

**2020**

Erie Rise Leadership  
Academy Charter School

Parent Lesson Plan

## **[ PARENT LESSON PLAN ]**

6th Grade Week 4 April 13 - April 17

## Contents

INTRODUCTION	1
HELPFUL INFORMATION	3
Distribution Sites/Information	3
Leadership Team	3
DIGITAL LESSON PACING GUIDE	4
ConnectED Instructions	4
USATestPrep Instructions	4
Pacing Guide	4
ELA PRINT MATERIAL	5
MATH PRINT MATERIALS	6
SCIENCE/SOCIAL STUDIES PRINT MATERIAL	7
ADDITIONAL RESOURCES (EDUCATIONAL)	8

## INTRODUCTION

---

Hello Parents!

Included in this packet is a week's worth of printed ELA, Mathematics, and Science/Social Studies work for your students while they are at home. Each day is separated into the 3 content areas for the printed material. If you have access to the digital curriculum, a pacing guide is also provided outlining the digital component assigned for each specific day. If you need technology, please contact the school and we can make it available to you. Also remember, USATestPrep is always an option!

We know some of this material maybe be challenging, but try your best to complete it! Hopefully we will see you back in the classroom soon and will be able to go over all the information.

Printed materials may be turned into to the distribution centers once completed, but it is not a requirement.

Mrs. Will will be available on Youtube Live every day from 10AM-11AM to assist with curriculum questions and/or any resource questions for parents or students.

Stay safe and healthy everyone!

Missing seeing everyone's smiling face! Remember to wash your hands!

Educationally Yours ,  
Mrs. Veronica Will

## HELPFUL INFORMATION

---

### **Distribution Sites/Information**

Food/Curriculum distribution will take place at:

Erie Rise Leadership Academy Charter School  
1006 West 10<sup>th</sup> Street  
Erie, PA 16502

Monday and Wednesday from 9AM until 12PM

### **Leadership Team**

Mr. Terry Lang, CEO: 814 812-0503  
Mrs. Veronica Will, Principal: 814 873-5158  
Mr. Aubrey Favors, HR: 814 812-3026  
Mr. Kirk Paskell, Transportation: 814 566-0002  
Mr. Homer Smith, PR: 814 392-3413  
Mrs. Pearl Jeffries, Social Services: 814 722-5056

## DIGITAL LESSON PACING GUIDE

---

### ConnectED Instructions

Please see attached instructions for accessing the digital curriculum.

### USATestPrep Instructions

Please see attached instructions for accessing this test-prep site.

If you have access to high speed internet, below are the assignments the teachers have assigned for the various content areas:

### Digital Pacing Guide

	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>
<b>ELA/ Writing</b>	ConnectEd StudySync Assignment: Monday April 13th	ConnectEd StudySync Assignment: Monday April 14th	ConnectEd StudySync Assignment: Monday April 15th	ConnectEd StudySync Assignment: Monday April 16th	ConnectEd StudySync Assignment: Monday April 16th
<b>Math</b>	<b>Blue Notebook</b> Week 10 Day 1 <b>Pearson Book:</b> Chapter 5 Lesson 1: Understand Ratios Examples 1-3	<b>Blue Notebook</b> Week 10 Day 2 <b>Pearson Book:</b> Chapter 5 Lesson 1: Understand Ratios Workbook Numbers 1-19	<b>Blue Notebook</b> Week 10 Day 3 <b>Pearson Book:</b> Chapter 5 Lesson 1: Understand Ratios Workbook Numbers 20- 24	<b>Blue Notebook</b> Week 10 Day 4 <b>Pearson Book:</b> Chapter 5 Lesson 1: Finish what you haven't	<b>Blue Notebook</b> Week 10 Day 5 <b>Pearson Book:</b> Chapter 5 Lesson 1: Finish what you haven't
<b>Science</b>	USATestPrep Khan Academy	USATestPrep Khan Academy	USATestPrep Khan Academy	USATestPrep Khan Academy	USATestPrep Khan Academy
<b>Social Studies</b>	Lesson: Chapter 15: Intro to Chapter USA Test Prep Khan Academy	Lesson: Chapter 15: Place and Time USA Test Prep Khan Academy	Lesson: Chapter 15: Lesson 1 USA Test Prep Khan Academy	Lesson: Chapter 15 Lesson 2 USA Test Prep Khan Academy	Lesson: Chapter 15: Lesson 3 USA Test Prep Khan Academy

## ELA PRINT MATERIAL

---

### Writing: Spelling Words Packet

- Students can complete the packet at their own pace throughout the week.

### Packet Includes:

- 20 Word Spelling List
- Spelling Bee Packet (see below for more information)
- Word scramble
- Alphabetical Order
- Finding the missing letter
- Find the correct spelling
- Create Sentences
- Define each word

The spelling bee packet gives the correct spellings and the definitions for the words on their list. Students may use this to complete their work, they will need to search for each word in the packet. Students may want to keep the spelling bee packet for future use. Students may go on USATest Prep for more ELA practice.

### Reading:

- Go to <https://connected.mcgraw-hill.com/connected/login.do>
- Login in using personal username and password
  - 6th Grade: Launch Study Sync
    - Launch Study Sync AGAIN
    - Click assignments in top/center of screen
    - Complete assignments daily by DATE
    - Don't forget to click SUBMIT when you've completed it
- **Day 1:** First Read: An American Plague: The True and Terrifying Story of the Yellow Fever Epidemic of 1793
  - Read the Introduction, read the Read section (Chapter 2: All Was Not Right), and then answer the Think question.
- **Day 2:** Central or Main Idea- An American Plague: The True and Terrifying Story of the Yellow Fever Epidemic of 1793
  - Read the Define section, read the Model section, complete the Your turn section
- **Day 3:** Close Read: An American Plague: The True and Terrifying Story of the Yellow Fever Epidemic of 1793
  - Complete the Vocabulary section
- **Day 4:**
  - Reread the Read section (story) from Day 1
  - Read the prompt and start brainstorming ideas for the prompt, you can write a list or make an outline.
- **Day 5:**
  - Reread the Read section (Chapter 2: All Was Not Right) from Day 1.
  - Write final answer to Prompt in space provided

## **MATH PRINT MATERIALS**

---

### **Day 1:**

1. Complete Basic Facts - Create Flashcards, time how many they get correct in 5 mins
  - a. Your student will know what basic facts s/he is working on.
2. Blue Notebook
  - a. Week 10 Day 1
3. Pearson Book Printed
  - a. Complete the Examples 1-3

### **Day 2:**

4. Complete Basic Facts - Create Flashcards, time how many they get correct in 5 mins
  - a. Your student will know what basic facts s/he is working on.
5. Blue Notebook
  - a. Week 10 Day 2
6. Pearson Book Printed
  - a. Complete Numbers 1-19

### **Day 3:**

7. Complete Basic Facts - Create Flashcards, time how many they get correct in 5 mins
  - a. Your student will know what basic facts s/he is working on.
8. Blue Notebook
  - a. Week 10 Day 3
9. Pearson Book Printed
  - a. Complete Numbers 20-24

### **Day 4:**

10. Complete Basic Facts - Create Flashcards, time how many they get correct in 5 mins
  - a. Your student will know what basic facts s/he is working on.
11. Blue Notebook
  - a. Week 10 Day 4
12. Pearson Book Printed
  - a. Finish what you haven't.

### **Day 5:**

13. Complete Basic Facts - Create Flashcards, time how many they get correct in 5 mins
  - a. Your student will know what basic facts s/he is working on.
14. Blue Notebook
  - a. Week 10 Day 5
15. Pearson Book Printed
  - a. Finish what you haven't.

## **SCIENCE/SOCIAL STUDIES PRINT MATERIAL**

---

**Science: Technological Design (pages 124-131, printed)**

---

- **Day 1:**
  - Read pages 124-125
  - Highlight or underline important information and vocabulary words
  - Answer interactive questions while reading
- **Day 2:**
  - Read pages 126-128
  - Highlight or underline important information and vocabulary words
  - Answer interactive questions while reading
- **Day 3:**
  - Read pages 129-131
  - Highlight or underline important information and vocabulary words
  - Answer interactive questions while reading
- **Day 4:**
  - Use the lesson pages to help complete the worksheet titled 'Review and Reinforce Technological Design'
- **Day 5:**
  - Use the lesson pages to help complete the worksheet titled 'Lesson Quiz Technological Design'
- **Online Work (completed throughout the week):**
  - USATestPrep Assignments
  - Khan Academy Assignments

**Social Studies:**

**The textbook used in class is available online to use.**

- **Day 1:**
  - Using either the online or print material, complete the Chapter 15 Introduction.
  - USA Test Prep assignments are due on Wednesday April 15th
  - Khan Academy material is due on Wednesday April 15th
  - Course material is also available online.
- **Day 2:**
  - Using either the online or print material, complete the Chapter 15: Place and Time material.
  - USA Test Prep assignments are due tomorrow, April 15th.
  - Khan Academy material is due tomorrow, April 15th.
  - Course material is also available online.
- **Day 3:**
  - Using either the online or print material, complete the Chapter 15: Lesson 1 Material.
  - USA Test Prep assignments are due Friday, April 17th.
  - Khan Academy Assignments are due Friday, April 17th.
  - Course material is also available online.
- **Day 4:**
  - Using either the online or print material, complete the Chapter 15: Lesson 2 Material.
  - USA Test Prep assignments are due tomorrow, April 17th.
  - Khan Academy Assignments are due tomorrow, April 17th.
  - Course material is also available online.
- **Day 5:**



- Using either the online or print material, complete Chapter 15: Lesson 3 Material.
- USA Test Prep assignments are due today!
- Khan Academy assignments are due today!
- Course material is also available online.

Also, attached is a new power point assignment for all students if they have internet access. Here are the log-ins to use!

Ms. Barbero's Class:

[6thgeo1@gmail.com](mailto:6thgeo1@gmail.com)

Riseup2020

Mr. Johnson's Class:

[6thgeo2@gmail.com](mailto:6thgeo2@gmail.com)

Riseup2022

Mr. Drotar's Class:

[6thgeo3@gmail.com](mailto:6thgeo3@gmail.com)

Riseup19!

### **ADDITIONAL RESOURCES (EDUCATIONAL)**

---

Included are a list of hand selected resources for students with internet to use at home.

<https://my.mheducation.com/login>

<https://www.usatestprep.com/>

<https://www.khanacademy.org/>

<https://www.cdc.gov/flu/pandemic-resources/1918-commemoration/pandemic-timeline-1918.htm>



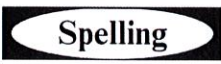
Unscramble each of the words.

Usual	Pressure	Buckle	Pulse
Comfort	Profile	Campaign	Static
Expiration	Residence	Disturbance	Writers
Sanitized	Arrange	Discussion	Scrambling
Distressed	Shuffle	Trowel	Distance

Answers

- 1) ersersup \_\_\_\_\_
- 2) uslpe \_\_\_\_\_
- 3) grmabincls \_\_\_\_\_
- 4) torfmco \_\_\_\_\_
- 5) rnreaag \_\_\_\_\_
- 6) irrwste \_\_\_\_\_
- 7) nideeecs r \_\_\_\_\_
- 8) dcneuasbirt \_\_\_\_\_
- 9) pagcinam \_\_\_\_\_
- 10) hesfulf \_\_\_\_\_
- 11) ossicidsun \_\_\_\_\_
- 12) poflire \_\_\_\_\_
- 13) ticast \_\_\_\_\_
- 14) eowrtl \_\_\_\_\_
- 15) stinziead \_\_\_\_\_
- 16) lsuau \_\_\_\_\_
- 17) axntropeii \_\_\_\_\_
- 18) ssriedtdse \_\_\_\_\_
- 19) kelcub \_\_\_\_\_
- 20) tiseancd \_\_\_\_\_

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_
- 11. \_\_\_\_\_
- 12. \_\_\_\_\_
- 13. \_\_\_\_\_
- 14. \_\_\_\_\_
- 15. \_\_\_\_\_
- 16. \_\_\_\_\_
- 17. \_\_\_\_\_
- 18. \_\_\_\_\_
- 19. \_\_\_\_\_
- 20. \_\_\_\_\_



1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0



Find each word.

Usual	Pressure	Buckle	Pulse
Comfort	Profile	Campaign	Static
Expiration	Residence	Disturbance	Writers
Sanitized	Arrange	Discussion	Scrambling
Distressed	Shuffle	Trowel	Distance

S N S A R R A N G E I S M T D  
X H K C C O M F O R T A Q Z I  
H W U P R B F Y X B P N D V S  
V R O F S A U D E X U I I U C  
D T X E F I M C Y J L T S B U  
S I J Y X L L B K M S I T W S  
B T S K M P E Y L L E Z R R S  
R F A T P G I C T I E E E I I  
G P I T U R L R A D N D S T O  
N B O E I R E W A M A G S E N  
U S U A L C B S B T P A E R Z  
P R O F I L E A S H I A D S N  
D I S T A N C E N U M O I S A  
R T R O W E L S F C R O N G E  
D R E S I D E N C E E E L S N



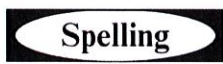
Order the words from A to Z.

Distance	Scrambling	Writers	Shuffle
Static	Disturbance	Usual	Trowel
Distressed	Campaign	Discussion	Expiration
Comfort	Sanitized	Buckle	Arrange
Residence	Pulse	Pressure	Profile

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_
- 6) \_\_\_\_\_
- 7) \_\_\_\_\_
- 8) \_\_\_\_\_
- 9) \_\_\_\_\_
- 10) \_\_\_\_\_
- 11) \_\_\_\_\_
- 12) \_\_\_\_\_
- 13) \_\_\_\_\_
- 14) \_\_\_\_\_
- 15) \_\_\_\_\_
- 16) \_\_\_\_\_
- 17) \_\_\_\_\_
- 18) \_\_\_\_\_
- 19) \_\_\_\_\_
- 20) \_\_\_\_\_

Answers

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_
12. \_\_\_\_\_
13. \_\_\_\_\_
14. \_\_\_\_\_
15. \_\_\_\_\_
16. \_\_\_\_\_
17. \_\_\_\_\_
18. \_\_\_\_\_
19. \_\_\_\_\_
20. \_\_\_\_\_





Fill in the missing letters to create words from your spelling list.

Usual	Pressure	Buckle	Pulse
Comfort	Profile	Campaign	Static
Expiration	Residence	Disturbance	Writers
Sanitized	Arrange	Discussion	Scrambling
Distressed	Shuffle	Trowel	Distance

Answers

- 1) \_ h u \_ f \_ e \_\_\_\_\_
- 2) \_ a \_ p a \_ \_ n \_\_\_\_\_
- 3) \_ c r a \_ b \_ \_ n g \_\_\_\_\_
- 4) \_ \_ o f i \_ \_ \_\_\_\_\_
- 5) \_ u c \_ \_ e \_\_\_\_\_
- 6) d i s \_ \_ s s \_ \_ \_ \_\_\_\_\_
- 7) d \_ \_ \_ u \_ b a \_ \_ e \_\_\_\_\_
- 8) \_ \_ r \_ n \_ e \_\_\_\_\_
- 9) \_ s \_ \_ l \_\_\_\_\_
- 10) \_ \_ e \_ s u \_ e \_\_\_\_\_
- 11) \_ r o \_ e l \_\_\_\_\_
- 12) s a n \_ \_ i \_ e \_ \_\_\_\_\_
- 13) \_ u l \_ \_ \_\_\_\_\_
- 14) \_ r \_ \_ \_ r s \_\_\_\_\_
- 15) e x p \_ r \_ t \_ \_ n \_\_\_\_\_
- 16) r \_ \_ \_ \_ n c e \_\_\_\_\_
- 17) \_ \_ s t \_ e \_ s e d \_\_\_\_\_
- 18) s t \_ \_ \_ c \_\_\_\_\_
- 19) c \_ m \_ \_ r t \_\_\_\_\_
- 20) d i \_ \_ \_ \_ c e \_\_\_\_\_

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_
12. \_\_\_\_\_
13. \_\_\_\_\_
14. \_\_\_\_\_
15. \_\_\_\_\_
16. \_\_\_\_\_
17. \_\_\_\_\_
18. \_\_\_\_\_
19. \_\_\_\_\_
20. \_\_\_\_\_



1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0



Use the word listed in a sentence.

Usual	Pressure	Buckle	Pulse
Comfort	Profile	Campaign	Static
Expiration	Residence	Disturbance	Writers
Sanitized	Arrange	Discussion	Scrambling
Distressed	Shuffle	Trowel	Distance

1) Comfort \_\_\_\_\_  
\_\_\_\_\_

2) Disturbance \_\_\_\_\_  
\_\_\_\_\_

3) Residence \_\_\_\_\_  
\_\_\_\_\_

4) Pulse \_\_\_\_\_  
\_\_\_\_\_

5) Profile \_\_\_\_\_  
\_\_\_\_\_

6) Writers \_\_\_\_\_  
\_\_\_\_\_

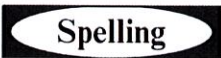
7) Discussion \_\_\_\_\_  
\_\_\_\_\_

8) Arrange \_\_\_\_\_  
\_\_\_\_\_

9) Shuffle \_\_\_\_\_  
\_\_\_\_\_

10) Expiration \_\_\_\_\_  
\_\_\_\_\_

11) Static \_\_\_\_\_  
\_\_\_\_\_

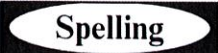


1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0



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

- 12) Campaign \_\_\_\_\_  
\_\_\_\_\_
- 13) Distance \_\_\_\_\_  
\_\_\_\_\_
- 14) Pressure \_\_\_\_\_  
\_\_\_\_\_
- 15) Scrambling \_\_\_\_\_  
\_\_\_\_\_
- 16) Usual \_\_\_\_\_  
\_\_\_\_\_
- 17) Trowel \_\_\_\_\_  
\_\_\_\_\_
- 18) Sanitized \_\_\_\_\_  
\_\_\_\_\_
- 19) Buckle \_\_\_\_\_  
\_\_\_\_\_
- 20) Distressed \_\_\_\_\_  
\_\_\_\_\_



[www.CommonCoreSheets.com](http://www.CommonCoreSheets.com)



Define each word.

Usual	Pressure	Buckle	Pulse
Comfort	Profile	Campaign	Static
Expiration	Residence	Disturbance	Writers
Sanitized	Arrange	Discussion	Scrambling
Distressed	Shuffle	Trowel	Distance

1) Static ( Part of Speech ) \_\_\_\_\_

2) Distressed ( Part of Speech ) \_\_\_\_\_

3) Trowel ( Part of Speech ) \_\_\_\_\_

4) Comfort ( Part of Speech ) \_\_\_\_\_

5) Arrange ( Part of Speech ) \_\_\_\_\_

6) Residence ( Part of Speech ) \_\_\_\_\_

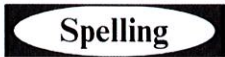
7) Pressure ( Part of Speech ) \_\_\_\_\_

8) Campaign ( Part of Speech ) \_\_\_\_\_

9) Writers ( Part of Speech ) \_\_\_\_\_

10) Disturbance ( Part of Speech ) \_\_\_\_\_

11) Usual ( Part of Speech ) \_\_\_\_\_



1-10	95	90	85	80	75	70	65	60	55	50
11-20	45	40	35	30	25	20	15	10	5	0





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

- 12) Pulse ( Part of Speech ) \_\_\_\_\_  
\_\_\_\_\_
- 13) Shuffle ( Part of Speech ) \_\_\_\_\_  
\_\_\_\_\_
- 14) Distance ( Part of Speech ) \_\_\_\_\_  
\_\_\_\_\_
- 15) Discussion ( Part of Speech ) \_\_\_\_\_  
\_\_\_\_\_
- 16) Expiration ( Part of Speech ) \_\_\_\_\_  
\_\_\_\_\_
- 17) Sanitized ( Part of Speech ) \_\_\_\_\_  
\_\_\_\_\_
- 18) Buckle ( Part of Speech ) \_\_\_\_\_  
\_\_\_\_\_
- 19) Scrambling ( Part of Speech ) \_\_\_\_\_  
\_\_\_\_\_
- 20) Profile ( Part of Speech ) \_\_\_\_\_  
\_\_\_\_\_



[www.CommonCoreSheets.com](http://www.CommonCoreSheets.com)





# Scripps National Spelling Bee

## Vocabulary List for Difficulty Level Two Bee

### 2019-2020

---

1.	<b>disembark</b>	<i>(verb)</i>	to leave or go ashore from a ship.
2.	<b>earthquake</b>	<i>(noun)</i>	a trembling or shaking of the earth that accompanies crustal movements.
3.	<b>brought</b>	<i>(verb)</i>	conveyed or carried along from one place to another.
4.	<b>gallop</b>	<i>(noun)</i>	the natural three-beat gait of a horse.
5.	<b>dinosaur</b>	<i>(noun)</i>	a member of a group of extinct reptiles.
6.	<b>ancient</b>	<i>(adjective)</i>	existing from a long ago period or date.
7.	<b>tapestry</b>	<i>(noun)</i>	a heavy textile woven by hand used for hangings or curtains.
8.	<b>delivery</b>	<i>(noun)</i>	an instance of the physical transfer of a shipment.
9.	<b>attagirl</b>	<i>(interjection)</i>	– used to express encouragement or approval to a woman or girl.
10.	<b>salamanders</b>	<i>(plural noun)</i>	various small amphibians that resemble lizards but don't have scales, are covered with a soft moist skin, live in moist dark places, pose no harm to humans, and feed on small animals such as aquatic worms and insects.
11.	<b>usual</b>	<i>(adjective)</i>	in accordance with the normal custom, usage or habit.
12.	<b>challenge</b>	<i>(noun)</i>	a thing which one can devote energy or effort to.
13.	<b>cahoots</b>	<i>(plural noun)</i>	secret agreement : collusion.
14.	<b>oozing</b>	<i>(verb)</i>	moving slowly or without notice.
15.	<b>Mars</b>	<i>(noun)</i>	the planet that is fourth from the sun and is noted for its apparent red color.
16.	<b>pelican</b>	<i>(noun)</i>	a large web-footed bird with long wings and a very large bill having a throat pouch in which it catches fish.
17.	<b>drastic</b>	<i>(adjective)</i>	notably vigorous or severe.
18.	<b>yoga</b>	<i>(noun)</i>	a group of exercises for achieving well-being and control of mind and body.
19.	<b>burlap</b>	<i>(noun)</i>	a coarse heavy plain-woven fabric typically made from hemp or jute that is used for bagging and wrapping items.
20.	<b>blazer</b>	<i>(noun)</i>	a single-breasted sports jacket usually with bright stripes or in a solid color that has a notched collar and patch pockets.
21.	<b>trombone</b>	<i>(noun)</i>	a brass instrument that consists of a long cylindrical metal tube that ends in a bell and has a movable slide which makes musical sounds.
22.	<b>trembling</b>	<i>(verb)</i>	quaking due to fear or another emotion.
23.	<b>calmed</b>	<i>(verb)</i>	made peaceful : induced quiet and peace in place of agitation or passion.
24.	<b>police</b>	<i>(noun)</i>	the department of the government which is concerned with maintaining public order, safety and health, and which has the power to enforce laws.
25.	<b>certain</b>	<i>(adjective)</i>	given to or marked by complete conviction and assurance.
26.	<b>barograph</b>	<i>(noun)</i>	an automatic instrument which is used to record variations in atmospheric pressure.



This list includes 225 challenging upper elementary words. If you learn the spellings and meanings of these words, you will be well prepared for your classroom bee. If you would like to be well prepared for a school spelling bee, ask your teacher for the 450-word School Spelling Bee Study List, which includes the words listed here in addition to the words at the One Bee and Three Bee levels of difficulty.

27.	<b>charred</b>	<i>(verb)</i>	partly burned on the outside.
28.	<b>Pakistan</b>	<i>(geographical entry)</i>	a country in southern Asia which borders the Arabian Sea.
29.	<b>pressure</b>	<i>(noun)</i>	the burden of mental or physical distress.
30.	<b>surmised</b>	<i>(verb)</i>	guessed : formed an opinion without substantial proof or certain knowledge.
31.	<b>teak</b>	<i>(noun)</i>	the hard, strong, durable, yellowish brown wood of a tall East Indian timber tree which is highly resistant to insect attack and warping and is used for shipbuilding.
32.	<b>transit</b>	<i>(noun)</i>	the public transportation of people by bus, subway train or other local system of conveyance.
33.	<b>cannonade</b>	<i>(noun)</i>	a noisy persistent attack (as of questions).
34.	<b>appetite</b>	<i>(noun)</i>	the desire to eat when food is available.
35.	<b>luggage</b>	<i>(noun)</i>	suitcases, bags used for travel or other articles used to carry a traveler's belongings.
36.	<b>ramparts</b>	<i>(plural noun)</i>	protective barriers.
37.	<b>vinyl</b>	<i>(noun)</i>	any of a group of tough durable plastics based on resins that are used especially in the forming of films and sheeting, flooring, and sound records.
38.	<b>anemometers</b>	<i>(plural noun)</i>	tools used to gauge the speed of the wind.
39.	<b>dainty</b>	<i>(adjective)</i>	characterized by beauty that is delicate in nature.
40.	<b>buckle</b>	<i>(verb)</i>	to secure two loose ends of something (such as a belt) with one end having a fastening and the other a catch.
41.	<b>vividly</b>	<i>(adverb)</i>	intensely, sharply, keenly.
42.	<b>briny</b>	<i>(adjective)</i>	salty.
43.	<b>pavement</b>	<i>(noun)</i>	the surface of a public thoroughfare which is artificially covered.
44.	<b>garnet</b>	<i>(noun)</i>	a brittle material which is typically red in color and occurs mainly in crystals.
45.	<b>furrow</b>	<i>(verb)</i>	to cultivate or till as if with a plow.
46.	<b>sprawl</b>	<i>(verb)</i>	to lie or sit with arms and legs stretched out : to spread out.
47.	<b>museum</b>	<i>(noun)</i>	a building or institution which is devoted to the gathering, care, study and display of objects of lasting interest and value.
48.	<b>wren</b>	<i>(noun)</i>	any of various small brown singing birds.
49.	<b>legend</b>	<i>(noun)</i>	someone having a special status as a result of possessing extraordinary qualities that are typically partly real and partly mythical.
50.	<b>transistor</b>	<i>(noun)</i>	an electronic device made of a small block of a semiconductor with three electrodes on it and that conducts electrons moving in one direction to the opposite direction.



This list includes 225 challenging upper elementary words. If you learn the spellings and meanings of these words, you will be well prepared for your classroom bee. If you would like to be well prepared for a school spelling bee, ask your teacher for the 450-word School Spelling Bee Study List, which includes the words listed here in addition to the words at the One Bee and Three Bee levels of difficulty.

51.	<b>amplify</b>	<i>(verb)</i>	to expand, extend or enlarge a statement or idea by adding details or illustration.
52.	<b>security</b>	<i>(noun)</i>	freedom from care, anxiety or fear.
53.	<b>refrain</b>	<i>(noun)</i>	a phrase or verse that recurs regularly typically within a poem or song.
54.	<b>tactics</b>	<i>(plural noun)</i>	methods : systems of procedure.
55.	<b>shepherd</b>	<i>(noun)</i>	a man employed in tending, feeding and guarding sheep.
56.	<b>Angus</b>	<i>(noun)</i>	any of a breed of hornless black or red beef cattle originally from Scotland.
57.	<b>mulish</b>	<i>(adjective)</i>	stubborn, inflexible or uncompromising.
58.	<b>rivalry</b>	<i>(noun)</i>	competition.
59.	<b>siblings</b>	<i>(plural noun)</i>	two or more people with the same parents.
60.	<b>chestnut</b>	<i>(noun)</i>	any of a genus of deciduous trees or shrubs native to temperate regions of the northern hemisphere that have a fruit consisting of a single nut.
61.	<b>minivan</b>	<i>(noun)</i>	a small multipurpose vehicle with rear or side doors and side panels with windows that is used to transport passengers.
62.	<b>plaid</b>	<i>(adjective)</i>	having a cross-barred multicolored pattern.
63.	<b>tissue</b>	<i>(noun)</i>	an aggregate of cells together with their intercellular substance that form one of the structural materials out of which the body of a plant or an animal is made.
64.	<b>scoundrel</b>	<i>(noun)</i>	a bold selfish person who is equipped with low ethical standards.
65.	<b>amino</b>	<i>(adjective)</i>	relating to or containing the group NH <sub>2</sub> united to a radical other than an acid radical.
66.	<b>menthol</b>	<i>(noun)</i>	an alcohol that occurs naturally in peppermint oil and Japanese mint oil and can be made artificially.
67.	<b>Tabasco</b>	<i>(trademark)</i>	— used for a condiment sauce made from capsicum berries.
68.	<b>obvious</b>	<i>(adjective)</i>	easily perceived by the mind.
69.	<b>pulse</b>	<i>(noun)</i>	a regular wave of distension in the arteries that is a result of blood progressing through an artery at each contraction of the ventricles of the heart.
70.	<b>cottage</b>	<i>(noun)</i>	a small house typically used in the summer.
71.	<b>garland</b>	<i>(noun)</i>	a wreath of leaves or flowers that is worn on the head or used for decoration.
72.	<b>gnaw</b>	<i>(verb)</i>	to bite or chew on with the teeth.
73.	<b>comfort</b>	<i>(noun)</i>	enjoyment in physical or mental well-being.
74.	<b>caroling</b>	<i>(verb)</i>	traveling outside in a group to sing Christmas songs on Christmas Eve.
	<b>OR</b>		<b>carolling</b>



This list includes 225 challenging upper elementary words. If you learn the spellings and meanings of these words, you will be well prepared for your classroom bee. If you would like to be well prepared for a school spelling bee, ask your teacher for the 450-word School Spelling Bee Study List, which includes the words listed here in addition to the words at the One Bee and Three Bee levels of difficulty.

75.	<b>foolishness</b>	<i>(noun)</i>	the state of lacking seriousness : folly.
76.	<b>constellation</b>	<i>(noun)</i>	any of the 88 configurations of stars.
77.	<b>sundering</b>	<i>(verb)</i>	breaking or forcing apart.
78.	<b>junction</b>	<i>(noun)</i>	a seam or joint.
79.	<b>exploits</b>	<i>(verb)</i>	takes undue advantage of.
80.	<b>rabble-rouser</b>	<i>(noun)</i>	a person who stirs up the masses of the people (such as to violence or hatred).
81.	<b>profound</b>	<i>(adjective)</i>	hard to understand or comprehend.
82.	<b>wreath</b>	<i>(noun)</i>	a crown or band of intertwined flowers or leaves worn or given as a mark of honor.
83.	<b>profile</b>	<i>(noun)</i>	a representation of something in outline.
84.	<b>untoward</b>	<i>(adjective)</i>	unfortunate or unlucky.
85.	<b>memorial</b>	<i>(adjective)</i>	commemorative.
86.	<b>industrial</b>	<i>(adjective)</i>	of or belonging to a department of a craft, business or manufacture.
87.	<b>barrier</b>	<i>(noun)</i>	an object or objects that serve to separate or keep items apart.
88.	<b>gratingly</b>	<i>(adverb)</i>	with an irritating or harsh effect or sound.
89.	<b>brayed</b>	<i>(verb)</i>	made a loud harsh cry — used of a donkey.
90.	<b>Harlem</b>	<i>(geographical entry)</i>	section of New York City in northern Manhattan that was a center of African American culture in the 1920s.
91.	<b>messenger</b>	<i>(noun)</i>	someone who delivers a written or oral communication : a courier.
92.	<b>beacons</b>	<i>(plural noun)</i>	fires placed on a hill or tower that are used to communicate signals.
93.	<b>generation</b>	<i>(noun)</i>	development, rise.
94.	<b>coverage</b>	<i>(noun)</i>	the amount of reporting given to a news event.
95.	<b>deters</b>	<i>(verb)</i>	turns aside or discourages from acting.
96.	<b>Nepal</b>	<i>(geographical entry)</i>	landlocked country in Asia in the Himalayas on the northeast border of India.
97.	<b>disinfectant</b>	<i>(noun)</i>	a chemical used to destroy vegetative forms of damaging microorganisms.
98.	<b>campaign</b>	<i>(noun)</i>	a period of continuous and often competitive activity in any seasonal occupation or industry.
99.	<b>starvation</b>	<i>(noun)</i>	the instance of suffering from extreme hunger.
100.	<b>gamma</b>	<i>(noun)</i>	the third letter of the Greek alphabet.
101.	<b>spleen</b>	<i>(noun)</i>	an abdominal organ that plays a role in the maintenance of blood volume, the production of blood cells, the recovery of material from worn-out blood cells and the production of antibodies.



This list includes 225 challenging upper elementary words. If you learn the spellings and meanings of these words, you will be well prepared for your classroom bee. If you would like to be well prepared for a school spelling bee, ask your teacher for the 450-word School Spelling Bee Study List, which includes the words listed here in addition to the words at the One Bee and Three Bee levels of difficulty.

---

102.	<b>utensils</b>	<i>(plural noun)</i>	tools or instruments used in a kitchen.
103.	<b>depot</b>	<i>(noun)</i>	a bus station.
104.	<b>incident</b>	<i>(noun)</i>	an uncommon happening.
105.	<b>brambles</b>	<i>(plural noun)</i>	prickly and rough vines or shrubs.
106.	<b>trifecta</b>	<i>(noun)</i>	a bet in which the bettor selects the first, second and third finishers in a contest or race in the correct order.
107.	<b>shingle</b>	<i>(noun)</i>	coarse and rounded detritus found on the seashore and which is different from regular gravel due to its large size.
108.	<b>mason</b>	<i>(noun)</i>	a skilled artisan who builds using stone, brick or concrete.
109.	<b>avoid</b>	<i>(verb)</i>	to stay clear of : to keep away from.
110.	<b>static</b>	<i>(adjective)</i>	stable, stagnant.
111.	<b>samples</b>	<i>(plural noun)</i>	portions to represent a whole.
112.	<b>modern</b>	<i>(adjective)</i>	contemporary : relating to the present time.
113.	<b>chalk</b>	<i>(noun)</i>	the prepared form of a soft limestone, earthy in texture and white, gray or buff in color used for marking or drawing.
114.	<b>concentrate</b>	<i>(verb)</i>	to bring all one's powers, faculties or activities to bear.
115.	<b>proud</b>	<i>(adjective)</i>	elated : highly pleased.
116.	<b>expiration</b>	<i>(noun)</i>	termination, close, extinction.
117.	<b>batteries</b>	<i>(plural noun)</i>	level of enthusiasm or energy.
118.	<b>centuries</b>	<i>(plural noun)</i>	time spans of 100 years.
119.	<b>differed</b>	<i>(verb)</i>	varied : changed from time to time.
120.	<b>fearsome</b>	<i>(adjective)</i>	arousing from fright or terror.
121.	<b>fiercest</b>	<i>(adjective)</i>	characterized by the most furious unrestrained vehemence or zeal.
122.	<b>residence</b>	<i>(noun)</i>	the place where one lives or has their home.
123.	<b>abated</b>	<i>(verb)</i>	lessened : decreased in force.
124.	<b>scattering</b>	<i>(verb)</i>	spreading widely and randomly by throwing about.
125.	<b>toppled</b>	<i>(verb)</i>	tumbled down : fell from top-heaviness.
126.	<b>vane</b>	<i>(noun)</i>	a movable device used to show the direction of the wind.
127.	<b>vortices</b>	<i>(plural noun)</i>	tornadoes : quickly moving and spiraling columns of air.
128.	<b>turbulent</b>	<i>(adjective)</i>	tempestuous or stormy.
129.	<b>obstacles</b>	<i>(plural noun)</i>	things that hinder progress or stand in the way.



This list includes 225 challenging upper elementary words. If you learn the spellings and meanings of these words, you will be well prepared for your classroom bee. If you would like to be well prepared for a school spelling bee, ask your teacher for the 450-word School Spelling Bee Study List, which includes the words listed here in addition to the words at the One Bee and Three Bee levels of difficulty.

---

130.	<b>continental</b>	<i>(adjective)</i>	being the portion of the United States located on the continent of North America.
131.	<b>deportment</b>	<i>(noun)</i>	behavior or conduct.
132.	<b>exhibits</b>	<i>(plural noun)</i>	exhibitions or displays.
133.	<b>agricultural</b>	<i>(adjective)</i>	relating to or used in the science or art of working the soil, harvesting crops and raising livestock.
134.	<b>momentous</b>	<i>(adjective)</i>	weighty : of great importance.
135.	<b>disturbance</b>	<i>(noun)</i>	an interruption of quiet or peace.
136.	<b>wily</b>	<i>(adjective)</i>	crafty : full of deceitful cunning.
137.	<b>rookie</b>	<i>(noun)</i>	a member who is new to an athletic team.
138.	<b>transparencies</b>	<i>(plural noun)</i>	matters for displaying which are made on glass, thin cloth, paper or film and which are viewed by the help of light shining through the matter.
139.	<b>hazmat</b>	<i>(noun)</i>	a substance that is shipped and which would be dangerous to life or the environment if released without proper precaution.
140.	<b>Antarctic</b>	<i>(adjective)</i>	relating to the South Pole or the region surrounding it.
141.	<b>perfume</b>	<i>(noun)</i>	a fluid containing essences of flowers or synthetics which is used for its scent.
142.	<b>plaiting</b>	<i>(noun)</i>	braiding : the interweaving of three or more strands of hair.
143.	<b>writers</b>	<i>(plural noun)</i>	people who practice the act of literary or journalistic composition in words as a job.
144.	<b>series</b>	<i>(noun)</i>	a group of three or more things or events succeeding in order and having a relationship to each other.
145.	<b>audience</b>	<i>(noun)</i>	those present at a stage or film production or viewing of a televised program.
146.	<b>insubstantial</b>	<i>(adjective)</i>	imaginary : lacking substance.
147.	<b>staggered</b>	<i>(verb)</i>	swayed or tottered when standing or walking.
148.	<b>assistance</b>	<i>(noun)</i>	aid given to the needy, usually in monetary form.
149.	<b>sanitized</b>	<i>(verb)</i>	made hygienic through sterilization or cleaning.
150.	<b>diminished</b>	<i>(verb)</i>	decreased.
151.	<b>organist</b>	<i>(noun)</i>	someone who plays any of several large musical instruments which produce sustained tones by means of a keyboard.
152.	<b>operator</b>	<i>(noun)</i>	someone in charge of a telephone switchboard.





This list includes 225 challenging upper elementary words. If you learn the spellings and meanings of these words, you will be well prepared for your classroom bee. If you would like to be well prepared for a school spelling bee, ask your teacher for the 450-word School Spelling Bee Study List, which includes the words listed here in addition to the words at the One Bee and Three Bee levels of difficulty.

153.	<b>Louisiana</b>	<i>(geographical entry)</i>	a state in the southern United States.
154.	<b>perpetual</b>	<i>(adjective)</i>	constant or indefinitely.
155.	<b>blustery</b>	<i>(adjective)</i>	stormy.
156.	<b>molars</b>	<i>(plural noun)</i>	teeth which are adapted for grinding due to having rounded or flattened surfaces.
157.	<b>arrange</b>	<i>(verb)</i>	to put in the correct or desired order.
158.	<b>dissolved</b>	<i>(verb)</i>	passed into an act by which a solid, liquid or gaseous substance is mixed typically with a liquid.
159.	<b>extremely</b>	<i>(adverb)</i>	in an intense manner.
160.	<b>plastic</b>	<i>(noun)</i>	any of a large group of materials of high molecular weight that usually contain a synthetic or semisynthetic organic substance, that are molded into objects of all sizes and shapes.
161.	<b>multiplication</b>	<i>(noun)</i>	a mathematical operation in which the first number is repeated as many times as there are units in the second number.
162.	<b>middle</b>	<i>(noun)</i>	the part halfway between two points.
163.	<b>reasonable</b>	<i>(adjective)</i>	not absurd or ridiculous : being in agreement with right thinking.
164.	<b>closet</b>	<i>(noun)</i>	a recess or cabinet used to hold china, clothing or other utensils.
165.	<b>investigation</b>	<i>(noun)</i>	study or research.
166.	<b>accident</b>	<i>(noun)</i>	an event that occurs by chance.
167.	<b>discussion</b>	<i>(noun)</i>	a consideration of a question typically occurring in informal debate.
168.	<b>confused</b>	<i>(verb)</i>	confounded : failed to distinguish between two or more parties.
169.	<b>microwave</b>	<i>(verb)</i>	to cook or heat food in an oven that prepares the food with short electromagnetic waves.
170.	<b>gabled</b>	<i>(adjective)</i>	furnished with the vertical triangular portion of the end of a building.
171.	<b>settle</b>	<i>(verb)</i>	seat : to cause to sit.
172.	<b>somber</b> <b>OR</b> <b>sombre</b>	<i>(adjective)</i>	dejected in appearance or mood : gloomy.
173.	<b>tampered</b>	<i>(verb)</i>	interfered with so as to change for the worse.
174.	<b>loyal</b>	<i>(adjective)</i>	devoted to a person : faithful.
175.	<b>remarkable</b>	<i>(adjective)</i>	worthy of being noticed.
176.	<b>joists</b>	<i>(plural noun)</i>	the small timbers or iron or steel beams that are arranged in a parallel fashion stretching from wall to wall in a building.
177.	<b>scrambling</b>	<i>(verb)</i>	moving with urgency.



This list includes 225 challenging upper elementary words. If you learn the spellings and meanings of these words, you will be well prepared for your classroom bee. If you would like to be well prepared for a school spelling bee, ask your teacher for the 450-word School Spelling Bee Study List, which includes the words listed here in addition to the words at the One Bee and Three Bee levels of difficulty.

---

178.	<b>inspector</b>	<i>(noun)</i>	a police officer ranking below a superintendent.
179.	<b>distressed</b>	<i>(adjective)</i>	overcome with pain or grief.
180.	<b>smudge</b>	<i>(noun)</i>	a splotch or smear.
181.	<b>throttle</b>	<i>(verb)</i>	to choke : to stop the breathing of by any means.
182.	<b>perfection</b>	<i>(noun)</i>	flawlessness : freedom from defect.
183.	<b>capable</b>	<i>(adjective)</i>	marked by general efficiency and by adequate resourcefulness, skill and reliability.
184.	<b>gadgets</b>	<i>(plural noun)</i>	typically small devices that are often considered novelties and that are found especially on pieces of machinery.
185.	<b>channel</b>	<i>(noun)</i>	a band of frequencies able to accommodate a single television or radio communication.
186.	<b>chisel</b>	<i>(noun)</i>	a tool consisting of a metal bar with a sharpened edge at one end used for working on the surface of materials by chipping or carving.
187.	<b>chimney</b>	<i>(noun)</i>	a vertical structure incorporated into a building that carries off smoke, fumes or gases.
188.	<b>minnow</b>	<i>(noun)</i>	a very small fish that can grow up to three inches long and that is common in streams.
189.	<b>domain</b>	<i>(noun)</i>	a large subdivision of the Internet denoted by an abbreviation consisting of computers or sites with a common purpose or a common location.
190.	<b>shuffle</b>	<i>(verb)</i>	to slide the feet back and forth without lifting them.
191.	<b>carpenter</b>	<i>(noun)</i>	a person whose career is to build or repair with wood.
192.	<b>pruners</b>	<i>(plural noun)</i>	a tool which is used to remove dead branches or leaves from vegetation.
193.	<b>parcel</b>	<i>(noun)</i>	a package.
194.	<b>squawk</b>	<i>(verb)</i>	to emit a loud harsh cry.
195.	<b>Sheetrock</b>	<i>(trademark)</i>	– used to describe a plasterboard formed of gypsum between two surfaces of hard paper.
196.	<b>trowel</b>	<i>(noun)</i>	a hand tool with a blade that is used to apply, spread, shape and smooth any loose material.
197.	<b>nervous</b>	<i>(adjective)</i>	originating in or affected by the nerves.
198.	<b>spirit</b>	<i>(noun)</i>	any supernatural being such as an apparition or elf.
199.	<b>equator</b>	<i>(noun)</i>	the circle of the celestial sphere whose plane runs perpendicular to the axis of Earth.
200.	<b>evidence</b>	<i>(noun)</i>	something submitted legally to a tribunal as a means of realizing the truth of any alleged matter of fact under investigation before it.
201.	<b>solar</b>	<i>(adjective)</i>	related to the sun and its effects on Earth and other planets.
202.	<b>explore</b>	<i>(verb)</i>	to search or look into.
203.	<b>distance</b>	<i>(noun)</i>	the amount of separation between two points.
204.	<b>fault</b>	<i>(noun)</i>	responsibility for failure.



This list includes 225 challenging upper elementary words. If you learn the spellings and meanings of these words, you will be well prepared for your classroom bee. If you would like to be well prepared for a school spelling bee, ask your teacher for the 450-word School Spelling Bee Study List, which includes the words listed here in addition to the words at the One Bee and Three Bee levels of difficulty.

---

205.	<b>colonists</b>	<i>(plural noun)</i>	someone who settles in a new country.
206.	<b>prudence</b>	<i>(noun)</i>	wisdom shown in the exercise of self-control and reason.
207.	<b>assembly</b>	<i>(noun)</i>	a meeting scheduled for an entire student body and faculty of a school held for recreational, administrative or educational reasons.
208.	<b>sheriff</b>	<i>(noun)</i>	an important county officer in the United States who is typically elected by the people.
209.	<b>tarry</b>	<i>(verb)</i>	to dawdle or procrastinate.
210.	<b>entity</b>	<i>(noun)</i>	something that has an objective or physical reality and distinct character.
211.	<b>archives</b>	<i>(plural noun)</i>	repositories for documents of historical value.
212.	<b>commotion</b>	<i>(noun)</i>	noisy confusion.
213.	<b>vacancy</b>	<i>(noun)</i>	an empty office or post.
214.	<b>beatboxing</b>	<i>(noun)</i>	a musical style comprised of solo vocal imitation of percussion.
215.	<b>mutate</b>	<i>(verb)</i>	to undergo a significant alteration.
216.	<b>commonplace</b>	<i>(noun)</i>	a comment or remark lacking in originality.
217.	<b>gingerbread</b>	<i>(noun)</i>	a cake made with molasses and ginger which is then cut in fancy shapes and frosted.
218.	<b>dispute</b>	<i>(verb)</i>	to wrangle : to argue with persistence.
219.	<b>episode</b>	<i>(noun)</i>	a part of a television or radio serial presented in one period.
220.	<b>confection</b>	<i>(noun)</i>	a delicacy.
221.	<b>autographs</b>	<i>(plural noun)</i>	handwritten signatures.
222.	<b>petite</b>	<i>(adjective)</i>	little or small.
223.	<b>station</b>	<i>(noun)</i>	a post or position of duty.
224.	<b>withers</b>	<i>(plural noun)</i>	the ridge on a horse that falls between the shoulder bones.
225.	<b>hunky-dory</b>	<i>(adjective)</i>	fine.

## First Read: An American Plague: The True and Terrifying Story of the Yellow Fever Epidemic of 1793

### Introduction

Thought to have originated in Africa, yellow fever spread to the Americas in the 17th and 18th centuries on trading ships. In 1793, the fever struck inhabitants of seaside neighborhoods in Philadelphia with gruesome and heartbreaking results. Author Jim Murphy takes an unflinching look at this scourge, including the doctors who labored to save the afflicted and discover the causes and cures; the politicians who sought to govern the panicked city; and, last but not least, the victims of the mysterious plague.

## First Read: An American Plague: The True and Terrifying Story of the Yellow Fever Epidemic of 1793

### Read

#### Chapter 2: All Was Not Right

*"8 or 10 persons buried out of Water St. between Race and Arch Sts.; many sick in our neighborhood, and in ye City generally."*

—Elizabeth Drinker, August 21, 1793

**Monday, August 19.** It was clear that thirty-three-year-old Catherine LeMaigre was dying, and dying horribly and painfully. Between agonized gasps and groans she muttered that her stomach felt as if it were burning up. Every ten minutes or so her moaning would stop abruptly and she would vomit a foul black bile.

Her husband, Peter, called in two neighborhood doctors to save his young wife. One was Dr. Hugh Hodge, whose own daughter had been carried off by the same fever just days before. Hodge had been an army surgeon during the Revolutionary War, and while stubborn and crusty in his ways, he was a respected physician. The other was Dr. John Foulke, who was a fellow of Philadelphia's **prestigious** College of Physicians and a member of the Pennsylvania Hospital board.

Hodge and Foulke did what they could for their patient. They gave her cool drinks of barley water and apple water to reduce the fever, and red wine with laudanum to help her rest. Her forehead, face, and arms were washed regularly with damp cloths.

Nothing worked, and Catherine LeMaigre's condition worsened. Her pulse slowed, her eyes grew bloodshot, her skin took on the pale-yellow color that gave the disease its name. More black vomit came spewing forth. In desperation, the two physicians sent for their esteemed colleague Dr. Benjamin Rush.

Rush was forty-seven years old and so highly respected that he was often called in by colleagues when they were baffled by a case. His medical training had been extensive, consisting of five years of apprenticeship with the pre-eminent doctor in the United States, John Redman. After this he had gone to Europe to study under the most skilled surgeons and doctors in the western world.

He was passionate and outspoken in his beliefs, no matter what the subject. He opposed slavery, felt that alcohol and tobacco should be avoided, urged that the corporal punishment of children be stopped, and thought that the best way to keep a democracy strong was by having universal education. Along with his beliefs went an unimaginable amount of energy. Despite a persistent cough and weak lungs that often left him gasping for air, he worked from early in the morning until late at night—writing letters and papers,

visiting patients, rereading the latest medical literature, or attending to any one of a number of institutions and charities he belonged to.

Hodge and Foulke told Rush about Catherine LeMaigre's **symptoms** and what they had done to help her. There was nothing much else they could do, Rush said, after the three men left her bedchamber to discuss the case. Rush then noted that in recent days he had seen "an unusual number of bilious fevers, accompanied with symptoms of uncommon malignity." In a grave voice, his seriousness reflected in his intense blue eyes, he added that "all was not right in our city."

The two other doctors agreed, and then all three recounted the symptoms they had seen. The sickness began with chills, headache, and a painful aching in the back, arms, and legs. A high fever developed, accompanied by constipation. This stage lasted around three days, and then the fever suddenly broke and the patient seemed to recover.

But only for a few short hours.

The next stage saw the fever shoot up again. The skin and eyeballs turned yellow, as red blood cells were destroyed, causing the bile pigment bilirubin to accumulate in the body; nose, gums, and intestines began bleeding; and the patient vomited stale, black blood. Finally, the pulse grew weak, the tongue turned a dry brown, and the victim became depressed, confused, and delirious.

Rush noted another sign as well: tiny reddish eruptions on the skin. "They appeared chiefly on the arms, but they sometimes extended to the breast." Physicians called these sores petechiae, which is Latin for skin spots, and Rush observed that they "resembled moscheto bites."

Hodge then pointed out that the deaths, including his daughter's, had all happened on or near Water Street. Foulke told of other deaths along the street and said he knew the origin of the fevers: the repulsive smell in the air caused by the rotting coffee on Ball's Wharf.

The idea that illness was caused by **microscopic organisms**, such as **bacteria** and **viruses**, was not known at the time. Instead, doctors based their medical thinking on the 2,500-year-old Greek humoral theory. This concept stated that good health resulted when body fluids, called humors, were in balance. The humors were phlegm, choler, bile, and blood.

Disease arose from an imbalance of these humors—too much of one, not enough of another. Any number of things could cause this condition, such as poor diet, excess drinking, poison, or a dog bite, to name just a few. Even bad news could unsettle the humors and cause illness. So it made sense to Rush, Hodge, and Foulke that the putrid-smelling air could upset people enough to cause an outbreak of violent, fatal fevers.

Rush, however, sensed something else. The symptoms he was seeing reminded him of a sickness that had swept through Philadelphia back in 1762, when he was sixteen years old and studying under Dr. Redman. Rush was never shy with his opinions, and standing there in the LeMaigres' parlor, he boldly announced

that the disease they now confronted was the dreaded yellow fever.

---

Excerpted from *An American Plague: The True and Terrifying Story of the Yellow Fever Epidemic of 1793* by Jim Murphy, published by Clarion Books.

## Annotations

---

First Read: An American Plague: The True and Terrifying Story of the Yellow Fever Epidemic of 1793

---

Think

---

1

2

3

4

5

Question 1

Use details from the text to describe three symptoms that indicated a patient had yellow fever.

**(In the space provided, answer the above question.)**



## Central or Main Idea - An American Plague: The True and Terrifying Story of the Yellow Fever Epidemic of 1793

### Define

The central or main idea of a text is the most important point that an author makes about a topic. In other words, it answers the question *What's it all about?* In order to find the answer, you must look for supporting ideas and details that the author supplies about the topic. Ask yourself, What do these supporting ideas or details have in common? What ideas do they express, explain, or describe? The answer to this question will lead you to the central or main idea.

PA-ELA:  [CC.1.2.6.A](#)

## Central or Main Idea - An American Plague: The True and Terrifying Story of the Yellow Fever Epidemic of 1793

### Model

#### Identification and Application:

- Look to see if the central or main idea is explicitly stated. Authors may or may not explicitly state the central or main idea of their texts.
- As the author develops a central or main idea, he or she will include details and ideas that support it. When it is not explicitly stated, you can determine the central idea by looking at particular details and asking yourself these questions:
  - What main idea do the details in one or more paragraphs explain or describe?
  - What bigger idea do all the paragraphs support?
- Use these details to identify the central idea of a text and write a summary.
  - A summary is a short paragraph that describes the most important ideas in a text.
  - Write the summary in your own words.
  - Begin the summary with a topic sentence and include supporting details.
  - Do not include personal opinions or judgments in the summary.

#### Model:

Like all informational texts, *An American Plague: The True and Terrifying Story of the Yellow Fever Epidemic of 1793* focuses on a **central or main idea** that is supported through details in the text. Often the main idea of an informational text is stated in the opening paragraphs. However, because author Jim Murphy writes about a mystery, he chooses to withhold the central or main idea of his text until the end. This choice allows readers to experience the mystery along with Drs. Hodge, Foulke, and Rush.

Consequently, readers first meet Catherine LeMaigre as her doctors meet her: as a collection of baffling symptoms that the doctors try to treat. The mystery deepens in paragraph 5:

**Nothing worked**, and Catherine LeMaigre's condition worsened. **Her pulse slowed, her eyes grew bloodshot, her skin took on the pale-yellow color** that gave the disease its name. **More black vomit came spewing forth**. In desperation, the two physicians sent for their esteemed colleague Dr. Benjamin Rush.

In searching for the central or main idea of this passage, readers might ask themselves what all these details have in common. What do they describe or explain? Well, LeMaigre is sick, and she presents a series of puzzling symptoms: "Her pulse slowed, her eyes grew bloodshot, her skin took on the pale-yellow color ....more black vomit came spewing forth." Furthermore, her doctors are unable to diagnose or treat her: "Nothing worked." Based on these descriptive details, readers can infer that the central idea of this passage is that doctors are concerned by their inability to diagnose and treat a very ill

patient who displays a series of mysterious symptoms.

By paragraph 8, readers soon learn that LeMaigre is not a lone patient:

Hodge and Foulke told Rush about Catherine LeMaigre's symptoms and what they had done to help her. There was nothing much else they could do, Rush said, after the three men left her bedchamber to discuss the case. Rush then noted that **in recent days** he had seen **"an unusual number** of bilious fevers, accompanied with symptoms of uncommon malignity." In a grave voice, his seriousness reflected in his intense blue eyes, he added that **"all was not right in our city."**


Dr. Rush notes that there have been "an unusual number" of fever patients with similarly gruesome symptoms "in recent days," and recognizes that the problem potentially affects not only those patients and their families, but the entire city of Philadelphia. The doctors, like the readers, are gathering information—facts and details—looking for common threads that will allow them to diagnose the patient and find a solution to a city-wide problem. From the details of Dr. Rush's explanation, readers can infer the central idea of this passage: the mysterious illness is not confined to Catherine LeMaigre; others in the city of Philadelphia have also shown similar symptoms.

As the three doctors "recounted the symptoms they had seen," Drs. Hodge and Foulke identify another similarity, the location of the victims: "on or near Water Street." This detail, along with disease's unique symptoms, and the number of people in the city who have fallen ill, leads Dr. Rush to recall a similar illness he had experienced thirty years earlier.

This detail, together with the details from paragraphs 5 and 8, help the doctors uncover the identity of the disease, and help the reader understand the central idea of the text: an epidemic of the disease yellow fever is spreading throughout the city of Philadelphia and killing its citizens.

Readers can use the central idea and supporting details to summarize the selection. When readers summarize, they use their own words to briefly retell what the text is about, including the most important ideas without adding personal opinions or making judgments. Summarizing helps readers to understand and remember what they have read.

Here is an example of a summary a reader could write for the text they have just read: Doctors Hodge, Foulke, and Rush are concerned by mysterious and deadly disease that is spreading through the city of Philadelphia. As the three doctors study the symptoms of the disease, the growing number of victims, and the common link among them, Dr. Rush realizes that this disease is similar to one he has seen before, the dreaded yellow fever.

PA-ELA:  [CC.1.2.6.A](#)

## Central or Main Idea - An American Plague: The True and Terrifying Story of the Yellow Fever Epidemic of 1793

### Your Turn

Read this section from Chapter 2 of *An American Plague: The True and Terrifying Story of the Yellow Fever Epidemic of 1793* to identify its central idea, and then answer the follow-up questions.

The idea that illness was caused by microscopic organisms, such as bacteria and viruses, was not known at the time. Instead, doctors based their medical thinking on the 2,500-year-old Greek humoral theory. This concept stated that good health resulted when body fluids, called humors, were in balance. The humors were phlegm, choler, bile, and blood.

Disease arose from an imbalance of these humors—too much of one, not enough of another. Any number of things could cause this condition, such as poor diet, excess drinking, poison, or a dog bite, to name just a few. Even bad news could unsettle the humors and cause illness. So it made sense to Rush, Hodge, and Foulke that the putrid-smelling air could upset people enough to cause an outbreak of violent, fatal fevers.

PA-ELA:  [CC.1.2.6.A](#)

#### Part A

Which of the following best states the central idea of this section?

- A. People in 1793 were not as knowledgeable about medicine as they are today.
- B. Doctors believed that disease could be caused by just about anything.
- C. Because they believed in humoral theory, doctors thought the mysterious disease was caused by the air.
- D. In 1793, keeping body fluids balanced was an important part of staying healthy.

#### Part B

Which two details best support the central idea you identified in Part A?

- A. "doctors based their medical thinking on the 2,500-year-old Greek humoral theory" and "The humors were phlegm, choler, bile, and blood"
- B. "doctors based their medical thinking on the 2,500-year-old Greek humoral theory" and "the putrid-smelling air could upset people enough to cause an outbreak of violent, fatal fevers"
- C. "The idea that illness was caused by microscopic organisms, such as bacteria and viruses, was not known at the time" and "good health resulted when body fluids, called humors, were in balance"
- D. "good health resulted when body fluids, called humors, were in balance" and "Disease arose from an imbalance of these humors—too much of one, not enough of another"

## Vocabulary

### Instructions for Student

Complete the chart by dragging and dropping the correct meaning into the third column to match the term in each row and then write a sample sentence in the fourth column.

Definition Options ( 6 of 6 )

- ☐ highly honored or respected
- ☐ being so small that visibility is possible only through a microscope
- ☐ small, single-celled organisms that live in almost all environments, including in and on all plants and animals, and which may be either beneficial or disease-causing
- ☐ a change in the body that suggest the presence of sickness or disease
- ☐ very small living things that reproduce only within living cells and cause the spread of disease from one person or animal to another
- ☐ any living thing

Term	Form	Definition	Sample Sentence
bacteria	noun		<input type="text"/>
microscopic	adjective		<input type="text"/>
organism	noun		<input type="text"/>
prestigious	adjective		<input type="text"/>
symptom	noun		<input type="text"/>
virus	noun		<input type="text"/>

**(Students may draw a line from the vocabulary word to the correct definition. Sample sentences can be written on a separate piece of paper.)**

## Prompt

---

Notice that the text says that Dr. Rush “worked from early in the morning until late at night” on a number of tasks, including “writing letters and papers.” Physicians often write papers about health-related topics for publication in medical journals. Imagine that you are Dr. Hodge, Dr. Foulke, or Dr. Rush. Summarize for city politicians the health situation in Philadelphia in 1793. What might you say? Write an objective summary introducing the central or main idea and the details that support it, such as facts, definitions, and examples. Be sure not to include your feelings or judgments. Support your writing with textual evidence.

If you have access to a computer and are working on USATestPrep online, you do NOT have to complete this worksheet.

## Informational Text: Rocks

Name:  
Teacher:

Class:  
Date:

**Directions:** Read the passage carefully, then answer the questions.

### ROCKS

The core of the earth is composed of a 3D-mile thick bed of rock. Whether on land or in the sea, the substratum is solid rock. Rocks surround us both above the surface and below.

Thousands of years ago rocks were used to form primitive hunting implements, to club animals, to pound animal skins for clothing, and to form a barrier between the campfires and the people who sat warming themselves or cooking. Today, rocks also play a major role in construction, garden ornaments, and jewelry.

Inside some rocks are veins of colored materials called minerals. The latter have unique characteristics such as color, luster, hardness, and value. Some of the most valuable minerals today are diamonds, gold, and silver.

Diamonds, when not perfect enough for jewelry, are used in industry for drill bits and in glass-cutting tools. Most diamonds today are found in mines in South Africa.

The biggest gold mines are also located in South Africa. Workers are under heavy guard and are searched before they leave work sites, so that they do not steal any of this precious mineral. Different qualities and weights of gold, measured in karats, are used for jewelry, dental fillings, and even in very thinly pounded foil used in wrapping expensive chocolates. When gold nuggets were found in a stream in California in 1849, people rushed there from all over the world.

Mexico boasts the greatest production of silver in the world. When silver is found, it is much darker than the color we usually see. The latter is achieved by considerable polishing and buffing. Silver is used many ways: in jewelry, to make eating utensils, as decorative finish, and in fine crystal and vases.

Not all rocks are ugly gray shapeless masses. Many contain valuable minerals, without which the world as we know it would not exist today.

1. The word *barrier* is closest in meaning to  
(A) connection (C) smoke ring  
(B) separation (D) defense mechanism
2. The word *stream* is closest in meaning to  
(A) mountain (C) mine  
(B) lake bed (D) small river
3. The word *boasts* is closest in meaning to  
(A) speaks disparagingly of (C) deplores  
(B) speaks proudly of (D) seeks



If you have access to a computer and are working on USATestPrep online, you do NOT have to complete this worksheet.

4. All of the following were mentioned as modern uses of rocks EXCEPT  
(A) hunting implements (C) jewelry  
(B) garden ornaments (D) construction
5. The most productive gold and diamond mines are located in  
(A) Mexico (C) California  
(B) China (D) South Africa
6. All of the following were mentioned as characteristics of these minerals EXCEPT  
(A) facets (C) weight  
(B) hardness (D) luster
7. The quality and weight of diamonds are measured in  
(A) ounces (C) facets  
(B) luster (D) karats
8. What is the writer's main point?  
(A) Rocks serve many purposes and come in different sizes and shapes.  
(B) Diamonds, gold, and silver are the only rocks worth mentioning.  
(C) Considerable polishing and buffing will make any rock beautiful and valuable.  
(D) The most valuable rocks are useful only as jewelry.
9. The innermost part of the earth is comprised of  
(A) gold (C) diamonds  
(B) water (D) rocks





## Southeast Asia

### Lesson 1: Physical Geography of Southeast Asia

#### ESSENTIAL QUESTION

*How does geography influence the way people live?*

#### Terms to Know

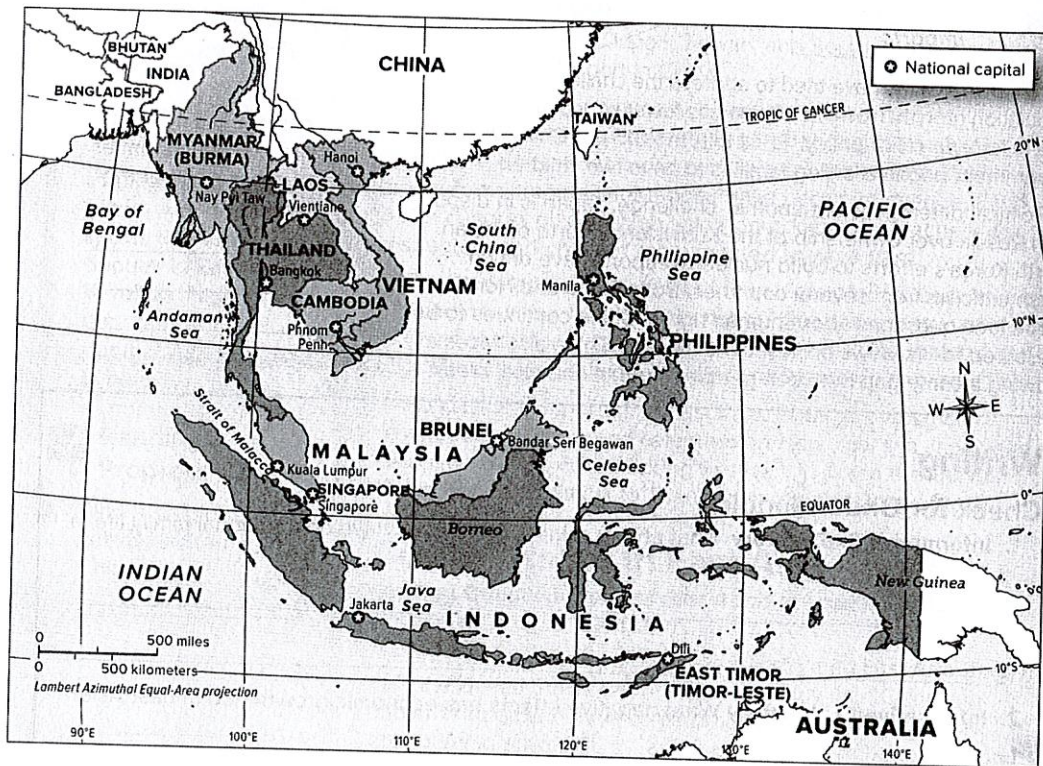
**insular** an area consisting of islands

**flora** plant life

**fauna** animal life

**endemic** found only in one place or region

#### Where in the World: Southeast Asia



**Southeast Asia****Lesson 1: Physical Geography of Southeast Asia, *continued*****Landforms and Resources**

**Guiding Question** *How are the landforms of Southeast Asia's mainland different from the landforms of its islands?*

Southeast Asia can be divided into two parts. One is the mainland area. The other is an **insular** area, an area consisting of islands. There are 11 countries in Southeast Asia. Six of them are located at least partly on the mainland. Five countries are entirely on islands.

The mainland area sits at the southeastern corner of the Asian continent. It is mostly formed by two peninsulas. The larger is known as the Indochinese peninsula, or simply Indochina. The Malay Peninsula extends south from the Indochinese peninsula. The mainland is rugged and mountainous. The mainland countries are Myanmar (also known as Burma), Laos, Thailand, Vietnam, Cambodia, and Malaysia. Part of Malaysia is located on the island of Borneo.

The insular area is located where the Indian Ocean meets the Pacific Ocean. Thousands of islands stretch across miles of tropical waters. Many of the mountains on Southeast Asia's islands are volcanoes. The islands lie along the Ring of Fire.

The Malay Archipelago contains more than 24,000 islands. Singapore lies off the tip of the Malay Peninsula. Indonesia, the largest country in Southeast Asia, is located on more than 17,000 islands. Indonesia, East Timor, Brunei, and the Philippines are all part of the Malay Archipelago.

Four tectonic plates meet in Southeast Asia. As a result, many earthquakes and volcanic eruptions occur in this area. Volcanic eruptions can trigger deadly tsunamis. In 2004, a strong undersea earthquake produced huge waves that slammed into coastal areas of Southeast and South Asia. More than 230,000 deaths occurred.

Southeast Asia has many mineral resources. Tin, copper, lead, zinc, gold, and gemstones are all mined there. Indonesia and Malaysia have rich oil and natural gas reserves.

**Bodies of Water**

**Guiding Question** *Why does Southeast Asia have so many different seas?*

Bodies of water are important to Southeast Asia's geography and identity. The region covers about 5 million square miles (13 million sq km), but only a third of the area is land. Some of the world's busiest shipping lanes pass through Southeast Asia's seas.

 **Marking the Text**

1. Highlight the definition of *insular* in the text.

 **Activating Prior Knowledge**

2. Define the word *peninsula*.

\_\_\_\_\_

\_\_\_\_\_

 **Marking the Text**


3. Underline the six mainland countries of Southeast Asia. Double underline the five countries located entirely on islands.

 **Defining**

4. What is a tsunami?

\_\_\_\_\_

\_\_\_\_\_

 **Reading Progress Check**

5. What effect has the Ring of Fire had on the formation of the region?

\_\_\_\_\_


\_\_\_\_\_

**Southeast Asia**


**Lesson 1: Physical Geography of Southeast Asia, *continued***

 **Marking the Text**


6. Circle the names of oceans in the region. Draw a box around the names of the seas.

 **Activating Prior Knowledge**

7. Why are river valleys productive farming areas?  
 \_\_\_\_\_  
 \_\_\_\_\_

 **Reading Progress Check**

8. Why do you think Southeast Asia's longest rivers are found on the mainland and not on islands?  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

 **Determining Cause and Effect**

9. List three reasons why the vegetation of Southeast Asia is so rich.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

The Malay Peninsula and Indonesia's Sunda Isles are the boundary between two oceans. The Indian Ocean is in the southwestern area of the region. The Pacific Ocean is in the northeastern area. The two largest seas in the region are the South China Sea and the Philippine Sea. Both seas are part of the Pacific Ocean. The Andaman Sea is part of the Indian Ocean. Some of the busiest shipping lanes in the world pass through Southeast Asia's seas and their waterways.

Southeast Asia's longest and most important rivers are on the mainland. Most rain flows into one of five major rivers: the Irrawaddy, Salween, Chao Phraya, Mekong, and Red. Each river generally flows from the mountainous highlands in the north to the lowlands in the south. Then they empty into the sea.

The Irrawaddy River flows almost straight south through Myanmar's center. It is central to transportation. The river's fertile delta is important for farming. It drains into the Andaman Sea.

The Mekong River is Southeast Asia's longest river. It flows for about 2,700 miles (4,345 km) through or near Myanmar, Thailand, Laos, Cambodia, and Vietnam. Its drainage basin is twice the size of California. The river's enormous delta is one of the world's most productive agricultural regions.

**Climate, Vegetation, and Wildlife**

**Guiding Question** *In what ways does Southeast Asia's location shape its climate?*

Climates in Southeast Asia are generally hot and humid. Much of the region receives more than 60 inches (152 cm) of rain each year. These weather conditions and the variety of habitats in the region mean that there is a large quantity of plant and animal life.

Latitude and air currents are important factors in the region's climates. Most of the region lies within the Tropics. This is the zone that receives the hottest, most direct rays of the sun. Between November to March, monsoon winds blow across the region from the northeast to the southwest. These winds bring cooler weather to most of the mainland but heavy rains to the islands. From May to September, the monsoon winds switch directions. During these months, the mainland gets heavy rains. The islands have cooler, drier weather.

The waters surrounding Southeast Asia help moderate air temperatures. That means that the temperatures do not vary much. Elevation also affects weather conditions. Highland areas are generally cooler than the lowland areas.

**Southeast Asia**

**Lesson 1: Physical Geography of Southeast Asia, *continued***

Southeast Asia has four climate zones, which are shown in the table below.

tropical rain forest	<ul style="list-style-type: none"> <li>• southern Malay Peninsula</li> <li>• southern Philippines</li> <li>• most of Indonesia</li> </ul>
tropical monsoon climate	<ul style="list-style-type: none"> <li>• northern Philippines</li> <li>• northern Malay Peninsula</li> <li>• coastal areas of the mainland</li> </ul>
tropical savanna climate	<ul style="list-style-type: none"> <li>• most inland areas</li> </ul>
humid subtropical climate	<ul style="list-style-type: none"> <li>• northernmost mainland</li> </ul>

Weather in Southeast Asia can turn deadly. Tropical storms called typhoons form over the Pacific Ocean and sometimes make landfall. Winds can top 150 miles (241 km) per hour. The winds and pouring rains can destroy homes and buildings. Flooding can wipe out crops and kill large numbers of people.

Southeast Asia has a wide diversity of **flora**, or plant life. Much of the region is covered by tropical rain forests or forests of evergreen and deciduous trees. In coastal areas, forests of mangrove trees form a border between land and sea. The region's **fauna**, or animal life, is also very diverse. Many species of mammals, birds, fish, and insects are **endemic**. This means they are found nowhere else in the world. Unfortunately human activities such as logging, mining, and farming have reduced the habitat of many animals.

 **Marking the Text**

10. Highlight two reasons why typhoons are dangerous.


 **Defining**

11. Use the word *endemic* in a sentence.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

 **Reading Progress Check**

12. What are three factors that affect climate in Southeast Asia?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Writing**

**Check for Understanding**

1. **Informative/Explanatory** What types of landforms are found on mainland Southeast Asia? What types of landforms are found in the Malay Archipelago?

\_\_\_\_\_

\_\_\_\_\_

2. **Narrative** In which climate zone of Southeast Asia would you most like to live? Why?

\_\_\_\_\_

\_\_\_\_\_

**Southeast Asia**

**Lesson 2: History of Southeast Asia**

**ESSENTIAL QUESTION**

*How does geography influence the way people live?*

**Terms to Know**

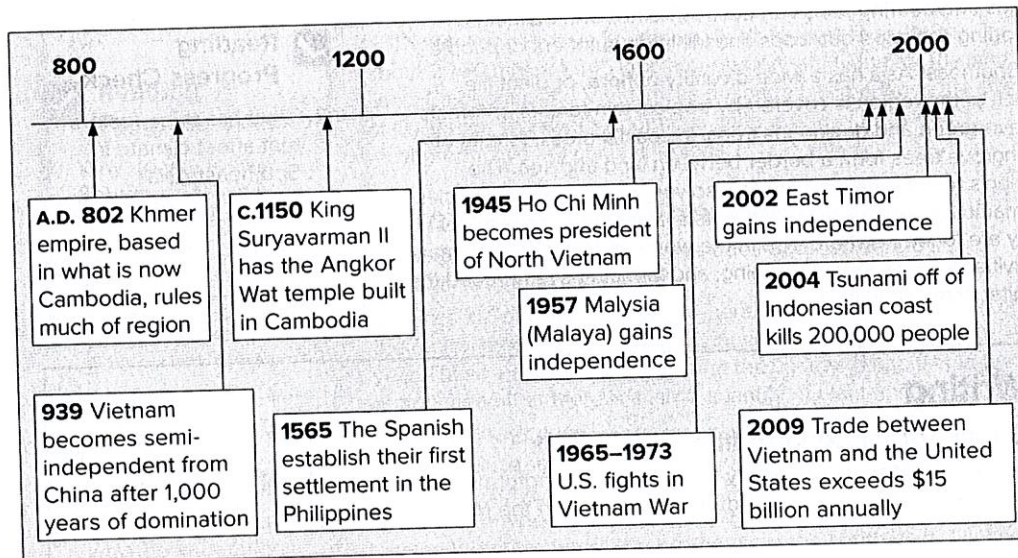
**sultan** a king

**plantation** a large farm on which a single crop is grown for export

**absolute monarchy** a government in which one ruler has total control

**constitutional monarchy** a government in which a ruler must follow a constitution and laws

**When did it happen?**



**Southeast Asia**

**Lesson 2: History of Southeast Asia, *continued***

**Kingdoms and Empires**

**Guiding Question** *What role has trade played in Southeast Asia's history?*

Southeast Asia is known as "the Crossroads of the World" because it is located along important sea trade routes. Trade has led to the spread of many cultural influences. It has also made the region attractive to foreign powers hoping to gain riches and power through control of the trade routes.

People have lived in Southeast Asia for at least 40,000 years. For most of its history, though, the area has looked very different than it does today. During the ice age, sea levels were much lower. Today's sea floor was once part of the mainland. The mainland was much larger, and the island area was much smaller. As the ice age waned, seas began to rise. They reached their current levels about 8,000 years ago.

People in Southeast Asia survived by hunting and gathering their food. About 6,000 years ago, people living in the fertile river valleys and deltas began growing rice. More complex societies could develop when people began settling in one place.

Eventually early metalworking societies arose in Southeast Asia. These people produced bronze tools and weapons. The most famous of these cultures was the Dong Son. This culture was centered in northern Vietnam.

By the middle of the 100s B.C., China and India had become powerful. China conquered the Red River delta and made Vietnam part of the Han empire. Vietnam remained under Chinese control for the next 1,000 years. Missionaries and traders from India travelled to Southeast Asia. These travelers spread India's culture and its religions, Hinduism and Buddhism, into Southeast Asia.

Several trade-based societies arose in the region. Funan was established in the A.D. 100s. It covered parts of what are now Cambodia, Thailand, and Vietnam. Srivijaya arose on the island of Sumatra around the A.D. 600s. This kingdom controlled the Strait of Malacca, an important trade route connecting the Pacific and Indian Oceans.

Agricultural societies arose where rice could be grown. The Pagan kingdom sprang up in Myanmar's Irrawaddy delta. Vietnamese society took root in the Red River delta. The Khmer empire was centered near a large lake in Cambodia. The Khmer empire is known for architecture, especially the temple complexes Angkor Wat and Angkor Thom. These temples still stand and draw millions of visitors each year.

Copyright © McGraw-Hill Education

**? Explaining**

1. Why did foreign powers think they would become richer if they controlled Southeast Asia?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

 **Marking the Text**

2. Circle the name of an early metalworking society in Southeast Asia.

 **Contrasting**

3. How did Chinese culture spread in this region? How did Indian culture spread?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**? Identifying**

4. Why was the Strait of Malacca important?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Southeast Asia**

**Lesson 2: History of Southeast Asia, *continued***

**? Summarizing**

5. Describe how Islam spread through Southeast Asia.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**✓ Reading Progress Check**

6. What are some ways in which India influenced Southeast Asia?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**⚙️ Determining Cause and Effect**

7. Why did European traders want to find routes to Southeast Asia?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Islam, the religion of Muslims, may have reached Southeast Asia as early as the A.D. 800s. It was brought by traders from the Middle East or western India who travelled the sea route to China. By the 1400s, other Islamic kingdoms were established near port cities along the main trade routes. By the 1600s, Islam was the dominant religion across most of the Malay Archipelago. The most important Islamic kingdom was located at the port of Malacca on the Malay Peninsula. Malacca grew into a powerful trading empire. Its **sultans**, or kings, ruled over most of the peninsula and the island of Sumatra.

**Western Colonization**

**Guiding Question** *How did European colonization change Southeast Asia?*

From ancient times through the Middle Ages, Chinese, Indian, and Arab traders brought precious spices to Europeans. Spices were used to flavor food, to preserve meat, and to make perfumes and medicines. Spices were in high demand but supplies were limited. This meant that traders could charge high prices. Some spices were worth more than gold.

European rulers decided they wanted to gain control of this profitable trade. During the Age of Discovery, European explorers made long sea voyages, looking for spices, as well as other riches such as gold and silver. They also wanted to spread Christianity and map the world.

In the early 1500s, Portuguese sailors discovered a way to reach India and Southeast Asia. They found they could reach these areas by sailing around the southern tip of Africa. In 1511 the Portuguese conquered Malacca. They discovered the Moluccas and the Banda Islands where cloves, nutmeg, and mace were grown. These islands became known as the Spice Islands. The wealth generated by spices made Portugal rich.

Other European powers also tried to make money from the spice trade. The explorer Ferdinand Magellan led five Spanish ships that reached the Philippines by sailing across the Pacific Ocean from Mexico. Soon the Philippines became a Spanish colony. By the middle of the 1600s, the Dutch had found a new route to the Spice Islands. They replaced the Portuguese as the area's main trading power.

In the 1800s and early 1900s, European countries gained control over other parts of Southeast Asia. Burma and Malaysia became colonies of Great Britain. Vietnam, Laos, and Cambodia became colonies of France.

## Southeast Asia

### Lesson 2: History of Southeast Asia, *continued*

Europeans looked for more ways to make money in Southeast Asia. They built mines and factories. They established **plantations**, or large farms on which a single crop is grown for export. Crops grown on plantations included tea, coffee, tobacco, and rubber trees. Thousands of people were brought from China and India to work in the mines and on the plantations. Many became permanent residents.

Thailand, then known as Siam, was the only nation in Southeast Asia that Europeans did not colonize. It was ruled by an **absolute monarchy** from the mid-1400s until 1932. In an absolute monarchy, one ruler has governing power over the entire country. Siam was able to remain independent by allowing free trade with European countries.

### Independent Countries

**Guiding Question** *What events ended the colonial era in Southeast Asia?*

By the early 1900s, nearly all of Southeast Asia was controlled by foreign countries. Colonial rule was often harsh and unjust. The people sometimes violently resisted colonialism. However, countries in the region did not gain their freedom until after World War II ended in 1945.

Date	Independent Country	Colonial Power
1946	The Philippines	United States
1948	Myanmar	Britain
1949	Indonesia	Netherlands
1950s	Vietnam, Laos, and Cambodia	France
1950s	Malaysia and Singapore	Britain

The last country to gain its freedom was East Timor. It declared independence from Portugal in 1975 but was then invaded by Indonesia. Indonesia's violent rule lasted until 2002.

The newly independent countries of Southeast Asia faced many challenges. In many countries, wars and revolutions led to years of violence. In Vietnam, Communist forces defeated the French in 1954 and ruled the northern part of the country. The United States supported leaders in the south against the Communists. Fighting led to the Vietnam War, which lasted until 1975 and took more than 2 million lives. After the war ended, North Vietnam united the country under a Communist government.



#### Marking the Text

8. Circle the products that are grown on plantations.



#### Reading Progress Check

9. In what ways did European powers gain wealth from their colonies in Southeast Asia?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



#### Marking the Text

10. Highlight countries that gained their independence from Britain in pink. Highlight countries that gained their independence from France in yellow.



#### Explaining

11. Why was East Timor the last country to achieve its independence?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**Southeast Asia**

**Lesson 2: History of Southeast Asia, *continued***



**Marking the Text**

- 12. Underline four events that occurred in 1975.



**Reading Progress Check**

- 13. What colonial power ruled Vietnam before 1954?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

In Laos, Vietnamese communists fought the government, which collapsed in 1975. In the same year, a rural communist movement called the Khmer Rouge overthrew the Cambodian government. Between 1975 and 1979, the Khmer Rouge undertook a brutal campaign of terror in which at least 1.5 million people died. In 1978, Vietnam sent soldiers to invade Cambodia and set up a new government that it controlled. This began a civil war that lasted almost 13 years.

Economic growth in China and Taiwan has helped some countries in Southeast Asia. Manufacturing is important in Thailand, Malaysia, Indonesia, the Philippines, and Vietnam. Textiles and tourism are important parts of Cambodia's economy. Singapore is one of the world's wealthiest countries.

Thailand has been a **constitutional monarchy** since 1932. In a constitutional monarchy a ruler must follow a constitution and laws. In the 1980s, Thailand adopted democratic reforms that helped the economy grow.

Myanmar has struggled since gaining independence. The military seized power and established a socialist government in 1962. Since then, the country has been closed to outside influences.

**Writing**

**Check for Understanding**

- 1. **Informative/Explanatory** How has location affected the development of economies in Southeast Asia?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- 2. **Argument** Why do you think newly independent countries in Southeast Asia had difficulties in establishing stable governments?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Southeast Asia**

**Lesson 3: Life in Southeast Asia**

**ESSENTIAL QUESTIONS**

*What makes a culture unique? Why does conflict develop?*

**Terms to Know**

- primate city** a city so large and important that it dominates the rest of the country
- minority** small ethnic group within a country
- Pacific Rim** the area bordering the Pacific Ocean
- subsistence farming** type of farming in which only enough food is grown to feed one's family
- ecotourism** touring natural environments such as rain forests and coral reefs

**What Do You Know?**

In the first column, answer the questions based on what you know before you study. After this lesson, complete the last column.

Now . . .		Later . . .
	Where do most Southeast Asian people live?	
	What religions are often practiced in Southeast Asia?	
	What are the most important crops grown in Southeast Asia?	

**People and Places**

**Guiding Question** *How is Southeast Asia's population shifting?*

Southeast Asia has fewer people than its neighbors, China and India. Compared to other areas of the world, however, Southeast Asia's population is high. The population grew quickly in the 1900s. Today, the region's growth is only slightly above the world average.

Southeast Asia is home to about 625 million people, but they are not evenly distributed throughout the region. For instance, almost 40 percent of people in the region live in Indonesia. The highest population densities are found where there is good soil and abundant water for farming. This includes coastal plains, river valleys, and deltas.

**? Identifying**

1. In which country does about 40 percent of Southeast Asia's population live?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## Southeast Asia

### Lesson 3: Life in Southeast Asia, *continued*



#### Marking the Text

- Highlight the definition of *primate city*.



#### Reading Progress Check

- What types of geographical areas in Southeast Asia have the highest population densities?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



#### Identifying Cause and Effect

- Why are there so many ethnic groups in Southeast Asia?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



#### Activating Prior Knowledge

- Why do so many people in Southeast Asia speak English, Spanish, and French?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Since World War II, Southeast Asians have moved steadily from rural areas to cities. This movement is called urbanization. Some cities are very large. Manila, the capital of the Philippines, is home to more than 11 million people. Manila is a **primate city**. A primate city is so large and important that it dominates the rest of the country. Jakarta, the capital of Indonesia, has grown so much that it has absorbed nearby cities and become what is called a megalopolis. Today it is one of the world's largest megalopolises, with some 26 million residents.

### People and Cultures

**Guiding Question** *How have China and India influenced Southeast Asian cultures?*

Peoples from other regions have migrated to Southeast Asia for more than 2,000 years. As a result, the region has a rich mix of peoples and cultures.

There are five main ethnic groups on the mainland, as shown in the table below. Many smaller groups, called minorities, also live in each country.

Country or countries	Main ethnic group
Myanmar	Burmese
Thailand	Siamese
Malaysia	Malay
Laos, Cambodia	Mon-Khmer
Vietnam	Vietnamese
Indonesia	Javanese
Philippines	Tagalog

People speak many languages in Southeast Asia. Most languages are native to the region. English, Spanish, French, and other European languages were brought by colonial powers.

Three-fourths of people in Southeast Asia live in rural areas. Many rural people move to the cities. Others leave to work in other countries. They send money home to help their families survive.

Education and literacy rates vary. In Vietnam, 94 percent of people can read and write. In East Timor, Laos, and Cambodia, less than 75 percent can read and write. Most schools in East Timor were destroyed during the fight for independence from Indonesia. The new government is working hard to rebuild the schools.

**Southeast Asia**

**Lesson 3: Life in Southeast Asia, *continued***

Buddhism is the primary religion on the mainland. Islam is dominant on the southern Malay Peninsula and across Indonesia. Most people in the Philippines and East Timor are Roman Catholic. Some rural people practice animist religions. Animism is based on the belief that all natural objects, such as trees, rivers, and mountains, have spirits.

Region	Main religion
southern Malay Peninsula	
	Islam
mainland	
	Roman Catholicism
	Roman Catholicism

A wide variety of art forms reflect the region's great cultural diversity. In Thailand, plays called *ikay* feature singing, dancing, and brightly colored costumes. Indonesia, Malaysia, and Cambodia all have a rich theater tradition of shadow puppets.

**Issues in Southeast Asia**

**Guiding Question** *In what ways have human activities affected the environment in Southeast Asia?*

Much of the **Pacific Rim**, the area bordering the Pacific Ocean, has experienced rapid economic growth. This has brought great changes to some of the region's countries.


Most people earn their living by farming. Rice is a food staple and an important cash crop. Thailand and Vietnam lead the world in exports of rice. In other areas, plantations produce natural rubber, palm oil, coconuts, sugar, cacao, coffee, and spices. Many farmers grow only enough food to feed themselves and their families. This is called **subsistence farming**.

Indonesia, Malaysia, and Thailand mine large amounts of tin. Indonesia also has copper and gold deposits. Fishing is a main industry in Thailand, Indonesia, Malaysia, and the Philippines. Tourism is growing in countries such as Cambodia, Thailand, and Vietnam. **Ecotourism** allows tourists to enjoy Southeast Asia's natural environment, such as rain forests and coral reefs.

Modern technology is also a part of the economy. The tiny country of Singapore has grown into a major industrial center. Finance, communication, and information technology have also improved in Southeast Asia. Many workers are employed by European, Japanese, and U.S. companies.

 **Marking the Text**

6. Complete the table to the left on religions in Southeast Asia.

 **Reading Progress Check**

7. Which religions are most widespread in Southeast Asia?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

 **Activating Prior Knowledge**

8. Which states in our country can be considered Pacific Rim states?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

 **Marking the Text**

9. Highlight industries important in Thailand in yellow. Highlight industries important in Indonesia in blue. Highlight industries important in both countries in green.

[This was something that President Truman and his advisers decidedly did not want: They were sure that such a war would lead to Soviet aggression in Europe, the deployment of atomic weapons and millions of senseless deaths. To General MacArthur, however, anything short of this wider war represented “appeasement,” an unacceptable knuckling under to the communists.

As President Truman looked for a way to prevent war with the Chinese, MacArthur did all he could to provoke it. Finally, in March 1951, he sent a letter to Joseph Martin, a House Republican leader who shared MacArthur’s support for declaring all-out war on China—and who could be counted upon to leak the letter to the press. “There is,” MacArthur wrote, “no substitute for victory” against international communism.

For Truman, this letter was the last straw. On April 11, the [president fired the general](#) for insubordination.

## The Korean War Reaches a Stalemate

In July 1951, President Truman and his new military commanders started peace talks at Panmunjom. Still, the fighting continued along the 38th parallel as negotiations stalled. Both sides were willing to accept a ceasefire that maintained the 38th parallel boundary, but they could not agree on whether prisoners of war should be forcibly “repatriated.” (The Chinese and the North Koreans said yes; the United States said no.) Finally, after more than two years of negotiations, the adversaries signed an armistice on July 27, 1953. The agreement allowed the POWs to stay where they liked; drew a new boundary near the 38th parallel that gave [South Korea](#) an extra 1,500 square miles of territory; and created a 2-mile-wide “demilitarized zone” that still exists today.

## Korean War Casualties

The Korean War was relatively short but exceptionally bloody. Nearly 5 million people died. More than half of these—about 10 percent of Korea’s prewar population—were civilians. (This rate of civilian casualties was higher than World War II’s and the [Vietnam War’s](#).)

Almost 40,000 Americans died in action in Korea, and more than 100,000 were wounded. Today, they are remembered at the [Korean War Veterans Memorial](#) near the Lincoln Memorial on the National Mall in Washington, D.C., a series of 19 steel statues of servicemen.

# The Korean War: A Timeline

Name:

Class:

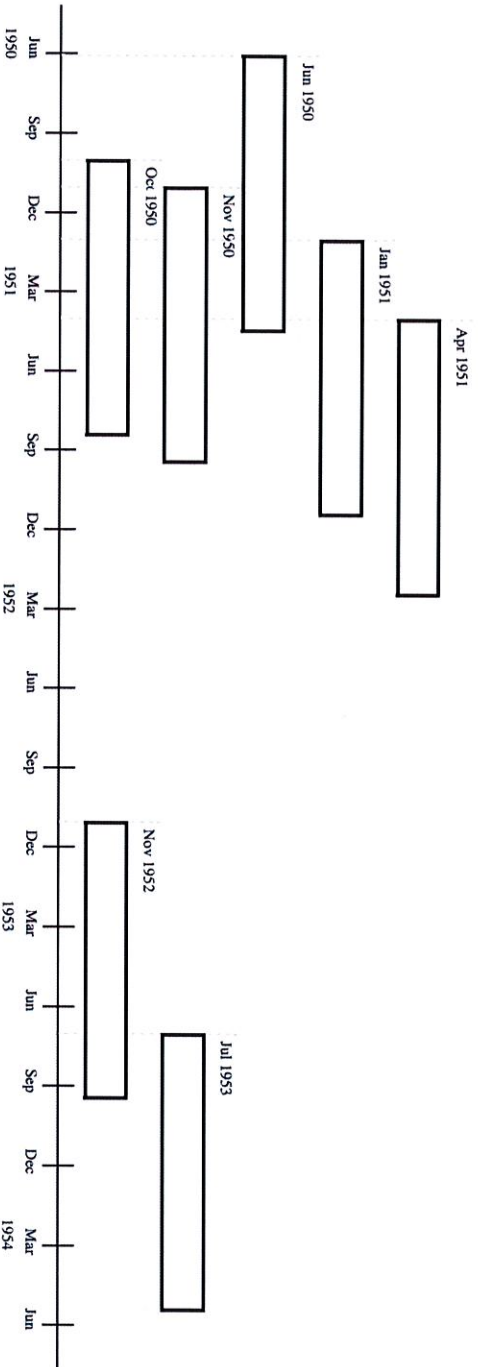
Teacher:

Date:

Directions: Match each item to its corresponding place on the timeline.

ITEM BANK:

Eisenhower elected President	Gen. MacArthur fired by Truman	North Korea & South Korea agree to truce	North Korea invades South Korea; US sends troops to South
US invades North Korea	US pushed out of North Korea	US troops reach border of China	



# 2 Technological Design



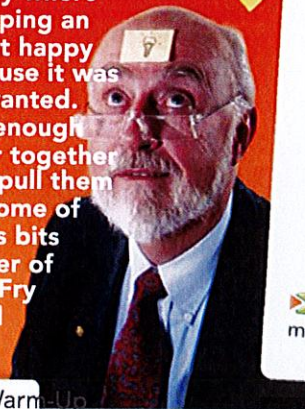
What Are the Technology Design Steps?



## my planet DiARY

### A Sticky Problem

Art Fry was frustrated. The bits of paper that he used to mark his place in his church hymnal kept falling out. He remembered that Spencer Silver, another scientist at the company where he worked, was developing an adhesive. Silver was not happy with the adhesive because it was weaker than what he wanted. But, it was just strong enough to hold pieces of paper together and still allow users to pull them apart again. Fry used some of the adhesive to coat his bits of paper. After a number of years of development, Fry and Silver had invented sticky notes!



Do the Inquiry Warm-Up  
Why Redesign?

## DISCOVERY

Answer the questions below.

1. Use Art Fry's experience to explain the phrase "necessity is the mother of invention."

---



---



---

2. Why is communication between engineers important?

---



---



---

**PLANET DIARY** Go to Planet Diary to learn more about technological design.

## What Are the Technology Design Steps?

If you had used a computer 60 years ago, you would not have used a mouse. The mouse was the result of a technology design process to translate the motion of your hand into signals the computer can read. The steps for designing technology include identifying a need, researching the problem, designing a solution, building a prototype, troubleshooting and redesigning, and communicating the solution.





▶ **Research the Problem** After defining a problem, engineers research it by gathering information that will help them solve the problem. There are many ways that engineers research information about a new product, as shown in **Figure 2**. They may read books and articles. They may also attend conferences and share ideas with others. Engineers usually perform experiments to test the technology. In addition, they may talk to people like you to find out what customers want.

FIGURE 2  
**Researching**

Research is an important step in the design process.

**Research the Problem**  
the notebook page, write three things discovered during the research for the original mouse.

To gather information about the mouse, the engineers conducted many tests. They knew that the ball inside the mouse was held in place by a complex system of sensitive, costly parts. Because the parts were so sensitive, they found that too much pressure on the ball made it slip. In addition, any bit of dirt or dust would jam the system. This problem caused the mouse to stop working about once a week. To fix it, the entire mouse had to be taken apart, and each part had to be cleaned separately.




▶ **Design a Solution** Designing a solution involves coming up with ideas that address the problem. The best design meets the needs and has the fewest negative characteristics.

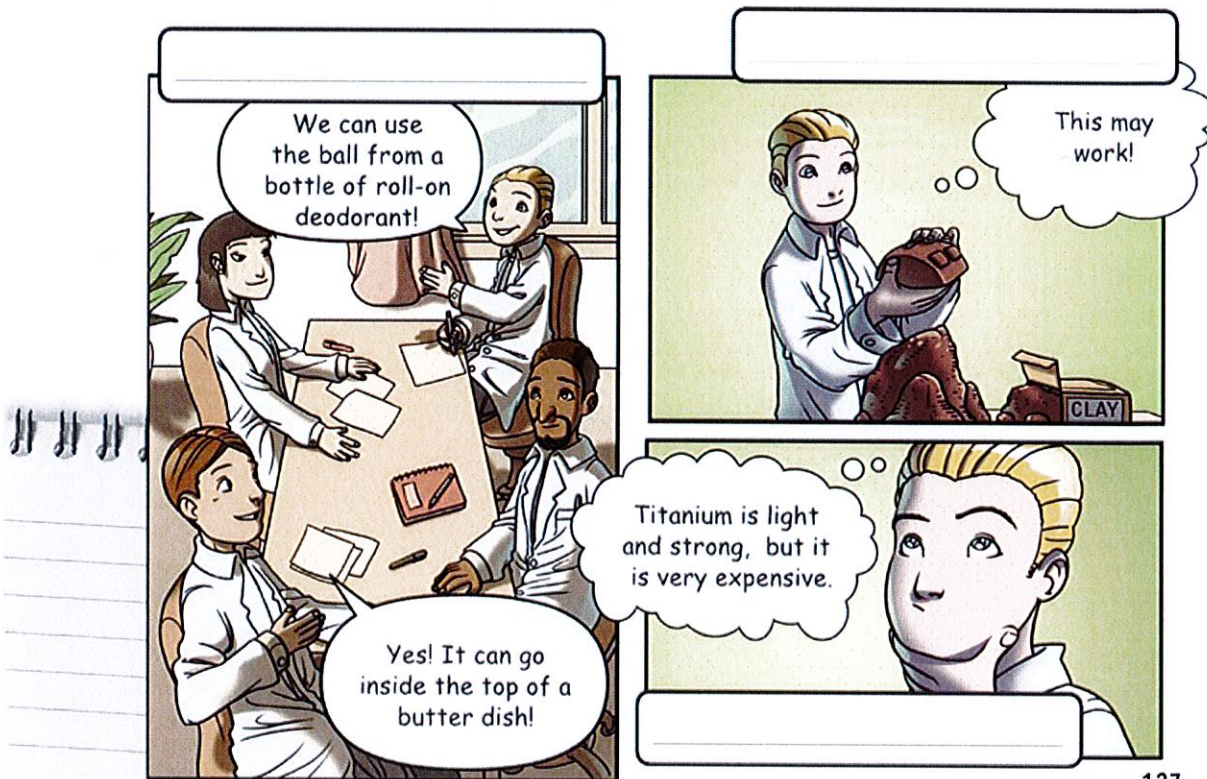
**Generate Ideas** Have you and your friends ever met to come up with ideas for a special event? **Brainstorming** is a process in which group members suggest any solutions that come to mind. Many ideas are better than only a few ideas because you don't know which idea might work. After brainstorming, engineers may sketch or model their ideas. **Figure 3** shows these steps.

**Identify Materials** For physical products, engineers must consider the strength and performance of the materials they use. For example, the parts of a mouse must stand up to repeated use and resist breaking. Materials also must be safe to use.

FIGURE 3  
**Designing a Solution**

Designing a solution takes multiple steps.

 **Design a Solution** Label each picture with the design process step it illustrates. On the notebook paper, list the engineers' brainstorming ideas.



# apply it!

Watch ideas take off as you model some stages of the desing process.

**1 Communicate** With three or four classmates, brainstorm some ideas for a new product that gets all of the peanut butter out of a container.

---

---

---

---

**2 Work with Design Constraints** Evaluate each idea, and discuss the constraints and trade-offs you mingham to make.

---

---

---

---

---

---

---

---

**3 Design a Solution** Sketch the design solution the team has agreed on.

---

---

---

---

---

---

---

---



**Evaluate Constraints** In Figure 4 you can see the result of a mouse with a ball that creates too much friction. Friction is the force produced when two surfaces rub against each other. If the ball inside a mouse is made of a material with too much “grip,” it will not move. The material and the friction it produces are constraints. A **constraint** is any factor that limits a design.

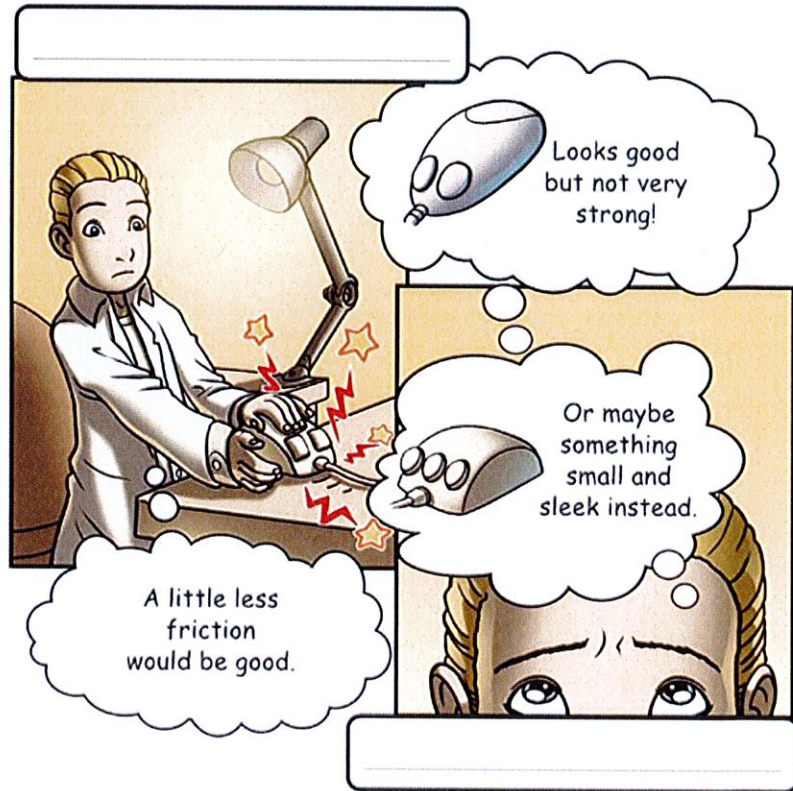
**Make Trade-Offs** One material may be sturdy but look ugly. Another material may be attractive but not strong. The design team may decide to use the more attractive material, which will appeal to customers. In this case, the team would be trading off strength for appearance. A **trade-off** is an exchange in which one benefit is given up in order to obtain another.

FIGURE 4.....

## The Mouse Design Process Continues

Solving problems and making choices are part of designing a new product.

**Identify** Label each picture with the appropriate design process step.



▶ **Build a Prototype** After considering constraints and trade-offs, engineers build and test a prototype. A **prototype** is a working model used to test a design. Some prototypes may be full-size and made of the materials proposed for the final product. Others are completely virtual, or computer generated.

Prototypes are used to test the operation of a product. Prototypes test how well the product works, how long it lasts, and how safe it is to use. A design team may have some people use the prototype and evaluate it. Engineers may also test the prototype in a lab to see how it works, as shown in Figure 5. Or, they may use computers to test virtual models. Test results help determine how well the product meets the goals and what improvements are still needed.

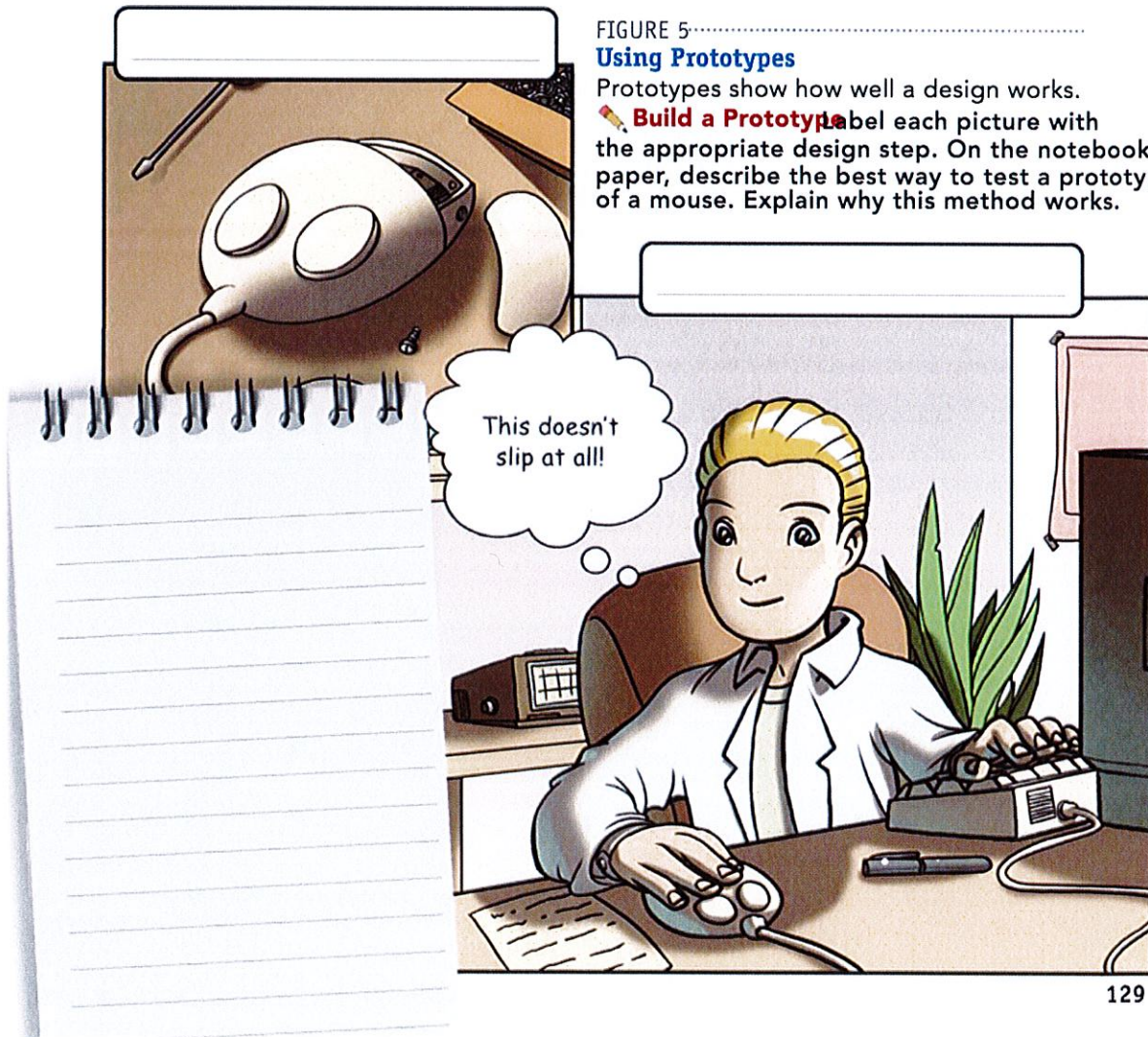


FIGURE 5.....  
**Using Prototypes**  
Prototypes show how well a design works.  
▶ **Build a Prototype** Label each picture with the appropriate design step. On the notebook paper, describe the best way to test a prototype of a mouse. Explain why this method works.

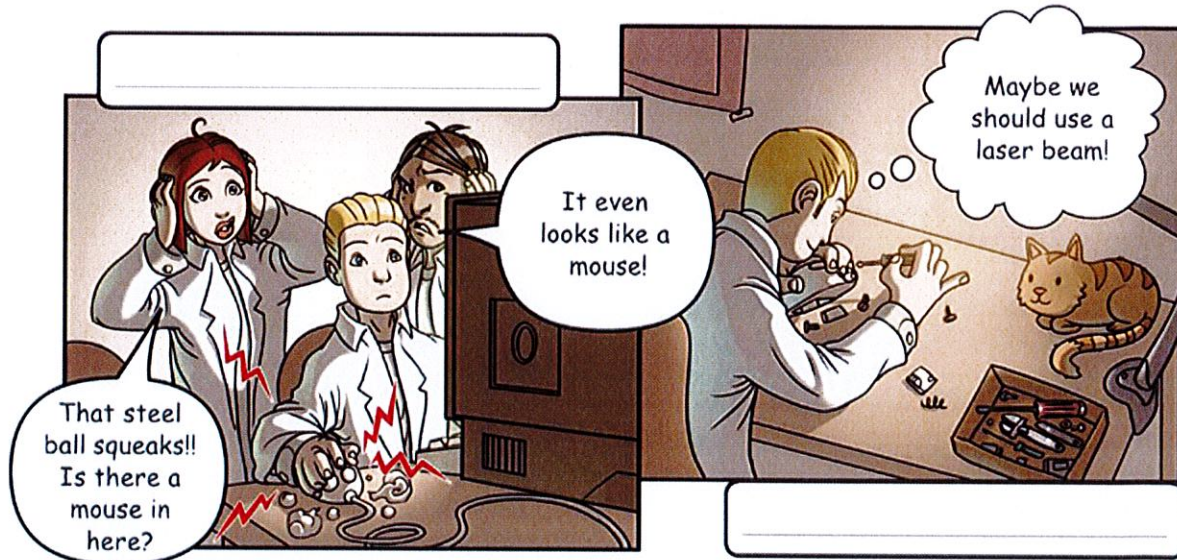


FIGURE 6

**INTERACTIVE ART**

**Troubleshooting and Redesigning**

These engineers are troubleshooting and working on a redesign.

1. **Label** In the boxes, write down the design process step each picture shows.
2. **Troubleshoot** Write in the table the problems with the mouse that caused the optical mouse to be invented.
3. **CHALLENGE** Why is it wise to provide time and money to redesign a product?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Troubleshoot	Redesign

**Troubleshoot and Redesign** Prototype tests may uncover design problems. For example, tests may show that people have difficulty using a product or that a part breaks easily. The causes of any problems must be identified and the product must be redesigned. The process of analyzing a design problem and finding a way to fix it is called **troubleshooting**.

In Figure 6, you can see a problem with the mouse that prototype tests revealed. The mouse was noisy. Troubleshooting identified the rolling ball as the cause of the noise. The engineers replaced the steel ball with a rubber ball to make the mouse quieter. Engineers also added an easy-to-open ring-shaped cap. This redesign also made the mouse easy to clean.

Mouse technology progressed even further after these problems were solved. A wireless optical mouse uses a laser instead of a ball and can have a sensor instead of a wire connected to the computer.



FIGURE 7  
**Communicating the Solution**  
 Communicating about a new technology shows customers the new product.  
 ✎ **List** Write the ways communication occurs in the picture.

▶ **Communicate the Solution** The last stage of the technology design process is communicating the solution. Engineers must explain the design to manufacturers who will produce the product. The engineers must describe their product to advertisers. In doing so, they must also communicate how a product meets the consumer's needs. Look at Figure 7 to see some ways that engineers communicate.

Frequently, inventors or companies will obtain patents to protect their inventions. A **patent** is a legal document issued by a government that gives the inventor exclusive rights to make, use, or sell the invention over a certain period of time. If others want to use the invention, they must obtain the patent owner's permission and pay a fee. After the patent's time runs out, however, anyone can make or sell the invention.

✎ **Identify the Main Idea**  
 Circle the main idea in the first paragraph. Underline the details.

**Lab zone** Do the Quick Lab  
 Watch Ideas Take Off.

🔍 **Assess Your Understanding**

1a. **Explain** What are design constraints?

\_\_\_\_\_

\_\_\_\_\_

b. **Infer** What steps would engineers take if there are problems with optical mice?

\_\_\_\_\_

\_\_\_\_\_

got it? .....

I get it! Now I know that technology design steps are to: \_\_\_\_\_

\_\_\_\_\_

I need extra help with

Go to **my science** **coach** online for help with this subject.

**Review and Reinforce**

# Technological Design

## Understanding Main Ideas

Answer the following questions in the spaces provided.

1. List in order the six stages in the technology design process.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. What are prototypes used to test?

\_\_\_\_\_  
\_\_\_\_\_

3. What must engineers do if they discover problems testing a prototype?

\_\_\_\_\_  
\_\_\_\_\_

4. To whom do engineers communicate the solution?

\_\_\_\_\_

## Building Vocabulary

Fill in the blank to complete each statement.

- 5. The process in which group members suggest any solutions to a problem that come to mind is called \_\_\_\_\_.
- 6. A(n) \_\_\_\_\_ is a legal document issued by a government that gives an inventor exclusive rights.
- 7. A(n) \_\_\_\_\_ is an exchange in which one benefit is given up in order to obtain another.
- 8. A working model used to test a design is called a(n) \_\_\_\_\_.
- 9. The process of analyzing a design problem and finding a way to fix it is called \_\_\_\_\_.
- 10. A(n) \_\_\_\_\_ is any factor that limits a design.

**Lesson Quiz**

# Technological Design

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. \_\_\_\_\_ The last stage of the technology design process is communicating the solution.
2. \_\_\_\_\_ Any factor that limits a design is a trade-off.
3. \_\_\_\_\_ Brainstorming involves analyzing and fixing a design problem.
4. \_\_\_\_\_ The technology design process begins with identifying a need.
5. \_\_\_\_\_ A factor that improves a design is called a constraint.
6. \_\_\_\_\_ A trade-off involves an exchange of manufacturers.

Write the letter of the correct answer on the line at the left.

7. \_\_\_ What do you call a working model used to test a design?  
A patent  
B constraint  
C prototype  
D trade-off
8. \_\_\_ What should engineers do immediately after they define a problem or identify a need they want to meet?  
A communicate a solution  
B research the problem  
C build a prototype  
D design a solution
9. \_\_\_ Which of the following gives an inventor exclusive rights to make, use, or sell his or her invention?  
A a trade-off  
B an advertiser  
C an engineer  
D a patent
10. \_\_\_ Brainstorming is a part of which of the following steps in the design process?  
A communicating a solution  
B researching the problem  
C building a prototype  
D designing a solution



If you have access to a computer and are working on USATestPrep online, you do NOT have to complete this worksheet.

# Space and Technology

Name:

Class:

Teacher:

Date:

Directions: Match each item to its corresponding space below.

ITEMBANK:

- distant objects
- orbit
- satellites
- space probes
- surfaces
- technology
- telescope

The Milky Way galaxy is enormous when compared to planet Earth. Other planets, moons, and stars are millions of miles away, yet scientists are able to study them. Advances in

allow scientists to explore objects in the sky. One tool scientists use to study stars, moons, and other planets is called a telescope. This tool makes

appear brighter, larger, and sharper, allowing scientists to see details of these objects that cannot be seen from Earth otherwise. Scientists also use

, which are similar to telescopes, except they above Earth and collect and send images of things in space.

These images allow scientists to see other parts of objects that cannot be seen with a from Earth. Another method to study space is by using

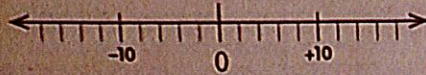
; robotic spacecrafts that can land and move around on space objects. These robots can be controlled from Earth and can explore the

of objects in space. Technology has allowed scientists to study space with a variety of tools, from objects on the ground to objects in space.

1  $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$  \_\_\_\_\_

$\frac{1}{4} \times 3 =$  \_\_\_\_\_

2 Use the number line to solve the problems.



$$\begin{array}{r} -16 \\ + 8 \\ \hline \end{array} \qquad \begin{array}{r} 8 \\ - 16 \\ \hline \end{array}$$

3 What is 20% of 300? \_\_\_\_\_

4 Which formula should be used to find the area of a circle?

- $\pi d$      $2\pi r$      $\pi r^2$

5 Sid had a collection of baseball cards. One day he decided to give half of them to his brother Seth. Then he gave one-third of what was left to his friend Bref. Then he gave half of what was left to his friend Kevin. Now Sid has 50 baseball cards. How many cards did he have to start with?

\_\_\_\_\_

1  $2 - 0.69 + 3.5 =$  \_\_\_\_\_

$$\begin{array}{r} \frac{1}{3} \\ \times 4 \\ \hline \end{array} \qquad \begin{array}{r} \frac{5}{8} \\ \times 4 \\ \hline \end{array}$$

3 Write the weights below in order from heaviest to lightest.

1g   1cg   1kg   1mg

\_\_\_\_\_

4 Which plane figure has three sides, two of which are the same length?

- trapezoid  
 isosceles triangle  
 scalene triangle

5 Greg made 11 cuts in a loaf of bread to make each slice  $\frac{1}{2}$  inch thick. How long is the loaf of bread?

\_\_\_\_\_

1  $6.2 \times 2.6 =$  \_\_\_\_\_

2 
$$\begin{array}{r} 7 \\ \times 7 \\ \hline \end{array} \quad \begin{array}{r} -7 \\ \times 7 \\ \hline \end{array}$$

- 3 A standard deck has 52 cards with 4 suits of 13 cards each: 2 red suits and 2 black suits. What is the probability of drawing a red card from a standard deck?
- \_\_\_\_\_

- 4 How many meters are in 7 kilometers?

700     7,000     70,000

- 5 Juan is  $1\frac{1}{4}$  feet shorter than Maria. Maria is  $\frac{1}{3}$  foot taller than Luis. If Luis is 62 inches tall, how tall are Maria and Juan?

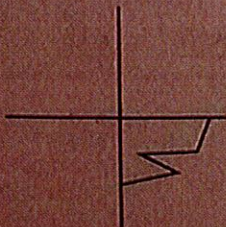
Maria \_\_\_\_\_

Juan \_\_\_\_\_

1  $\frac{1}{4} \div \frac{1}{2} =$  \_\_\_\_\_

2  $92 \overline{)74,704}$

- 3 Draw the other three parts of the shape to show that it has two lines of symmetry.



- 4 What is the area of a right triangle that is 4 cm high and has a base that is 7 cm long?
- \_\_\_\_\_

- 5 How many different outfits can Gavin make with three shirts and two pairs of pants?
- \_\_\_\_\_

## Activity 1

Sarim has \$1.00 in coins. One-fifth of the coins are dimes, two-fifteenths are nickels, and two-thirds are pennies. How many of each coin does Sarim have?

\_\_\_\_\_ dimes

\_\_\_\_\_ nickels

\_\_\_\_\_ pennies

Show your work.

## Activity 2

How many facts can you complete in one minute?

$$\begin{array}{r} 10 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 12 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 11 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 11 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ \times 12 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 11 \\ \times 0 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ \times 11 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ \times 0 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 11 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 12 \\ \hline \end{array}$$

$$\begin{array}{r} 11 \\ \times 11 \\ \hline \end{array}$$

\_\_\_\_\_ correct

If you have access to a computer and are working on USATestPrep online, you do NOT have to complete this worksheet.

## Ratios, Proportions, Percents

Name:

Class:

Teacher:

Date:

**Directions:** Place each item in the correct order.

ITEMBANK:

Common Denominator	Denominator	Fraction	Percent	Ratio	Rational Number
--------------------	-------------	----------	---------	-------	-----------------

This is a number between zero and one expressed as one number over another.

This is the number of parts out of 100, the numerator of a fraction where the denominator is 100.

This looks like a fraction but the numerator and denominator have units of measure attached and represent a relationship in a certain context.


When dealing with fractions with two different numbers on the bottom, this is a number which both bottom numbers divide into evenly.

This is the bottom quantity of fraction.

Any number that can be written as a fraction, any number without a decimal or fraction, fractions, and any numbers with decimal portions that end or repeat.



## EXAMPLE 1 Write Ratios to Compare Quantities

Multimedia 

Tom's Pet Service takes care of cats and dogs. Currently, there are more dogs than cats. Compare the number of cats to the number of dogs. Then compare the number of cats to the total number of pets at Tom's Pet Service.



A **ratio** is a relationship in which for every  $x$  units of one quantity there are  $y$  units of another quantity.

A ratio can be written three ways.

$x$  to  $y$   
 $x:y$   
 $\frac{x}{y}$

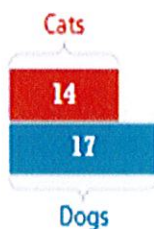
The quantities  $x$  and  $y$  in a ratio are called **terms**.

Use a ratio to compare the number of cats to the number of dogs.

14 to 17

14:17

$\frac{14}{17}$



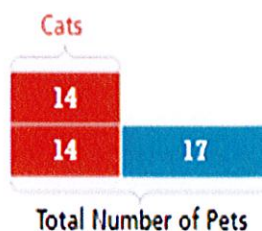
This ratio compares one part to another part.

Use a ratio to compare the number of cats to the total number of pets.

14 to 31

14:31

$\frac{14}{31}$



This ratio compares one part to the whole.

### Try It!

What are three ways to write the ratio of the number of dogs to the total number of pets?

**Convince Me!** Is the ratio of dogs to cats the same as the ratio of cats to dogs? Explain.

**EXAMPLE 2****Use a Bar Diagram to Solve a Ratio Problem**

ACTIVITY



AS 18.15

The ratio of footballs to soccer balls at a sporting goods store is 5 to 3. If the store has 100 footballs in stock, how many soccer balls does it have?



Use a bar diagram to show the ratio 5:3.

Use 5 boxes for footballs.



Use 3 boxes for soccer balls.

Use the same diagram to represent 100 footballs.

Because  $100 \div 5 = 20$ , write 20 in each red box.



Each box represents the same value. Write 20 in each green box.



There are 3 green boxes, so the total number of soccer balls is  $3 \times 20$ , or 60.

The sporting goods store has 60 soccer balls in stock.

**EXAMPLE 3****Use a Double Number Line Diagram to Solve a Ratio Problem**

Chen can ride his bike 3 miles in 15 minutes. At this rate, how long will it take Chen to ride his bike 18 miles?

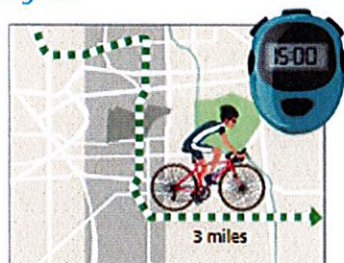
Use a double number line diagram. Show 15 minutes for every 3 miles.



Count by 3s along the top number line until you get to 18 miles.

Count by 15s for the same number of spaces along the bottom number line.

Chen can ride 18 miles in 90 minutes.



**Model with Math** A double number line diagram can represent a constant relationship between two values with different units. MP.4

**Try It!**

Chen's friend Alisa can ride her bike 2 miles in 7 minutes. Use a bar diagram or a double number line diagram to find how long it would take Alisa to ride 10 miles if she rides at the same rate.

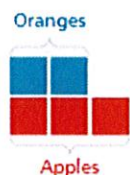


Go Online | [PearsonRealize.com](http://PearsonRealize.com)

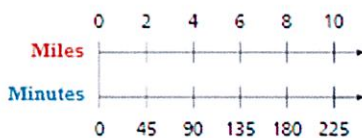
5-1 Understand Ratios 259



A ratio compares two quantities. A ratio can be written 3 ways:  $x$  to  $y$ ,  $x:y$ , or  $\frac{x}{y}$ . Ratios can be represented using bar diagrams and double number line diagrams.



The ratio of oranges to apples is 2:3, 2 to 3, or  $\frac{2}{3}$ .



The ratio of miles to minutes is 2:45, 2 to 45, or  $\frac{2}{45}$ .

## Do You Understand?

1. **Essential Question** What is a mathematical way to compare quantities?

2. **Reasoning** What are two different types of comparisons that a ratio can be used to make? MP2

3. A science classroom has 5 turtles and 7 frogs. What is the ratio of frogs to total animals?



4. Tye is making trail mix with 3 cups of nuts for every 4 cups of granola. If Tye has 6 cups of nuts, how many cups of granola should he use?

## Do You Know How?

In 5–7, use three different ways to write a ratio for each comparison.

A sixth-grade basketball team has 3 centers, 5 forwards, and 6 guards.

5. Forwards to guards

6. Centers to total players

7. Guards to centers

8. The ratio of blue cards to green cards is 2 to 5. There are 8 blue cards. Complete the diagram and explain how you can find the number of green cards.





PRACTICE



TUTORIAL

## Practice & Problem Solving

Scan for  
Multimedia

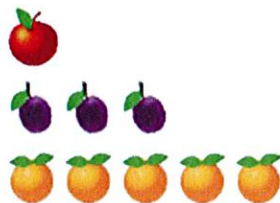
In 9–14, use the data to write a ratio for each comparison in three different ways.

A person's blood type is denoted with the letters A, B, and O, and the symbols + and -. The blood type A+ is read as *A positive*. The blood type B- is read as *B negative*.

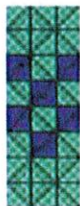
9. O- donors to A+ donors      10. AB- donors to AB+ donors
11. B+ donors to total donors      12. O- donors to A- donors
13. A+ and B+ donors to AB- donors      14. A- and B- donors to AB- donors
15. Which comparison does the ratio  $\frac{90}{9}$  represent?      16. Which comparison does the ratio 20:21 represent?

Type	Donors
A+	45
B+	20
AB+	6
O+	90
A-	21
B-	0
AB-	4
O-	9
Total	195

17. Sam is packing gift boxes with fruit. For each apple, he packs 3 plums and 5 oranges. If he puts 3 apples in a box, how many plums and oranges will Sam put in the box? Draw a diagram to solve the problem.



18. Write a ratio that compares the number of teal squares to the total number of squares in the quilt.



19. **Reasoning** Rita's class has 14 girls and 16 boys. How does the ratio 14:30 describe Rita's class? MP2



20. A math class surveyed students about their musical preferences and recorded the results in the table. Use the data to write a ratio for each comparison in three different ways.

- Students who prefer classical to students who prefer techno
- Students who prefer hip-hop to total number of students surveyed

Favorite Music

Music Type	Number of Students
Rock	10
Classical	4
Techno	12
Hip-Hop	15
Country	8
Alternative	4

21. **Construct Arguments** Justin used blocks to model the following situation: A car dealership sells 7 cars for every 4 minivans it sells. How can Justin use his model to find the number of minivans the dealership sells if it sells 35 cars? **MP3**



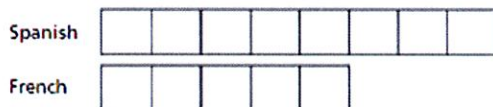
22. **Make Sense and Persevere** The ratio of adult dogs to puppies at a park on Monday was 3:2. There were 12 puppies there that day. On Tuesday, 15 adult dogs were at the park. What is the difference between the number of adult dogs at the park on Monday and Tuesday? **MP1**

23. **Higher Order Thinking** At 9:30 A.M., Sean started filling a swimming pool. At 11:30 A.M., he had filled 1,800 gallons. At what time will the pool be full?



## © Assessment Practice

24. Of the students taking a foreign language class, 8 students take Spanish for every 5 students who take French. This is represented in the diagram below.



Explain how you can use the diagram to find the number of students who are taking French if there are 72 students taking Spanish.