small group, discuss how the Emperor's expression in the close-up image might affect your perception of the story. Cite textual evidence in your discussion.



THE MACHINE WAS A GARDEN OF METAL AND JEWELS. SET IN MOTION, BIRDS SANG IN TINY METAL TREES, WOLVES WALKED THROUGH MINIATURE FORESTS, AND TINY PEOPLE RAN IN AND OUT OF SUN AND SHADOW, FANNING THEMSELVES WITH MINIATURE FANS, LISTENING TO THE TINY EMERALD BIRDS, AND STANDING BY IMPOSSIBLY SMALL BUT TINKLING FOUNTAINS.



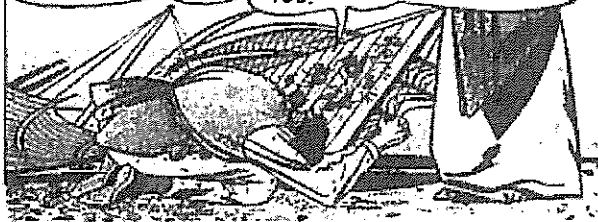
THE EMPEROR SAID...

IS IT NOT BEAUTIFUL? IF YOU ASKED ME WHAT I HAVE DONE HERE, I COULD ANSWER YOU WELL. I HAVE MADE BIRDS SING, I HAVE MADE FORESTS MURMUR, I HAVE SET PEOPLE TO WALKING IN THIS WOODLAND, ENJOYING THE LEAVES AND SHADOWS AND SONGS. THAT IS WHAT I HAVE DONE.



THE FLIER, ON HIS KNEES, THE TEARS POURING DOWN HIS FACE, PLEADED,

BUT I HAVE DONE A SIMILAR THING! I HAVE FOUND BEAUTY. I HAVE FLOWN ON THE MORNING WIND. I HAVE LOOKED DOWN ON ALL THE SLEEPING HOUSES AND GARDENS. I HAVE SMELLED THE SEA AND EVEN SEEN IT, BEYOND THE HILLS, FROM MY HIGH PLACE. AND I HAVE SOARED LIKE A BIRD. OH, I CANNOT SAY HOW BEAUTIFUL IT IS UP THERE, IN THE SKY, WITH THE WIND ABOUT ME, BLOWING ME LIKE A FEATHER. THAT IS BEAUTIFUL, EMPEROR, THAT IS BEAUTIFUL, TOO!



YES, I KNOW IT MUST BE TRUE. FOR I FELT MY HEART MOVE WITH YOU IN THE AIR AND I WONDERED: WHAT IS IT LIKE? HOW DOES IT FEEL? HOW DO THE DISTANT POOLS LOOK FROM SO HIGH? AND HOW MY HOUSES AND SERVANTS? LIKE ANTS? AND HOW THE DISTANT TOWNS, NOT YET AWAKE?



THEN SPARE ME!

BUT THERE ARE TIMES WHEN ONE MUST LOSE A LITTLE BEAUTY IF ONE IS TO KEEP WHAT LITTLE BEAUTY ONE ALREADY HAS. I DO NOT FEAR YOU, YOURSELF, BUT I FEAR ANOTHER MAN.



WHAT MAN?

SOME OTHER MAN WHO, SEEING YOU, WILL BUILD A THING OF BRIGHT PAPERS AND BAMBOO LIKE THIS. BUT THE OTHER MAN WILL HAVE AN EVIL FACE AND AN EVIL HEART, AND THE BEAUTY WILL BE GONE. IT IS THIS MAN I FEAR!



WHY? WHY?

WHO IS TO SAY THAT SOMEDAY JUST SUCH A MAN, IN JUST SUCH AN APPARATUS, MIGHT NOT FLY IN THE SKY AND DROP HUGE STONES UPON THE GREAT WALL OF CHINA?



5. **READ** ▶ As you read this page and the next, continue to cite text evidence.

- Circle repetitions of "beauty" and "beautiful," and in the margin, explain the flier's argument that his life should be spared.
- In the margin, explain the imagery that illustrates the flier's death.
- Circle birds in the last frame.

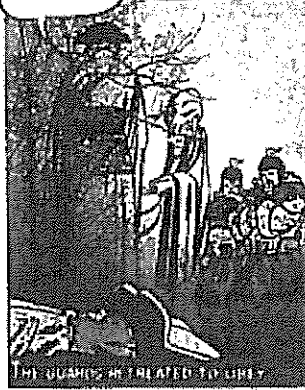
NO ONE MOVED OR SAID A WORD...



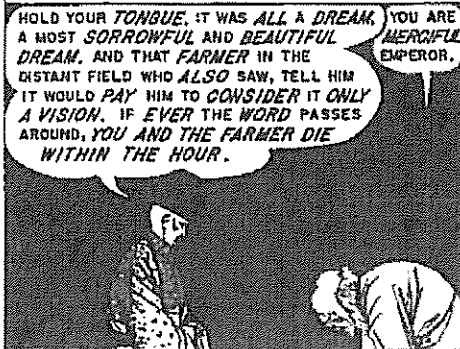
THE EXECUTIONER WHIRLED HIS SILVER AX...



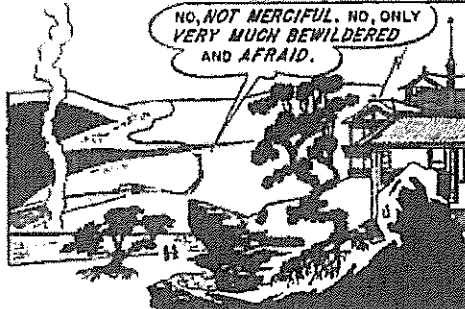
BURN THE KITE AND THE INVENTOR'S BODY AND BURY THEIR ASHES TOGETHER...



THE EMPEROR TURNED TO HIS SERVANT WHO HAD SEEN THE MAN FLYING...



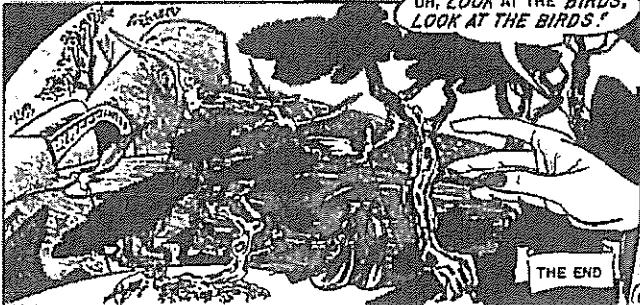
THE OLD MAN SAW, BEYOND THE GARDEN WALL, THE GUARDS BURNING THE BEAUTIFUL MACHINE OF PAPER AND REEDS THAT SMELLED OF MORNING WIND. HE SAW THE DARK SMOKE CLIMB INTO THE SKY...



HE SAW THE GUARDS DIGGING A TINY PIT WHEREIN TO BURY THE ASHES...



HE TOOK THE KEY FROM ITS CHAIN ABOUT HIS NECK AND ONCE MORE WOUND UP THE BEAUTIFUL MINATURE GARDEN. THE TINY GARDEN WHIRLED ITS HIDDEN AND DELICATE MACHINERY AND SET ITSELF INTO MOTION; TINY PEOPLE WALKED IN FORESTS, TINY FOXES LOPED THROUGH SUN-SPECKLED GLADES, AND AMONG THE TINY TREES FLEW LITTLE BITS OF HIGH SONG AND BRIGHT BLUE AND YELLOW COLOR, FLYING, FLYING, FLYING IN THAT SMALL SKY. AND THE EMPEROR SAID, CLOSING HIS EYES...



THE END



- ## READ AND DISCUSS

## SHORT RESPONSE

**Cite Text Evidence** What are the advantages of reading “The Flying Machine” as a graphic story instead of a short story? Review your reading notes, and remember to cite text evidence in your response.

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