Stonegate

7th Grade

Independent Study
Independent Study Daily Checklist

☐ Complete attached Greek Roots Vocab Activities and Quiz

☐ Read 20 minutes and fill out the reading log

☐ Respond to reading by completing one activity from the reading response menu

☐ Work for 20 minutes on a writing task (See enclosed writing task menu)
Independent Study Greek Roots Vocabulary Work

Vis, vid: see Root

invisible – adj. impossible to see; not visible. Many gases are invisible to the human eye.

televise – v. to broadcast something by television. NBC will televise the Olympics this summer.

video – n. the moving images that are seen in a recording or broadcast; a movie, television show, or event that has been recorded onto a videocassette, DVD, or other media so that it can be watched on a television or computer screen. Dad created a video of our vacation to Alaska.

visitation – n. an official visit by an important person, especially to look at or inspect something; the act of visiting your children or the right to visit your children after you are divorced and while they are living with the other parent. Both parents agreed to mutually-beneficial terms for visitation of the children.

visual – adj. relating to seeing or to the eyes. Most students are visual learners, so teachers often use projectors or other visual media to accommodate.

-ward, -wise, -ly: in the direction or manner of Suffix

otherwise – adv. in a different way or manner; if something did not happen or was not true; if not; or else. Mrs. Erwin showed us a shortcut to the math problem that would otherwise take us hours to figure out.

forward – adv. toward the front. Walk eight steps forward, and you should see the door on your right.

directly – adv. in a direct way; without delay. The suspect refused to answer questions directly.

originally – adv. in the beginning; when something first happened or began; in a new, fresh, or unique way. We originally planned to go to Hawaii this summer, but we are going to Florida instead.

occasionally – adv. sometimes but not often. School occasionally dismisses at noon.
Activity 1
Understand Words
Write the vocabulary word for each definition below.

__________ toward the front

__________ sometimes but not often

__________ in the beginning; when something first happened or began; in a new, fresh, or unique way

__________ in a direct way; without delay

__________ in a different way or manner; if something did not happen or was not true; if not; or else

__________ relating to seeing or to the eyes

__________ official visit by an important person, especially to look at or inspect something; the act of visiting your children or the right to visit your children after you are divorced and while they are living with the other parent

__________ impossible to see; not visible

__________ to broadcast something by television

__________ the moving images that are seen in a recording or broadcast; a movie, television show, or event that has been recorded onto a videocassette, DVD, or other media so that it can be watched on a television or computer screen
Rewrite Definitions

Reread the definitions and sentence examples for each word. Then, write your own definition for each word that contains no more than five words and uses the root or suffix meaning as part of the definition.

invisible: _______________________________________

televise: _______________________________________

video: _________________________________________

visitation: ______________________________________

visual: _________________________________________

otherwise: ______________________________________

forward: _______________________________________

directly: _______________________________________

originally: _____________________________________

occasionally: ___________________________________
Crossword Puzzle

Read the abbreviated definitions and complete the puzzle.

Across

2) impossible to see
6) moving images
7) without delay
8) not often
10) different manner

Down

1) beginning
3) about seeing
4) official visit
5) broadcast by television
9) front
Which Word Does Not Belong?
Choose the word that is not related to the vocabulary word given.

11. Invisible
   Hidden
   Delete
   Unseen
   Imperceptible

12. Televise
   Television
   Air
   Sports
   Transmit

13. Video
   Moving
   Pictures
   Film
   Antenna

14. Visitation
   Together
   Boundary
   Chat
   Meet

15. Visual
   Group
   Vision
   Eyes
   See
C. Synonyms or Antonyms?

16. otherwise/if not
   Synonyms
   Antonyms

17. forward/progressing
   Synonyms
   Antonyms

18. directly/straight
   Synonyms
   Antonyms

19. originally/initially
   Synonyms
   Antonyms

20. occasionally/frequently
   Synonyms
   Antonyms

ACTIVITY 3

A. Fill in the Blanks: Read each sentence and choose the word that best fits the sentence.

Invisible
Televise
Video
Visitation
Visual

Otherwise
Forward
Directly
Originally
Occasionally

1. Just because a greater power is ____________________, does that mean it doesn’t exist?

2. The most popular media for ________________ in the 80s was VHS.

3. Mrs. Jacobsen stared ____________________ at the boy as she chastised him.

4. The mother was granted sole custody with chaperoned ____________________ only from the father.

5. “Do you have a ____________________ of the suspect?”

6. “__________________, I am from Sudan, but I have lived here for over 30 years.”
7. It seems that they are going to ________________ all of the court proceedings for his case.

8. Recess is ________________ held inside due to rain.

9. The traffic jam finally began to clear, and I was relieved just to be moving ________________ again!

10. The party will be held on Christmas Eve; ________________ we would have to wait until the weekend.

B. True or False

Read each statement. If the bold word is used properly in the sentence, circle the T for true. If the bold word is used incorrectly in the sentence, circle the F for false.

11. The police followed the invisible trail right to the thief’s home.
   a. True
   b. False

12. Margie heard that they plan to televise the school play on a local station.
   a. True
   b. False

13. The computer monitor was completely blank after the dog chewed through the video wires.
   a. True
   b. False

14. The children practice visitation in the gym over the summer.
   a. True
   b. False

15. We made visual contact through the telephone.
   a. True
   b. False

16. Jezabelle wants to plant two trees in the forward of the house.
   a. True
   b. False

17. Marcey received an otherwise bracelet for Christmas.
   a. True
   b. False

18. If you have a problem with a friend, talk with them directly.
19. The painting was **originally** displayed in a prestigious art gallery.
   a. True
   b. False

20. Mason **occasionally** plays video games; he’s addicted.
   a. True
   b. False

**ACTIVITY 4**

**A. Fill in the Blanks**

Change the form of the vocabulary words below to fill in the table.

<table>
<thead>
<tr>
<th></th>
<th>noun</th>
<th>verb</th>
<th>adjective</th>
<th>adverb</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>visitation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>televise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>x</td>
<td>originally</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>x</td>
<td>occasionally</td>
</tr>
<tr>
<td>5</td>
<td>x</td>
<td></td>
<td></td>
<td>directly</td>
</tr>
</tbody>
</table>

**B. Analogies**

Fill in the blanks using vocabulary words to complete the analogies.

6. reveal :: visible
decieve ::

7. peanut butter :: jelly
audio ::

8. hear :: auditory
see ::

9. apart :: separation
together ::

10. diversely :: inversely
likewise ::

**C. Using Root Words**
Write a vis/vid word for each description below.

11. _______________ imagine as a future possibility
12. _______________ the state of being able to see or be seen
13. _______________ a screen for protecting the eyes from unwanted light
14. _______________ the expression that your face can make
15. _______________ observe and direct the execution of a task
16. _______________ plain or obvious
17. _______________ body of facts, used to prove a theory
18. _______________ reconsider; make corrections
19. _______________ make from whatever is available
20. _______________ offer suggestions or recommend something

VOCAB TEST

A. Matching Definitions

Write the letter of the vocabulary word for each definition below.

1. ____ impossible to see; not visible
   a. invisible
   b. televise
   c. video
   d. visitation
   e. visual
   f. otherwise
   g. forward
   h. directly
   i. originally
   j. occasionally

2. ____ to broadcast something by television

3. ____ in the beginning; when something first happened or began; in a new, fresh, or unique way

4. ____ the moving images that are seen in a recording or broadcast; a movie, television show, or event that has been recorded onto a videocassette, DVD, or other media so that it can be watched on a television or computer Screen

5. ____ in a direct way; without delay

6. ____ in a different way or manner; if something did not happen or was not true; if not; or else
7. _____ relating to seeing or to the eyes

8. _____ official visit by an important person, especially to look at or inspect something; the act of visiting your children or the right to visit your children after you are divorced and while they are living with the other parent

9. _____ toward the front

10. _____ sometimes but not often

B. Antonym

Choose the antonym for each word below.

11. Otherwise
   a. Alternately
   b. Likewise
   c. Because
   d. Sometimes

12. Forward
   a. Straight
   b. Narrow
   c. Backward
   d. Rear

13. Directly
   a. Ambiguous
   b. Explicit
   c. Sincere
   d. Straightforward

14. Originally
   a. First
   b. Forthright
   c. Unique
   d. Secondarily

15. Occasionally
   a. Regularly
   b. Seemingly
   c. Sporadically
   d. Frequently
C. Synonyms

Choose the synonym for each word below.

16. Invisible
   a. Hindered
   b. Undetectable
   c. Seen
   d. Microscopic

17. Televises
   a. Transmit
   b. Suppress
   c. Conceal
   d. Show

18. Video
   a. Images
   b. File
   c. Preserve
   d. Program

19. Visitation
   a. Socialize
   b. Vacation
   c. Go
   d. Access

20. Visual
   a. Annoyed
   b. Observable
   c. Invisible
   d. Imagined

D. Fill in the Blank Sentences

Read each sentence and choose the word from the bank that best fits the sentence.

<table>
<thead>
<tr>
<th>Invisible</th>
<th>Televises</th>
<th>Video</th>
<th>Visitation</th>
<th>Visual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Otherwise</td>
<td>Forward</td>
<td>Directly</td>
<td>Originally</td>
</tr>
</tbody>
</table>

21. Graphs, charts, and other _______ aids make data easier to read.

22. _________, understanding date can be cumbersome and tedious.

23. I sure hope they _________ that soccer game tonight.
24. Since the hurricane made landfall 60 miles east of us, we were not _________ affected.

25. Collette used her new PC to create a promotional _________ for the company.

26. These walls were _________ wallpapered, but we stripped them and painted after we moved in.

27. Have you ever used lemon juice as _________ ink?

28. The new mayor laid out his plans to keep the city moving _________.

29. Fortunately, I only have to work on weekends _________.

30. The White House keeps very strict and detailed _________ logs.
<table>
<thead>
<tr>
<th>Book Title(s)</th>
<th>Date</th>
<th>Parent Initials</th>
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</tbody>
</table>
# Writing Task Menu

Please choose one or more of these tasks to complete. You do not need to complete all of them. You will write and create for 20 minutes each day. If you complete a task choose a new one to work on.

<table>
<thead>
<tr>
<th>Expert Book</th>
<th>Sequel or Series</th>
<th>Your Fantasy</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are you an expert on? Soccer, ice cream, Pokemon, baking? Create a book that shares your knowledge with your reader. Your book should include chapters with written facts and visuals. Feel free to type, write, or create a Google Slides Presentation.</td>
<td>Read a good book lately? Write the sequel! Be sure to use basic plot structure. Your story should have characters who face challenges, and a clear beginning, middle, and end. Option: Create a series of short children’s books featuring the same main character.</td>
<td>Create your fantasy world! Write a story where you are the main character in your own fantasy world. What challenges will you face? What problems can you solve? Be creative and have fun.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Book Commercial</th>
<th>Animal Research Report</th>
<th>Plastic Persuasion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watch the Reading Rainbow Video: <a href="https://www.youtube.com/watch?v=MQG6AR5diPw">https://www.youtube.com/watch?v=MQG6AR5diPw</a> Create your own book commercial. Write a script and record yourself reading it. Share your love of literature!</td>
<td>Write a report about any animal you choose. Include facts about their habitat, diet, body parts, and life cycle. You may write a report or create a book, or slide show. Be sure to include lots of pictures and visuals.</td>
<td>Watch the TedEd Video: <a href="https://www.ted.com/talks/emma_bryce_what_really_happens_to_the_plastic_you_throw_away#t-231958">https://www.ted.com/talks/emma_bryce_what_really_happens_to_the_plastic_you_throw_away#t-231958</a> Write a speech or create a poster, presentation or commercial that helps others understand how important it is to recycle plastic!</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comic Creator</th>
<th>Hero’s Journey</th>
<th>Bedtime Debate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create your own graphic novel or comic. Use mainly dialogue to tell a story that has a clear beginning, middle, and end. Check out this link for lots of fun tips, including how to create your own comic book paper! <a href="https://www.youtube.com/watch?v=R-PZRngfcQ">https://www.youtube.com/watch?v=R-PZRngfcQ</a></td>
<td>Watch the TedEd Video: <a href="https://www.ted.com/talks/matthew_winkler_what_makes_a_hero#t-80589">https://www.ted.com/talks/matthew_winkler_what_makes_a_hero#t-80589</a> Create your own hero and write a story that tells their journey. Try to include all of the elements of a hero’s journey that the video introduces.</td>
<td>Watch the Video: <a href="https://www.youtube.com/watch?v=_aAmaCeq9v4">https://www.youtube.com/watch?v=_aAmaCeq9v4</a> What do you think your ideal bedtime is? Use facts from the video to support your thinking. Share your thoughts with your parents! Remember kids need 10-12 hours of sleep each night.</td>
</tr>
</tbody>
</table>
Each worksheet is in lieu of 1 class period of lesson. There are 10 total worksheets, thus making up 10 days of lessons. Do in order.

This is all review material, from last semester and before.

Mr. Wiese
Math 7
# Order of Operations Worksheet

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1 a.</td>
<td>3 × 5 × 6 − 20</td>
<td>1 b.</td>
<td>8 × 4 + 47 − 28</td>
</tr>
<tr>
<td>2 a.</td>
<td>7 × 5 + 31 + 1</td>
<td>2 b.</td>
<td>4 × 2 × 8 × 6</td>
</tr>
<tr>
<td>3 a.</td>
<td>2 × 6 + 37 + 29</td>
<td>3 b.</td>
<td>4 + 32 × 4 × 8</td>
</tr>
<tr>
<td>4 a.</td>
<td>3 × 5 + 16 × 3</td>
<td>4 b.</td>
<td>36 + 32 + 45 × 6</td>
</tr>
<tr>
<td>5 a.</td>
<td>5 × 6 ÷ 1 + 26</td>
<td>5 b.</td>
<td>4 + 43 × 2 − 7</td>
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</tr>
<tr>
<td>6a. $8 \times 7 \times 7 \times 5$</td>
<td>6b. $24 + 24 + 23 + 11$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7a. $8 \times 4 \times 8 - 32$</td>
<td>7b. $32 + 23 - 26 + 26$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8a. $19 + 47 - 48 + 6$</td>
<td>8b. $49 - 6 \times 5 - 11$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9a. $96 + 1 \times 3 + 28$</td>
<td>9b. $7 \times 5 + 7 + 28$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10a. $7 \times 7 \times 2 - 5$</td>
<td>10b. $7 \times 4 + 2 + 41$</td>
<td></td>
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</tr>
</tbody>
</table>
### Answer Key

<p>| | | | | | | | | | |</p>
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</thead>
<tbody>
<tr>
<td>1 a.</td>
<td>70</td>
<td>1 b.</td>
<td>51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 a.</td>
<td>66</td>
<td>2 b.</td>
<td>384</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>3 a.</td>
<td>78</td>
<td>3 b.</td>
<td>1028</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>4 a.</td>
<td>63</td>
<td>4 b.</td>
<td>338</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5 a.</td>
<td>56</td>
<td>5 b.</td>
<td>83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 a.</td>
<td>1960</td>
<td>6 b.</td>
<td>82</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7 a.</td>
<td>224</td>
<td>7 b.</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8 a.</td>
<td>58</td>
<td>8 b.</td>
<td>8</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>9 a.</td>
<td>316</td>
<td>9 b.</td>
<td>33</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>10 a.</td>
<td>93</td>
<td>10 b.</td>
<td>71</td>
<td></td>
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</tbody>
</table>
Think back to the Distributive Property Combo Meals on pg. 31. The distributive property was a method to organize your orders: 3(2F + 1B + 4C). The 3 represents the number of GROUPS/COMBO MEALS. EVERYTHING ON THE INSIDE OF THE PARENTHESES IS CONTAINED IN THAT ONE GROUP!

To determine how many TOTAL food/drink items you would be receiving you need to distribute/multiply the number of groups (3) by EVERYTHING that is contained in the group (2F + 1B + 4C).

$$3(2F + 1B + 4C) = 3 \times 2F + 3 \times 1B + 3 \times 4C = 6F + 3B + 12C$$

The result of ordering 3 of these combos is: 6 fries, 3 burgers and 12 cokes.

F – Fries   C – Coke   B – Burger   M – McCafe   N – Nuggets

Try these below. Draw the arrow to EACH of the terms, show the multiplication and state the order (as down above).

1. \(2(1B + 1C + 1F) = \)

2. \(3(4C + 1B) = \)

3. \(5(2N + 2C + 1M) = \)

4. \(2(1N + 1B + 3F) = \)

5. \(2(2C + 3B) = \)

Try these, the rules are the same, but in a different format.

6. \((3B + 1C)2 = \)

7. \(5(1B + 3M) + 2(1F + 1M) = \)

8. \(2(1F + 2C – 1C) = \)

9. \(-3(-1B + [-2F] + [-2M] + [-4C]) = \)
Order of Operations Worksheet

Solve in the correct order.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 a.</td>
<td>( \frac{(1 + 2)^2}{7} )</td>
<td>1 b.</td>
</tr>
<tr>
<td>2 a.</td>
<td>( 3 - \frac{6 \cdot 1}{6} )</td>
<td>2 b.</td>
</tr>
<tr>
<td>3 a.</td>
<td>( \frac{8 - 9 \cdot 1}{10} )</td>
<td>3 b.</td>
</tr>
<tr>
<td>4 a.</td>
<td>( 2 + 5^2 \cdot 6 )</td>
<td>4 b.</td>
</tr>
<tr>
<td>5 a.</td>
<td>( 10 - \frac{5^2}{5} )</td>
<td>5 b.</td>
</tr>
<tr>
<td>6 a.</td>
<td>( 8 \cdot (3 - 2)^3 )</td>
<td>6 b.</td>
</tr>
</tbody>
</table>
**Answer Key**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 a.</td>
<td>1 2/7</td>
<td>1 b.</td>
</tr>
<tr>
<td>2 a.</td>
<td>2</td>
<td>2 b.</td>
</tr>
<tr>
<td>3 a.</td>
<td>-1/10</td>
<td>3 b.</td>
</tr>
<tr>
<td>4 a.</td>
<td>152</td>
<td>4 b.</td>
</tr>
<tr>
<td>5 a.</td>
<td>5</td>
<td>5 b.</td>
</tr>
<tr>
<td>6 a.</td>
<td>8</td>
<td>6 b.</td>
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</table>
**Rounding, Distributive Property & Area of Composite Figures Homework**

Due Friday 11/8  
Name: ____________________

Round the following numbers to the stated place value

<table>
<thead>
<tr>
<th></th>
<th>Ones</th>
<th>Tenths</th>
<th>Thousandths</th>
<th>Hundred Thousands</th>
<th>One Millions</th>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>59.14597</td>
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<td></td>
</tr>
<tr>
<td>6</td>
<td>0.0140815</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>125783</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>4.91</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>9</td>
<td>45108.5893659725</td>
<td></td>
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<tr>
<td>10</td>
<td>752283.0</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>483.521</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>0.04582847</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use the distributive property to re-write these expressions

\[3(2F + 1B + 4C) = 3 \times 2F + 3 \times 1B + 3 \times 4C = 6F + 3B + 12C\]

The result of ordering 3 of these combos is: 6 fries, 3 burgers and 12 cokes.

F – Fries      C – Coke      B – Burger      M – McCafe      N – Nuggets

Try these below. **Draw the arrow to EACH of the terms, show the multiplication and state the order (as done above).**

13. \(2(6B + 3C + 2F) = \)

14. \(3(5C + 10B + 4F) = \)

7. \(5(1B + 3M) + 2(1F + 1M) = \)

3. \(-2[-2F + (-4C) + (-1C)] = \)

Compound Shapes

Find the area of each figure, round your answer to one decimal place if necessary.

1) 
   6 yd
   8 yd
   4 yd

   Area: 

2) 
   8 cm
   14 cm

   Area: 

3) 
   14 ft
   7 ft

   Area: 

4) 
   40 in
   4 in
   24 in
   4 in
   24 in

   Area: 

5) 
   3 m
   3 m
   6 m

   Area: 

6) 
   60 yd
   60 yd
   100 yd

   Area: 

7) 
   18 cm
   9 cm
   18 cm

   Area: 

8) 
   6 m
   4 m
   4 m
   7 m

   Area: 

9) 
   20 in
   20 in
   40 in
   10 in

   Area: 

Math-Aids.Com
Converting to and from Fractions and Decimals AND Additive Inverse Homework

Name: ______________________

**DECIMAL PLACE VALUE CHART**

<table>
<thead>
<tr>
<th>One Millions</th>
<th>Hundred Thousands</th>
<th>Ten Thousands</th>
<th>One Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
<th>Decimal point</th>
<th>Tenths</th>
<th>Hundredths</th>
<th>One-Thousands</th>
<th>Ten-Thousands</th>
<th>Hundred-Thousandths</th>
<th>One-Millionths</th>
</tr>
</thead>
</table>

Convert the following to a fraction or decimal (for decimals that repeat, use the line above the repeating decimal)

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2.</td>
<td>3.</td>
<td>4.</td>
<td>5.</td>
</tr>
<tr>
<td>5.</td>
<td>0.5002</td>
<td>7.</td>
<td>8.</td>
<td>32.147</td>
</tr>
<tr>
<td>9.</td>
<td>.</td>
<td>10.</td>
<td>-0.01</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>-</td>
<td>17.</td>
<td>18.</td>
<td>0.01015</td>
</tr>
<tr>
<td>19.</td>
<td>4.209.1</td>
<td>20.</td>
<td>2.</td>
<td></td>
</tr>
</tbody>
</table>

**REWRITE THE FOLLOWING USING THE ADDITIVE INVERSE PROPERTY (PGS. 28-29), THEN SOLVE**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>21.</td>
<td>5 - 4</td>
<td>22.</td>
<td>11 - (-3)</td>
<td>23.</td>
</tr>
<tr>
<td>24.</td>
<td>-12 - (-12)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>7 - 4</td>
<td>26.</td>
<td>-10 - (-5)</td>
<td>27.</td>
</tr>
<tr>
<td>28.</td>
<td>-20 - (5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>19 - (-1)</td>
<td>30.</td>
<td>-1 - (1)</td>
<td>31.</td>
</tr>
<tr>
<td>32.</td>
<td>5 - 10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td>4 - 3 - 4</td>
<td>34.</td>
<td>-9 - (-2) - 3</td>
<td></td>
</tr>
<tr>
<td>35.</td>
<td>-20 - 1 - 1 - (-1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36.</td>
<td>15 - (-10) - 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16. 7 - (-7)</td>
<td>15. 1 - 4</td>
<td>14. 16 - (-10)</td>
<td>13. 11 - 20</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
<td>-----------</td>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>12. 5 - (-7)</td>
<td>11. 2 - 5</td>
<td>10. 4 - (-4)</td>
<td>9. 10 - 5</td>
</tr>
</tbody>
</table>

Use the **Additive Inverse Property** to rewrite the following problems and then solve.

<table>
<thead>
<tr>
<th></th>
<th>8. 0.01 x 10</th>
<th>7. 0.54 x 62</th>
<th>6. 3.19 x 8.0</th>
<th>5. 6.78 x 4.01</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4. 2.01 x 2</td>
<td>3. 1.32 x 1.4</td>
<td>2. 0.1 x 1.49</td>
<td>1. 2.3 x 0.21</td>
</tr>
</tbody>
</table>

**Name**

*Multiplying with Decimals, Additive Inverse & Adding/Subtracting Integers*
<table>
<thead>
<tr>
<th>Solution</th>
<th>Column B</th>
<th>Column A</th>
<th>Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>= (I_10^-) + 4^-</td>
<td>= 6 - 8^-</td>
<td>18</td>
</tr>
<tr>
<td>17</td>
<td>= (I_17^-) - 7^-</td>
<td>= (I^-) + (I_1^-) - 10^-</td>
<td>17</td>
</tr>
<tr>
<td>16</td>
<td>= 4^- - 4^-</td>
<td>= (4^-) - 16^-</td>
<td>16</td>
</tr>
<tr>
<td>15</td>
<td>= (6^-) + 2^+ + 4^-</td>
<td>= (5^-) + 3^-</td>
<td>15</td>
</tr>
<tr>
<td>14</td>
<td>= (2^-) - 13^-</td>
<td>= (9^-) + 5^-</td>
<td>14</td>
</tr>
<tr>
<td>13</td>
<td>= (4^-) + 2^-</td>
<td>= (6^-) - 7^-</td>
<td>13</td>
</tr>
<tr>
<td>12</td>
<td>= 6 - 6^-</td>
<td>= (10^-) + 8 - 3</td>
<td>12</td>
</tr>
<tr>
<td>11</td>
<td>= (3^-) - 7^-</td>
<td>= (15^-) + 11</td>
<td>11</td>
</tr>
<tr>
<td>10</td>
<td>= (6^-) + (1^-) - 4</td>
<td>= 8 - 4</td>
<td>10</td>
</tr>
<tr>
<td>9</td>
<td>= 8 + 10^-</td>
<td>= (1^-) + 1^-</td>
<td>9</td>
</tr>
<tr>
<td>8</td>
<td>= (I_17^-) - 1^-</td>
<td>= (10^-) - 9^-</td>
<td>8</td>
</tr>
<tr>
<td>7</td>
<td>= 8 - 3</td>
<td>= 5 + 10^-</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>= (2^-) + 8^-</td>
<td>= (10^-) - 11 - 11 - 9^-</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>= 2^- -(I^-) - 7^-</td>
<td>= 8 + 16^-</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>= 5 - 10^-</td>
<td>= (6^-) + 4</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>= (2^-) + 25</td>
<td>= (I_11^-) - 10^-</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>= (I^-) - 10^-</td>
<td>= 0 - (4^-) + 4^-</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>= 5 - 10^-</td>
<td>= 13 - 18</td>
<td>1</td>
</tr>
</tbody>
</table>

Solve each problem and ensure they have the same answer.
Adding/Subtracting with Integers & Absolute Value REVIEW

<table>
<thead>
<tr>
<th>+</th>
<th>-15</th>
<th>3</th>
<th>-19</th>
<th>-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>-</th>
<th>-15</th>
<th>7</th>
<th>-20</th>
<th>-2</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What are integers? Explain in your own words and provide at least 2 examples.

Solve the following absolute value problems:

1. \(|-2| + |-8|\) 
2. \(|-19 + 6| + 4 - 5\) 
3. \(5 + |-8 + (-8)| - |2|\)

4. \(|-18 + 11 - 1| + |4 + 3|\) 
5. \(|-1| + |-11| - 13|\)
Rounding & Distributive Property Homework

Name: ____________________

Round the following numbers to the stated place value

<table>
<thead>
<tr>
<th>DECIMAL PLACE VALUE CHART</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Millions</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>1. 18.542 Ones</td>
</tr>
<tr>
<td>4. 1.092 Tenths</td>
</tr>
<tr>
<td>7. 125783 Hundreds</td>
</tr>
<tr>
<td>10. 752283.0 Ten Thousands</td>
</tr>
</tbody>
</table>

Use the distributive property to re-write these expressions

\[ 3(2F + 1B + 4C) = 3 \times 2F + 3 \times 1B + 3 \times 4C = 6F + 3B + 12C \]

The result of ordering 3 of these combos is: 6 fries, 3 burgers and 12 cokes.

F – Fries  C – Coke  B – Burger  M – McCafe  N – Nuggets

Try these below. Draw the arrow to EACH of the terms, show the multiplication and state the order (as done above).

13. \( 2(6B + 3C + 2F) = \) 

14. \( 3(5C + 10B + 4F) = \) 

7. \( 5(1B + 3M) + 2(1F + 1M) = \) 

3. \(-2[-2F + (-4C) + (-1C)] = \) 

1) (+4) + (-4) =  

2) (+2) + (+5) =  

3) (+4) + (+5) =  

4) (-7) + (+1) =  

5) (-6) + (-5) =  

6) (-5) + (-4) =  

7) (-2) + (0) =  

8) (-7) + (0) =  

9) (+6) + (0) =  

10) (-7) + (0) =  

11) (+7) + (-1) =  

12) (+3) + (+3) =  

13) (-9) + (+5) =  

14) (+8) + (-1) =  

15) (+9) + (-2) =  

16) (-8) + (+5) =
Order of Operations

1) \((13 + 17) ÷ (15 - 5)\)

2) \((13 - 3) + 15 ÷ 3\)

3) \((13 + 41 - 6) ÷ 16\)

4) \((15 + 5) + 20 ÷ 5\)

5) \((10 + 40) ÷ (12 - 2)\)

6) \((10 + 22 - 2) ÷ 3\)

7) \(2 \times 4 \times (2 - 2)\)

8) \((13 + 6) \times 9 + 3\)

9) \(10 \times 9 \times (4 + 8)\)

10) \((20 - 6) \times 14 - 4\)
1. What are the two criteria for a relationship to be proportional?

2. The following graphs show examples of relationships that are not proportional. For each graph, explain what makes the relationship different from the proportional relationships you have studied.

3. Sketch an example of a proportional graph. Ensure you have your graphs scaled and labeled correctly. Create the proportional table that corresponds with the graph you created.

   STATE WHAT MAKES YOUR GRAPH/TABLE PROPORTIONAL.

4. Find and state the constant of proportionality/unit rate for each of the tables below.

   (Check the ratio in the form of \( y = mx \). Then simplify!)

<table>
<thead>
<tr>
<th>X</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>X</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>40</td>
</tr>
<tr>
<td>-6</td>
<td>24</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>-2</td>
<td>8</td>
</tr>
<tr>
<td>-1</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>X</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>-22</td>
<td>-11</td>
</tr>
<tr>
<td>9</td>
<td>4.5</td>
</tr>
<tr>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

5. Identify the constant of proportionality/unit rate from each equation.

   a. \( y = 10x \)  
   b. \( y = -2x \)  
   c.  
   d.  
   e.  
5. Determine the unit rate/constant of proportionality from the following graphs. Remember, the y value over the corresponding x value.

7. Anthony earns $5.23 for each half hour that he works. How much money does he earn during a given amount of time?

1. Determine the unit rate/constant of proportionality (dollars per one hour).

2. Represent this situation using a table

<table>
<thead>
<tr>
<th>Hours Worked</th>
<th>0</th>
<th>0.5</th>
<th>1.0</th>
<th>1.5</th>
<th>2.0</th>
<th>2.5</th>
<th>3.0</th>
<th>3.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money Earned</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. How can you find the unit rate/constant of proportionality from a table?

4. How can you use a table to determine if a relationship is proportional?

3. A shirt costs $18.50. How much will it cost with a 50% off coupon?

9. Darrius ran 9 miles in 1.5 hours. How far can he run in a given amount of time, if he runs at a constant rate?

a. Determine the unit rate/constant of proportionality (distance per one hour).
10. Find the unit rate of each item to determine which one is the better deal.

<table>
<thead>
<tr>
<th>Option 1</th>
<th>Vs.</th>
<th>Option 2</th>
<th>Which is the better deal?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sargento Cheese Slices</td>
<td>Vs.</td>
<td>Velveeta Cheese Slices</td>
<td></td>
</tr>
<tr>
<td>$2.48 for 10 Slices</td>
<td></td>
<td>$3.18 for 12 Slices</td>
<td></td>
</tr>
<tr>
<td>Unit Rate: $________ per slice</td>
<td></td>
<td>Unit Rate: $________ per slice</td>
<td></td>
</tr>
<tr>
<td>Oreo</td>
<td>Vs.</td>
<td>Chips Ahoy</td>
<td></td>
</tr>
<tr>
<td>$2.98 for 15.5oz</td>
<td></td>
<td>$2.50 for 14oz</td>
<td></td>
</tr>
<tr>
<td>Unit Rate: $________ per ounce</td>
<td></td>
<td>Unit Rate: $________ per ounce</td>
<td></td>
</tr>
<tr>
<td>Doritos</td>
<td>Vs.</td>
<td>Cheetos</td>
<td></td>
</tr>
<tr>
<td>$4.39 for 11.5oz</td>
<td></td>
<td>$2.24 for 9.75oz</td>
<td></td>
</tr>
<tr>
<td>Unit Rate: $________ per</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toyota Prius</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>234 miles for 4.5 gallons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junit Rate:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honda Insight</td>
<td>Vs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>306 miles for 6 gallons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit Rate:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11.

a. Find 12% of 18           
b. Find 80% of 64           
c. Find 99% of 115
1. What is 10% more than 30?
2. What is 73% less than 60?
3. What is the percent mark-up from $17.50 to $25?
4. What is 52% more than 210?
5. What is 4.5% less than 20?
6. What is the percent mark-down from $50 to $37.50?
7. What is 37.5% more than 92?
8. What is 50% less than 42?
9. What is 12% to 64 (decrease)
10. What is the percent growth from 150 to 500?

12. A game costs $47.60. Tax is 7.5%. How much is the total cost?

13. Determine the percent increase/decrease

a. 48 to 96 (increase)
b. 18 to 63 (increase)
c. 21 to 15 (decrease)
d. 128 to 64 (decrease)
e. 54 to 18 (decrease)
f. 12 to 15 (increase)
Classify each angle as acute, obtuse, right, or straight.

1)  

2)  

3)  

4)  

5)  

6)  

7)  

8)  

9)  

10)  

11) 43°  

12) 180°  

13) 19°  

14) 117°  

15) 176°  

16) 79°  

17) 90°  

18) 116°  

19) 112°  

20) 39°
Find the missing angle measurement in each set of complementary angles.

1) Angle = ______

2) Angle = ______

3) Angle = ______

4) Angle = ______

5) Angle = ______

6) Angle = ______

7) Angle = ______

8) Angle = ______

9) Angle = ______

10) Angle = ______

11) Angle = ______

12) Angle = ______

13) Angle = ______

14) Angle = ______

15) Angle = ______
Caves Science 7 Independent Study

Part 1: Use the Orange Earth Science textbook to:
1. Read Chapter 7.
2. Do the section reviews for each section
3. Do the Chapter review
4. Read Chapter 8
5. Do the section reviews for each section
6. Do the chapter review.

Part 2: Disaster report
1. Chose a famous volcanic eruption or earthquake event, and research it
2. Describe the tectonic event (what boundary caused it? Where is it? What kind/size was it?)
3. Describe the event itself (When? what happened?)
4. Describe how we can be better prepared for similar disasters in the future
5. Present your findings in a slideshow or written report

Stay Safe! Be healthy!
PHYSICAL EDUCATION
Independent Study Work

Student Name: _________________________________

Dates of Absence: _______________________________

Activity Log Directions:
1. Please use a piece of clean 8.5 x 11 paper for the activity log.
2. You will need to make a log for each day of absence (can put as many log on one paper as will fit)
3. Include (2 points for each)
   a. Student Name / Period
   b. Date of Absence
   c. Describe the Activity
   d. How long you did activity
   e. What fitness component it addressed and why/how

ACE Paragraph Directions
1. Use a 8.5 x 11 paper (different than activity log)
2. Read the attached article:
   “The Tremendous Benefits of Physical Education in Schools”
3. Write an ACE paragraph on the benefits of physical education in school
   (minimum 100 words)
THE TREMENDOUS BENEFITS OF PHYSICAL EDUCATION IN SCHOOL

Physical education (PE) is the most powerful (and unappreciated) ‘medicine’ for present and future health issues. For the body, mind and spirit. When you look at the section below and some of the quotes from respected world organizations, you can see why we say nothing is better than physical education. Physical education in schools captures everyone and not those who want to be active. It teaches great life and health lessons. Putting it simply, PE conditions a child to be more active and healthy adults.

However, there are trends around the world which are disturbing. UNESCO states, “physical education is in decline across all world regions”. In the USA, the average school budget for PE is $764 per year. In other countries the value of quality PE is being challenged.

On the positive side, we have more and more evidence and research that physical education is the ultimate solution to producing a more healthy world... for a body, mind and spirit of humans. Look at the facts below. Physical education prepares children to be physically and mentally active, fit and healthy... for life. Here are some of the many benefits children receive from a quality PE program:

- Improved physical fitness
- Skill and motor skills development
- Provides regular, healthful physical activity
- Teaches self discipline
- Facilitates development of student responsibility for health and fitness
- Influence moral development, leadership, cooperate with others
- Stress reduction – an outlet for releasing tension and anxiety
- Strengthened peer relationships
- Physical education can improve self-confidence and self-esteem
- Respect - PE helps you respect your body, classmates and teammates
- Experience in setting goals
- Improved academics - The big bonus benefit!
UNESCO laid out 4 reasons - Physical literacy and civic engagement, academic achievement, inclusion, and health. We believe in these and are adding a few more:

1. Healthy For Life - Kids who have quality PE are taught life skills (see above) that can be used forever.
2. Reduced Healthcare Costs - We have more of a 'sick-care' system than healthcare. One of the best ways to prevent 'sick-care' expenses is to have real healthcare. PE is true healthcare and prevention. As been mentioned "Prevention is Better than a Cure".
3. Physical Education Captures Everyone - Recess is nice as are after school programs, but it only hits kids that want to be active. Physical education gets every child conditioned to live a healthy life.
4. It Is Harder To Condition Adults - Habits early in life are a lot easier than trying to "teach an old dog new tricks". Let's condition activity into every kids resources that then can use forever.
5. The Academic Payoff - The research and evidence is overwhelming. Kids who are active are better students period.

Look at the brain functioning after just 20 minutes of walking. Getting kids to move helps strengthen and stimulate their brains. This is why so many recent research studies are showing increased fitness = improved academics. Note: The blue color represents inactivity in the brain (Source: University of Urbana)

![After sitting quietly](#) ![After 20-minute walk](#)

John Ratey, an Associate Professor Psychiatry at Harvard University has stated, "Exercise is like Miracle-Gro for the brain." So, when anyone says we can't afford to have PE in our schools because it takes up too much time, please let them know of all the research which conclusively shows how exercise builds brain cells and improves academics. And, just by elevating your heart rate you can lift your mood, beat stress, sharpen your intellect, and function better.

Physical education is the grassroots program for all activity. Children with PE are 2-3 times more likely to be active outside of school. Adults who had PE in school are twice as likely to be active today.
Shields 7th Grade Social Science

Independent Study
Life in the Middle Ages: Women

The Medieval woman was very limited in how she lived her life. From the day she was born, she had a male who told her what she could and could not do. Marriages were usually “for convenience,” to gain land or property. Henry VII of England searched for a suitable wife after his first wife died and learned that the widow of the King of Naples was available. He sent three agents to find out if she was healthy, attractive, and had money. Their report indicated that she passed the first two qualifications, but failed the third. He remained a widower.

Sometimes, children were only 4 or 5 years old when they were married. The practice of arranging children’s marriages was so common that the church said children in the cradle could not be married. If a woman survived childhood without gaining a husband, her choices were to either get married or go to a convent.

In marriage, the husband ruled the family. On certain days, the wife was required to lie at the husband’s feet and beg his forgiveness for anything she had done or had failed to do. Then the children did the same at their parents’ feet. Wife beating was common, although some rules said that the beating should be “reasonable.” Still, women were important in family life, and in Italy they were a power in the family circle.

Women did much of the work during the Middle Ages. They worked in the fields, the same as the men. They spun cloth and made clothing for the family. Even upper-class girls were taught to spin. Women in Paris held a wide variety of jobs in trade and industry. When their husbands died, women continued to operate the businesses. It was said that in London women played an important part in the city’s trade.

While many women of the Middle Ages were as illiterate as their husbands and fathers, some education was available in a few places. One of the most famous love stories of the Middle Ages involved Heloise, who fell in love with her professor, Peter Abelard. Their romance cost him his job, and she was expelled from the University of Paris. Women were barred from attending that university after the scandal. However, women still attended Italian universities, and Maria di Novella became a math professor at the University of Bologna when she was 25 years old.

One of the outstanding women of the 13th century was Clare, daughter of a wealthy noble from Assisi. She heard St. Francis speak and decided to live in poverty. She started the order of Poor Clares, and all who joined vowed to live in absolute poverty. Her firmness was shown when the Saracens attacked the town, and she went to the walls; the Saracens were so impressed by her courage that they left the nuns alone. In the care that they took of patients at the convent hospital and their example of self-denial, the nuns made others aware of their own greed and self-centeredness.
CHALLENGES

1. What was meant by "marriages for convenience"?

2. Why did Henry VII lose interest in the widow of the King of Naples?

3. What rule did the church have about the earliest age for a boy and girl to be married?

4. What limit was there on wife beating?

5. What were two cities where women were important in trade?

6. Whom did Heloise fall in love with?

7. What happened at the University of Paris after Heloise was expelled?

8. Which woman was a professor at the University of Bologna?

9. What kind of family did Clare of Assisi come from?

10. What was the most important rule for the Poor Clares?
Life in the Middle Ages: Health

In 1524, Erasmus wrote a letter to a friend: "I often wonder and grieve to think why Britain has now been afflicted so many years with chronic pestilence, especially the Sweating Disease..." As we look at health during the Middle Ages, we are surprised that people somehow managed to live to be 30 or 40 years old, living and eating as they did. Cleanliness was not a big concern for them. Baths were taken once or twice a year at most. In castles, bath water and body waste were flushed out into the moat surrounding the castle. The meat people ate was often old and poorly cooked, and vegetables were boiled until little nutritional value was left.

Homes had very poor heating systems and were both cold and smoke-filled. Swiss homes were an exception, and travelers noted that there people did not need hats and coats when they were indoors. The poor had no floors in their houses, but even the rich put rubbish under their floors to insulate them. Straw was strewn to sleep on, and in time, it began to smell. Noxious odors in cities came from open sewers, piles of manure, and garbage tossed on the streets. Lice, flies, mosquitoes, ticks, bugs, spiders, mice, and rats spread diseases, and epidemics were common.

People had no knowledge of medicine and relied on superstition to save them. Gregory of Tours believed that God worked through his saints and trusted St. Martin to cure him. The dust from the saint's shrine solved his stomach problems. Licking the rail at St. Martin's tomb healed his sore tongue. To free a fishbone he had swallowed, Gregory rubbed his throat with a cloth that hung at the tomb. Such "remedies" were not uncommon.

Even when the person relied on "science," his physician was not often reliable. Physicians explained that there were four "humors": blood, phlegm, yellow bile, and black bile. Whenever the person's supply of any of these became too great or too small, he became ill. The doctor's cure involved restoring the balance. The leading medical university of Europe was at Salerno, and even there superstition was a major part of the curriculum. Students were informed that onions cured baldness. If a woman did not wish to have a child, she should wear a red ribbon around her head. However, some sound medical advice was also included. Students were told that eating and drinking should be done in moderation. Experiments began on cadavers (dead bodies) of animals and humans. However, performing surgery was beneath the dignity of a trained physician and was left to butchers and barbers.

The Byzantines were the first to develop hospitals. The first hospitals in the West were places for travelers and sick people to find shelter and food. In the 11th century, monks began to take care of the ill, but their main treatment was spiritual healing. Confession and communion were more part of the treatment than medicine. There were about 19,000 leprasaria (leper hospitals) in Europe in the 13th century.

The European lack of medical knowledge, overcrowded cities, and tolerance of rats was about to contribute to an astounding loss of life in the 14th century.

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Challenges

1. How often did people in Medieval times take baths?

2. How long did they live?

3. What impressed travelers about Swiss homes?

4. Where did people sleep?

5. What caused odors in cities?

6. How did Gregory of Tours solve his stomach problems?

7. What were the four "humors"?

8. Why were the four humors important to a person?

9. What was the cure for baldness?

10. What cure did monks have for the ill?
King John
Signs the
Magna Carta

For all of his brilliance in creating a justice system for England, Henry II had a blind spot when it came to family matters. He put his wife, Eleanor of Aquitaine, in prison, and she got revenge by stirring up their sons against Henry. Richard and John plotted with the French King Philip Augustus against Henry. Henry had never liked Richard, and of his sons, John was clearly the favorite. After Henry's death, Richard (the Lion Hearted) became king. While he added little to the monarchy, he did nothing to tear down the improvements that his father had made. In 1199, Richard died, and John succeeded him.

John was an evil man and violated nearly every principle of justice his father had created. He wanted his nephew's land; he stole it, and the nephew suddenly disappeared. He fell in love with a 12-year-old girl who was engaged to one of his vassals. John married her despite public protests. John had a bitter argument with the Pope and was excommunicated. That should have cost him all support, but he threatened to punish nobles if they obeyed the Pope. John locked up a noble lady and her son and then allowed them only a piece of raw bacon and uncooked oats to eat; they soon died. Stories spread about a Jew in Bristol who refused to pay a special tax. Each day a tooth was knocked out until he gave in on the eighth day. John's unpopularity among the common people was so great that the commoners began to look to the barons for relief.

The nobility were complaining even more than the commoners. They began to gather around Stephen Langton, the Archbishop of Canterbury, who openly criticized the king. John had pressured the barons to help him invade France; when most had refused to go, he hired professional soldiers (mercenaries) and raised taxes on the nobles to pay for them. The war went badly, and finally the nobles decided it was time to act.

On June 12, 1215, the barons rode out to a meadow along the Thames River called Runnymede and met King John. They brought a document with their demands on it, and after a week of debate, John put his seal to it (he did not know how to write). This document is known as the Magna Carta (the Great Charter). There were 63 points in it, many of which involved trivial subjects. However, there were major points as well. Every person was entitled to justice, and only those who knew the law and obeyed it should be made officials. The king was to refund illegally collected fines and grant a general pardon.

Two parts of the Magna Carta were especially important in the long run. The 12th article said there must be no tax levied unless by "common consent of our kingdom." This led to "no taxation without representation." The 39th article provided that no freeman could be tried except by the "lawful judgment of his peers." The only "freemen" were nobles, but out of this grew our jury system. Now, government was more limited in what it could do.
CHALLENGES

1. Who was Henry II's favorite son?

2. Who preceded John to the throne?

3. After John was excommunicated, what did he do?

4. Whom did the unhappy nobles turn to as a leader?

5. Why were the nobles especially unhappy with John in 1215?

6. What do the words *Magna Carta* mean?

7. How did the king "sign" the Magna Carta?

8. What qualities did the writers of the Magna Carta want in royal officials?

9. What modern phrase comes from the "common consent" clause?

10. What part of our legal system came from the "lawful judgment of his peers" clause?
The Beginnings of Parliament

We usually do not think of the Middle Ages as being a time when people were democratic, and they were not. Absolutism (unrestricted power) was much more in style. Yet, very slowly, the first tiny steps were being taken toward allowing groups rather than individuals to make decisions.

It was customary under feudalism for the lord to call in his vassals to discuss major problems or ask their permission to raise taxes. These meetings were not on a regular basis, and delegates were not chosen by elections to represent the people. Yet, some produced heated exchanges, with the vassals demanding changes. If the vassals had enough power, the lord had little choice except to agree to their terms.

In Anglo-Saxon England, a council called the Witan existed. It was made up of important leaders of the church and nobility; its purpose was to advise the king and sometimes to act as a court. The Norman invaders brought a similar group with them: the Magnum Concilium (the Great Council). It met three times a year, but was too large to accomplish much, so a smaller group was formed, the Curia Regis (the King's Court). The most important member of the court came to be the king's most important advisor, the "Chancellor." The Court's importance increased when it started handling the king's financial matters. Since a checkered cloth was used to count the money, the one in charge was called the Chancellor of the Exchequer.

In 1258, King Henry III gathered a "parliament" of important officials in London. "Parliament" was a French word meaning to "talk" or "discuss." This particular gathering has been called the "Mad (angry) Parliament." They were furious with the king for letting the Pope and Frenchmen have too much influence. The king was forced to approve the Provisions of Oxford, which placed government in the hands of the nobles. When he tried to back out of the agreement, Henry was captured by his most outspoken critic, Lord Simon de Montfort, in 1264. From then until his death, Henry became a "rubber stamp," approving whatever Lord Simon wanted.

Simon called Parliament together in 1265, and for the first time, citizens of towns, knights, barons, and high churchmen met. Kings could no longer ignore the people. From then on, the people's voices would be heard when laws were being considered.

Heir to the throne, Prince Edward, was also held hostage, but escaped and went on the Seventh Crusade. When he returned in 1274, he was crowned king. He knew that to keep power, he must appeal to public opinion. Faced with many problems—war with France and rebellions by the Welsh and Scots—Edward I convened the Model Parliament in 1295, saying that "common dangers should be met by measures agreed upon in common." High churchmen, nobles, and commoners met, but divided into two houses: the House of Lords and the House of Commons. Parliament would keep that form to the present day.
CHALLENGES

1. What is absolutism?

2. Why did lords have to call their vassals together?

3. Who belonged to the Anglo-Saxon Witan?

4. Why was the King's Court (Curia Regis) created?

5. What was the job of the Chancellor?

6. What official was associated with a checkered cloth?

7. What was the "Mad Parliament" angry about?

8. What happened to Henry III after Simon de Montfort captured him?

9. Why did Edward I convene the Model Parliament?

10. What are the two houses of Parliament?
Medieval Universities: Centers of Learning

In our time, going to college or a university is common, but there was a time, even in the United States, when colleges were scarce. Harvard, William and Mary, and Yale were the earliest colonial colleges, and their students got heavy doses of Latin and Greek. They were copying the style of English universities of their time, all following traditions of Medieval universities established centuries before. Note taking, lectures, and tests, followed by receiving a diploma and wearing a cap and gown, are present day reminders of those times.

Medieval universities started without a campus. A famous scholar would come to town, and students would come to learn from him. The students sat on the floor or on benches. The teacher lectured, and the students took notes. By the time the course was over, the student had a book full of notes which he either kept or sold to a new student. These notebooks were expensive, and students wrote home to ask their parents for more money. Some things never change! Lectures were all in Latin, and the area of Paris where students lived came to be called the “Latin Quarter.” Latin was the universal language of the educated, so no matter which country was the student’s homeland, he could converse with the others.

Students varied in qualities and character. Many were very serious and eager to learn. Others were troublemakers who took their university days as a time to party and enjoy life. Wealthy students lived far better than those from poor families, but some aid was available for the poor. Robert Sorbon gave money for a hall in Paris where 16 poor students could live free. The school that developed around that hall came to be the Sorbonne, one of the most famous universities in the world today.

The students in town were easily identified by their scholars’ gowns, and they often clashed with the local young people who thought they were snobs and foreigners. Students complained about the prices they were charged for food and lodging. To protect themselves, teachers and students formed guilds (like the craft guilds of the time). These were called universitas, meaning “all who belong to the guild.” In 1200, students in Paris had a fight with local police, and after some of the students were killed, they threatened to move elsewhere unless they were given the right to be free from local rule. The king gave them a charter saying they were responsible only to church law.

The two main universities at that time were at Paris (famous for its study of theology and philosophy) and Bologna in Italy (famous for its law school). Salerno was becoming famous for its study of medicine.

The young man who successfully passed all the tests was awarded a B.A. degree. If he continued his studies, he could earn an A.M. degree, the minimum requirement to be admitted to a teaching guild at the university level. Doctoral degrees were also conferred on those who could teach law, medicine, or theology. Other doors were open to a young man with university training in the church, government, law, or medicine. For the poor, it was one way to rise above their humble status in life.

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CHALLENGES

1. How did a Medieval university begin?

2. What language was used for university lectures?

3. What was the student section of Paris called?

4. What did Robert Sorbon do that made his name world famous?

5. What were common student complaints about their living conditions?

6. What did universitas mean?

7. What university became famous for its medical school?

8. What was the best university at which to study law?

9. What degree was granted to the student upon graduating?

10. What were some careers open to university graduates in the Middle Ages?
1. What was the purpose of Magna Carta? (p. 89, ¶2)

2. How did new farming methods contribute to the growth of medieval European towns? (p. 78, ¶2)

3. For which achievement is Charlemagne most remembered? (p. 54, ¶5)

4. What did medieval community life in western Europe center on? (p. 65, ¶1)

5. What event occurred as the result of the Seljuk Turks taking Jerusalem in 1076? (p. 162, ¶5)

6. What event in 1095 led Pope Urban II to call Christians to a religious war? (p. 161, ¶3)

7. Habeas corpus means that people cannot be held indefinitely in jail except... (p. 89, ¶1)

8. In addition to new farming methods, what was another reason for the growth of towns? (p. 78, ¶2)

9. Who would have been most likely to make the following statement? “I am traveling to Jerusalem to show God how sorry I am for having sinned. I pray we have a safe journey.” (p. 69, ¶1-2)

10. Define fief. (p. 56, ¶2; Glossary)

11. If you were a customer who bought shoes from a cobbler, what might a guild make sure of? (p. 79, ¶2-3)

12. What do medieval stone walls, castle moats, and knights’ armor have in common? (p. 58, ¶4)
13. What was a main goal of the Crusades? (p. 161, ¶1)

14. What was the overall purpose of the Christians in the Crusades? (p. 161, ¶2)

15. What action by an English king gave ordinary people a voice in government? (p. 89, ¶3)

16. What three architectural features were found on most cathedrals? (p. 71, ¶1-3)

17. Why is Jerusalem holy to the Muslims? (p. 162, ¶3)

18. What was one human activity that contributed to the spread of the bubonic plague? (p. 90, ¶2)

19. What was one of the biggest causes of disease in medieval towns? (p. 90, ¶4)

20. Define chivalry. (Glossary)

21. How did the plague make life harder for Jews in Europe? (p. 90, ¶5)

22. During the Middle Ages, what academic institutions grew out of cathedral schools? (p. 72, ¶3)

23. What were serfs required to do? (p. 56, ¶3)

24. What contributed to the growing body of Common law? (p. 83, ¶7)

25. How did the bubonic plague increase the power of the common people? (p. 91, ¶5)
7.6 Medieval Europe - Test

1. ______ How did new farming methods contribute to the growth of medieval European towns?
   A. People who lived in towns could start to raise their own food.
   B. Towns became less crowded as families moved to the country.
   C. Enough crops were grown to sell to people who lived in towns.
   D. Factories were set up in towns to make agricultural equipment.

2. ______ In addition to new farming methods, another reason for the growth of towns was the
   A. fall of the Roman Empire.
   B. revival of long-distance trade.
   C. technology to build stone walls.
   D. discovery of better medicines.

3. ______ For which achievement is Charlemagne most remembered?
   A. He declared war against England.
   B. He became the first Christian ruler.
   C. He united much of Europe.
   D. He taught his people to write.

4. ______ A king gave his most important lords fiefs, which were
   A. grants of land.
   B. large celebrations.
   C. war horses.
   D. market licenses.

5. ______ Serfs were required to
   A. grind their own grain at home.
   B. fight against the king's enemies.
   C. move to nearby cities and towns.
   D. stay on the land that they worked.

6. ______ What do medieval stone walls, castle moats, and knights' armor have in common?
   A. They were parts of a church's architecture.
   B. They were features of a manor house.
   C. They were forms of military technology.
   D. They were structures of medieval towns.

7. ______ Suppose a knight is known for his chivalry. What does that suggest about him?
   A. He fought with great skill.
   B. He owned a famous manor.
   C. He traveled to many countries.
   D. He followed a code of behavior.
8. ______ If you were a customer who bought shoes from a cobbler, a guild might help you by making sure that
   A. the business was in a home.
   B. the members paid their dues.
   C. the workers were paid fairly.
   D. the shoes were of good quality.

9. ______ Community life in western Europe during the Middle Ages centered on
   A. the school.
   B. the theater.
   C. the church.
   D. the town hall.

10. ______ Who would have been most likely to make the following statement? "I am traveling to Jerusalem to show God how sorry I am for having sinned. I pray we have a safe journey."
    A. a monk
    B. a priest
    C. a pilgrim
    D. a king

11. ______ Most Gothic cathedrals had all these features EXCEPT
    A. stained-glass windows.
    B. broad ditches called moats.
    C. arches called flying buttresses.
    D. roof sculptures called gargoyles.

12. ______ Why is Jerusalem holy to Muslims?
    A. They pray toward the city.
    B. Gabriel instructed them to honor it.
    C. Muhammad ascended to heaven there.
    D. It was the headquarters of the empire.

13. ______ What was a main goal of the Crusades?
    A. to teach Christians how to read
    B. to set up monasteries in Germany
    C. to take Jerusalem from the Muslims
    D. to spread Christianity to the Byzantines

14. ______ Which of the events below was a result of the following statement? "Seljuk Turks take Jerusalem!" (Palestine, 1076).
    A. Jews began to leave Palestine.
    B. Muslim leaders cut off trade with Christians.
    C. Byzantine forces made an alliance with Central Asia.
    D. Christians feared they could no longer visit the Holy Land.

15. ______ What event in 1095 led Pope Urban II to call Christians to a religious war?
    A. Many emperors asked for help.
    B. The Seljuk Turks sent ships to attack Rome.
    C. Vikings attacked parts of Europe from the north.
    D. Charlemagne asked to be crowned Holy Roman emperor.
16. _______ What was the overall purpose of the Christians in the Crusades?
   A. to gain control of Palestine
   B. to open a trade route to China
   C. to learn about Muslim innovations
   D. to capture Jerusalem from the Jews

17. _______ What was one human activity that contributed to the spread of the bubonic plague?
   A. bathing too often
   B. trading with Asia
   C. eating rotten food
   D. keeping mice as pets

18. _______ One of the biggest causes of disease in medieval towns was
   A. unsanitary conditions.
   B. poison in community wells.
   C. refusal to use herbal medicines.
   D. lack of care by family members.

19. _______ How did the plague make life harder for Jews in Europe?
   A. They had to move into the big cities.
   B. They got sick more than other people.
   C. They were often blamed for the disease.
   D. Their food was not always safe to eat.

20. _______ How did the plague increase the power of the common people?
   A. Sick people moved into the castles.
   B. By creating a shortage of workers, it raised wages.
   C. Lords were more likely to die from it.
   D. Monarchs accused lords of spreading it.

21. _______ In the Middle Ages, many universities grew out of
   A. pilgrimage sites.
   B. cathedral schools.
   C. Charlemagne’s court.
   D. convent schools.

22. _______ What was the purpose of Magna Carta?
   A. to make the Church weaker
   B. to give the king more power
   C. to strengthen common law
   D. to protect the rights of nobles

23. _______ What action by an English king gave ordinary people a voice in government?
   A. calling the Model Parliament
   B. putting a seal on Magna Carta
   C. issuing the Constitutions of Clarendon
   D. closing Canterbury Cathedral
24. ______ Habeas corpus means that people cannot be held indefinitely in jail except
   A. they want to.
   B. by the law of the land.
   C. the king orders it.
   D. the Church requests it.

25. ______ Common law developed out of a growing body of
   A. jury trials.
   B. royal edicts.
   C. decisions by royal judges.
   D. pronouncements by the pope.
Renaissance Italy – Map

Use the History Alive! textbook and the Internet* to complete this activity.
**Use a blue or black pen when labeling the geographic locations.**

1. Label and color the countries and islands below. Use different colors for each area.
   - Corsica (p. 458)
   - Italy (p. 458)
   - Sardinia (p. 458)
   - Sicily (p. 458)

2. Label all the seas and oceans. Color them blue.
   - Adriatic Sea (p. 458)
   - Mediterranean Sea (p. 458)
   - Tyrrhenian Sea (p. 458)

3. Label the following places. Include the name and the symbol.
   - Florence ● (p. 467)
   - Naples ● (p. 467)
   - Milan ● (p. 467)
   - Rome ⊗ (p. 467)
   - Genoa ● (p. 467)
   - Siena ● (p. 467)
   - Venice ● (p. 467)
   - Apennines Mts. ▲▲▲ (p. 458)

4. Trace and label the rivers.
   - Arno River (Ask teacher)
   - Po River (p. 458)
   - Tiber River (p. 458)

5. Draw and color Italy’s flag in the rectangle below.

Good News for the City of Florence, The Late Middle Ages

The messenger choked on the clouds of dust blown in his face. The red and gold colors of Florence that he wore were covered with a coat of dirt and grime. Yet the good news that he bore to his home city made him smile despite the grit in his teeth. The duke of Milan, Gian Galeazzo Visconti, was dead. For 17 years, the duke had used the great wealth of his territories to maintain diplomats, spy networks, and armies in order to conquer the independent Italian city-states. First, all of Lombardy yielded to him, then Genoa, Pisa, Perugia, Siena, and finally, Bologna. Now, only one important independent republic remained: Florence. Unfortunately for Visconti, as he advanced on Florence at the very height of his power, with most of Italy lying at his feet, he suddenly became ill and died. Florence was saved, it seemed, by a miracle. The duke's vision of a united Italy under his control was shattered. With such joyful news, the dust-covered messenger clattered onto the bridge over the Arno River and into the red-roofed city.

Italy at the beginning of the fifteenth century was made up of many tiny, independent city-states. City-states were similar to small countries. Some, like Milan, were ruled by ruthless men who seized power by treachery and bloodshed. Others, like Florence, were republics proud of their freedoms. Italy's social and political structure was different from the rest of Europe at the time. Elsewhere, kings were gaining strength and expanding their control over larger territories. Louis XII, known as the spider king because of the webs he wove to trap his enemies, created a powerful French kingdom. The Italians, however, had no king to unite them and resisted men like Visconti who tried. Why was Italy different?

In the Middle Ages (the sixth to fifteenth centuries), most Europeans were part of the feudal system. The feudal system was a society based on the common person's need for protection. Wealthy and powerful men known as feudal lords provided that security. The feudal structure took shape after the Roman Empire collapsed in the fifth century. Earlier, Europeans had enjoyed peace and prosperity thanks to Roman military might and administration. However, as the empire weakened and fell, war became a constant problem. In this time of danger, the feudal system evolved to give people protection. Europeans exchanged their land, livestock, and freedoms in return for the right to flee into the local feudal lord's castle when marauders attacked. They were also obliged to serve their noble lord as soldiers.

The Italians responded to the collapse of Roman government differently from other Europeans. Rather than exchange their freedoms and properties for feudal protection, they formed themselves into tiny, self-ruling, independent city-states. Because Italy was more urbanized than the rest of Europe, these states centered around the important city in the region rather than a lord's castle. This meant that feudalism did not take root in Italy.

The Italians were also more active in trade than the rest of Europe. City-states like Venice, Pisa, and Genoa sent fleets of merchant ships to the more sophisticated Islamic and
Byzantine civilizations of the Middle East. There they traded for spices, medicines, and luxurious cloth. At the same time, new ideas in art, technology, science, and philosophy flowed back to Italy through the trade routes.

In addition to having a different social and political structure than the rest of Europe, the Italians were also well-positioned to economically exploit the kingdoms to the north, like France and England. By the late Middle Ages, these kingdoms were gaining power. Warfare had become more costly as powerful monarchs needed bigger armies. The arrival of gunpowder in Europe from China also meant that professional soldiers called mercenaries were needed to fire complex new weapons like the cannon and the arquebus, an early form of handgun. Kings needed money, and the only place to find it was in Italy. Due to their trade with the Middle East, the Italians had money to lend to their northern neighbors at high interest.

Italian city-states were successful in trade because of their close proximity to the Middle East, but also because they lived in the most well-developed urban environments in Europe. The Roman Empire was an urban empire and believed that civilization needed cities to prosper. Long after Roman government was gone from Italy, the well-planned and fortified cities remained where goods could be safely bought and sold. Along with the city walls and streets, the Romans also left important ideals. Before Rome had become an empire, it had been a republic where parts of the population had a voice in government. Democratic ideals survived the fall of the empire and continued to prosper in the Italian city-states. Citizenship, freedom, and duty were still prized by many Italians in the fifteenth century.

The result of all of these factors at the beginning of the fifteenth century meant that cities like Florence were wealthy, sophisticated, and fiercely independent. They were also deeply religious, another legacy of Rome. The death of the duke of Milan, just as he seemed poised to conquer Florence, was seen as a sign that God approved of the Florentines. It was with tremendous self-confidence, then, that the citizens of Florence embarked on the new century.
Challenges

1. Who was Gian Galeazzo Visconti?

2. How was Italy different from the rest of Europe at this time?

3. What did the Roman Empire give Europe?

4. Why did feudalism exist?

5. What was feudalism?

6. Why did kings need more money in the late Middle Ages?

7. Why did Italy have more money than the rest of Europe?

8. What did Italian traders bring back from the Middle East?

9. Why were Italian city-states successful in trade in the late Middle Ages?

10. What did the Roman Empire leave behind?
The Dome,
The Early Renaissance

"My dear Francesco, have you heard about the cathedral?"
"Why, no, Paulo."
"This ridiculous fellow, Brunelleschi, wants to build a dome over it!"
"No, you must be in jest. It’s too big, and what if it collapses? What humiliation for the Florentines. It is a symbol of the city’s independence and pride."
"Truly, Francesco. And what presumption! No one has been able to build a dome that big since the Roman Empire. Nevertheless, the fool has been studying ruins in Rome and proposes to build this thing, and without scaffolding as well!"
"It can’t be done!"
"Even if Brunelleschi should succeed in putting up some sort of structure, I can assure you that it would fall down in the first wind storm."

Almost six hundred years after conversations very like the above took place, Brunelleschi’s dome still dominates the city of Florence. Although at first considered a fool, the Florentines eventually accepted his plan and watched in amazement as the huge, red-tiled dome completed the cathedral in 1436. In the Renaissance, domes were seen as among the greatest achievements of ancient Rome. Nevertheless, before Brunelleschi, they were thought to be impossible to copy. Fifteenth-century Europeans had simply forgotten how to build them. With Brunelleschi’s dome, at last the Florentines could consider themselves equal to Rome. The dome rises 180 feet into the air without any visible sign of support. In fact, the dome is really built like a giant umbrella with eight huge ribs that hold it up, but these are hidden within the walls. This was different from medieval cathedrals where structural supports were obvious. For example, the medieval flying buttress was a huge arm made of stone that came out from the wall and propped up the cathedral. After the success of the dome, Brunelleschi was asked to design many other churches and public buildings. All reveal the Renaissance desire to create a building that is balanced and harmonious. Renaissance thinkers believed that people needed to be surrounded by beauty in architecture, art, and music.

Just as Brunelleschi used the inspiration of the classical in architecture, his friend, Masaccio, used it in painting. What attracted Masaccio to classical images was their realistic nature. It was Brunelleschi who, by chance, discovered one of the ways classical art achieved this naturalism. While experimenting with geometry and drafting in order to make a model for the dome, Brunelleschi discovered the laws of linear perspective. Linear
perspective is a method of drawing based on mathematical formulas that enables the artist to create the illusion of a three-dimensional image on a flat surface. The discovery gave Masaccio the ability to make paintings that were more reflective of the natural world. He also used rules of proportion when he painted the human form. For instance, when you look at the body of a man from above, his head seems bigger proportionately than his feet, which are farther away. Finally, Masaccio experimented with light and shadow to add to the naturalism and give drama to his subject matter.

His contemporaries were stunned when they saw how he beautifully put all of this together in his fresco, The Tribute Money. A fresco is a large wall painting on plaster. The subject matter of this fresco is the biblical story of Christ admonishing Peter “to render unto Caesar what is Caesar’s and unto God what is God’s.” The figures in this painting look like anatomically correct human beings moving in a landscape that recedes deep into the background just as it does in real life. Thanks to the added effect of light and shadow, the figures seem like they could have just walked off the street.

Donatello had similar artistic concerns as a sculptor. Like his two friends, he was inspired by the classical concern for naturalism and beauty. He was especially interested in copying the classical admiration for the human body. He was also interested in more than anatomy. In his pursuit of beauty, he wanted to capture the inner life of his subjects, such as their dreams, hopes, and fears. His best-known work is a sculpture of the biblical hero, David, finished in 1430. It was the first free-standing nude sculpture since classical times. David is portrayed as a beautiful adolescent with bony elbows and hand on hip. He is standing triumphantly upon the huge, helmeted head of Goliath, which he has just cut off with a massive sword. Like all Renaissance works of art, the sculpture has many meanings. In addition to the biblical story, the sculpture celebrates the victory of Florence over her enemies. As Renaissance artists and architects created even more beautiful and astonishing works, the Francescos and Paulos of the world were gradually silenced. In the end, they could only stand silently and admire.

Activities

1. Look at the picture of the Florence cathedral in Gardner’s Art Through the Ages by R. G. Tansey and F. S. Kleiner. Compare it to the picture of the late Gothic cathedral at Cologne on the same page. How does the Florence cathedral differ from the Cologne cathedral?

2. See also the Pazzi chapel designed by Brunelleschi in the book above. Compare it to the classical architecture you observed for the activities on page 12 of this book.

3. Look at Masaccio’s painting The Tribute Money also in Gardner’s.... How does it compare with the Gothic painting you looked at for the activities on page 16 of this book? How does Masaccio create the illusion of depth on a flat surface?
Challenges

1. What year did Brunelleschi finish the dome on the Cathedral of Florence? _______

2. Why had Europeans not built domes for many years? _______

3. How is Brunelleschi’s dome like a giant umbrella? _______

4. What was a flying buttress? _______

5. What characteristics did Renaissance architects want their buildings to have? _______

6. Why did they think this was important? _______

7. What is naturalism? _______

8. What did Masaccio use to paint three-dimensional figures on a flat surface? _______

9. What else did Masaccio do to make his paintings look realistic? _______

10. Describe Donatello’s best-known work. _______
Leonardo da Vinci, The Renaissance Man

"Master, come look at this."

Verrocchio, master painter, sculptor, and goldsmith, moved across the room to his current painting. When he saw the picture, he gasped. Like most master painters, Verrocchio took on young apprentices to help him with his work and to educate the next generation of artists. He would often do the main sections of the painting and leave details of landscape or minor figures to his apprentices. He had just completed a baptism of Christ and left the angels surrounding the main subject to young Leonardo da Vinci. Verrocchio was stunned when he saw Leonardo's angel. It was more alive than anything he had ever painted. Verrocchio thought to himself, "I won't be deeply saddened when this pupil leaves."

Fourteen-year-old Leonardo da Vinci arrived in Florence in 1466, at the height of the Renaissance. Although he had grown up in the small town of Vinci, his father sent him to the nearby city for education. For eight years, Leonardo studied under Verrocchio and astonished his master with his ability to look closely at life and capture it on canvas. At the age of 20, Leonardo left Verrocchio's workshop and began to work on his own. He produced some of the world's best-known paintings. For instance, his Mona Lisa, though much faded from its original bright colors, still seems alive and continues to mystify viewers with her enigmatic smile.

Leonardo, however, was more than a great painter—he sought the secrets of life. We know a great deal about what went on in Leonardo's mind, thanks to his notebooks. Almost 5,000 pages survive. In them, we learn that he wanted to know how things moved. He drew detailed studies of birds in flight, carefully drawing the bones, muscles, and tendons of the wing. He was also interested in engineering and mechanics. Plans for irrigation schemes, central heating, machine guns, submarines, tanks, and life preservers survive. His interest in flight led him to design airplanes and parachutes. Although Leonardo's helicopter would not have flown, many of his other discoveries would have worked if they had been built. His desire to know also led him deep into the study of botany, geology, and astronomy.

Leonardo's determination to look closely at the physical world and learn only from what he could see was a new way of gaining knowledge. At the time, when thinking people looked at nature and tried to understand it, they relied on ancient authorities. For example, medical doctors relied on the theories of Aristotle, who lived 1,800 years before the Renaissance. With Aristotle's works to support them, doctors believed that the human body's health was maintained by the balance of the four humors. These were hot, cold, wet, and dry. Sickness occurred when one of these humors dominated the rest. The prospect of actually cutting open a cadaver to see how the body worked as medical students do today would have been greeted with horror by a fifteenth-century physician. Leonardo had no such
qualities, however, and dissected at least 30 cadavers in order to understand human anatomy.

He also tried to understand the nature of paint. Disastrously, Leonardo experimented with new ways to mix and apply pigments. At first, his results were startling. Artists from all over Italy came to admire the colors in his masterpiece, the Last Supper. Almost at once, however, it began to flake away. Many of his paintings have completely disappeared, and the Last Suppers seen today is a shadow of its former breathtaking beauty. Innovation and experimentation always require risks, and Leonardo was never one to balk at the unknown.

At other times, it wasn't the danger of the experimentation but bad luck that haunted Leonardo. His clay form for a gigantic bronze statue of the Duke of Milan, Francesco Sforza, was used as target practice by invading French soldiers before it could be cast in bronze. His other employers were often uninterested in his ideas. Sadly, the works Leonardo left behind are few. About a dozen finished paintings, parts of statues, and his notebooks are all that remain. He spent the last four years of his life as guest of the King of France. From his notebooks, we can see that he thought of himself as a failure. "Tell me if anything at all was done..." was written on page after page.

If success is judged by quantity of works completed, then perhaps Leonardo was a failure. If success is judged by innovation, however, then he can rank at the top. He left to the world three discoveries. First, we can command nature when we understand her. Second, we must learn about nature by observation. Third, the physical world cannot be understood by relying solely on all-encompassing theories, but rather by close observation of detail. It is the details that ultimately test the truth of a theory.

In an age that believed that human beings had endless potential for growth, Leonardo came closest to realizing that ideal. His curiosity was boundless.

Activities


2. Notice the lines that da Vinci used to create an illusion of depth on a flat surface in his Last Supper. Where do the lines converge? Why did he pick this point?

3. Look at the section on Aristotle's ideas in Philosophy for Beginners by R. Osborne.
Challenges

1. Who was Leonardo's teacher? __________________________

2. How did Leonardo's teacher know that he had a talented pupil? __________________________

3. What are the names of some of the best-known paintings in Western civilization painted by Leonardo? __________________________

4. What surviving written source tells us about the way Leonardo thought? __________________________

5. List five of Leonardo's inventions. __________________________

6. What was new about the way Leonardo gained knowledge? __________________________

7. What did medieval doctors believe caused illness? __________________________

8. Which of Leonardo's experiments ended disastrously? __________________________

9. Where did Leonardo spend his last years? __________________________

10. What three discoveries did Leonardo leave to the world? __________________________
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