7th Grade Math
Grades 6–8 Mathematics Reference Page

Use the information below to answer questions in this test.

### Formulas

<table>
<thead>
<tr>
<th>Figure</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triangle</td>
<td>$A = \frac{1}{2} bh$</td>
</tr>
<tr>
<td>Parallelogram</td>
<td>$A = bh$</td>
</tr>
<tr>
<td>Trapezoid</td>
<td>$A = \frac{1}{2} h(b_1 + b_2)$</td>
</tr>
<tr>
<td>Rectangle</td>
<td>$A = lw$</td>
</tr>
<tr>
<td>Square</td>
<td>$A = s^2$</td>
</tr>
<tr>
<td>Circle</td>
<td>$A = \pi r^2$</td>
</tr>
</tbody>
</table>

Also for circles: $C = \pi d$

$C = 2\pi r$

$\pi \approx 3.14$

<table>
<thead>
<tr>
<th>Figure</th>
<th>Surface Area</th>
<th>Volume</th>
</tr>
</thead>
</table>
| Rectangular Prism | $S.A. = 2(lh + lw + lv)$ | $V = lwh$
|               |                 | $V = Bh$      |
| Cylinder     | $S.A. = 2\pi rh + 2\pi r^2$ | $V = \pi r^2 h$ |
| Square Pyramid| NA             | $V = \frac{1}{3} Bh$ |
| Triangular Pyramid | NA         | $V = \frac{1}{3} Bh$ |
| Cone         | NA             | $V = \frac{1}{3} Bh$
|              |                 | $V = \frac{1}{3} \pi r^2 h$ |
| Sphere       | NA             | $V = \frac{4}{3} \pi r^3$ |

Interest = principal $\times$ rate $\times$ time

Distance = rate $\times$ time

Slope formula: $m = \frac{y_2 - y_1}{x_2 - x_1}$

Sum of Measures of Interior Angles of a Convex Polygon:

$S = 180(n - 2)$

Pythagorean Theorem: $a^2 + b^2 = c^2$

### Forms of Equations

Standard form of an equation of a line: $Ax + By = C$

Slope-intercept form of an equation of a line: $y = mx + b$

Point-slope form of an equation of a line: $y - y_1 = m(x - x_1)$

### Conversions

<table>
<thead>
<tr>
<th>Standard Units</th>
<th>Metric Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Length</strong></td>
<td></td>
</tr>
<tr>
<td>1 foot (ft) = 12 inches (in.)</td>
<td>1 centimeter (cm) = 10 millimeters (mm)</td>
</tr>
<tr>
<td>1 yard (yd) = 3 feet (ft)</td>
<td>1 meter (m) = 100 centimeters (cm)</td>
</tr>
<tr>
<td>1 mile (mi) = 5,280 feet (ft)</td>
<td>1 meter (m) = 1,000 millimeters (mm)</td>
</tr>
<tr>
<td></td>
<td>1 kilometer (km) = 1,000 meters (m)</td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td></td>
</tr>
<tr>
<td>1 cup (c) = 8 fluid ounces (fl oz)</td>
<td>1 liter (l) = 1,000 milliliters (ml)</td>
</tr>
<tr>
<td>1 pint (pt) = 2 cups (c)</td>
<td>1 liter (l) = 1,000 cubic centimeters (cu. cm)</td>
</tr>
<tr>
<td>1 quart (qt) = 2 pints (pt)</td>
<td></td>
</tr>
<tr>
<td>1 gallon (gal.) = 4 quarts (qt)</td>
<td></td>
</tr>
<tr>
<td><strong>Weight/Mass</strong></td>
<td></td>
</tr>
<tr>
<td>1 pound (lb) = 16 ounces (oz)</td>
<td>1 gram (g) = 1,000 milligrams (mg)</td>
</tr>
<tr>
<td>1 ton = 2,000 pounds (lb)</td>
<td>1 kilogram (kg) = 1,000 grams (g)</td>
</tr>
</tbody>
</table>

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Some questions in this packet were taken from USATest Prep. If Montgomery Public School's subscription expires or lapses, questions from USATest Prep will be removed from this packet.
A group of 4 students buy movie tickets for $24. At this rate, how much would 20 students pay for the movie?

At the Market, you can buy rice by the pound. The table below shows some weights and their corresponding costs. How much does 13 pounds of rice cost? How many pounds of rice can you buy with $88?

<table>
<thead>
<tr>
<th>Rice (lbs)</th>
<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>10</td>
<td>55</td>
</tr>
<tr>
<td>13</td>
<td>?</td>
</tr>
<tr>
<td>?</td>
<td>88</td>
</tr>
</tbody>
</table>

A recipe used \( \frac{2}{3} \text{ cup} \) of sugar for every 2 teaspoons of vanilla. How much sugar was used per teaspoon of vanilla?

A ferry traveled \( \frac{1}{4} \) of the distance between ports in \( \frac{3}{7} \) hour. At this rate, what fraction of the distance between the two ports can a ferry travel in one hour?

- A. \( \frac{6}{8} \)
- B. \( \frac{1}{2} \)
- C. \( \frac{7}{8} \)
- D. \( \frac{18}{7} \)

Meg wants to take tennis lessons. In the chart, four instructors are listed with what they charge. Which instructor gives the best deal?

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Cost per hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark</td>
<td>$100 for 10 hours</td>
</tr>
<tr>
<td>Rick</td>
<td>$80 for 9 hours</td>
</tr>
<tr>
<td>Steve</td>
<td>$75 for 8 hours</td>
</tr>
<tr>
<td>Andy</td>
<td>$60 for 5 hours</td>
</tr>
</tbody>
</table>

An office supply store has five different packages of black ink pens. Which is the best deal available on black ink pens at this office supply?

- A. 4 pack of $7.00
- B. 6 pack for $10.25
- C. 10 pack for $13.00
- D. 12 pack for $15.00

Some questions in this packet were taken from USATest Prep. If Montgomery Public School’s subscription expires or lapses, questions from USATest Prep will be removed from this packet.
A self-serve frozen yogurt store sells yogurt at a price based on weight. Each member of Isabelle's family weighed his or her dish to determine the cost of their yogurt, as shown in the table below.

<table>
<thead>
<tr>
<th>Weight (ounces)</th>
<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>2.50</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

Is the cost of the yogurt proportional to the weight of the yogurt?

The following table gives the number of people picking berries on a farm and the corresponding number of hours that those people worked picking the berries. Graph the ordered pairs from the table. Does the graph represent two quantities that are proportional to each other? Explain why or why not?

<table>
<thead>
<tr>
<th>$x$</th>
<th>$y$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

Which number completes the table of equivalent ratios?

<table>
<thead>
<tr>
<th>8</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>32</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>45</td>
</tr>
</tbody>
</table>

a. 38  
b. 40  
c. 42  
d. 44

If the ordered pairs graphed are all equivalent ratios, what ordered pair is missing?

a. (3, 4)  
b. (3,6)  
c. (4,4)  
d. (4,6)

A student is making a trail mix. Create a graph to determine if the quantities of nuts and fruit are proportional for each serving size listed in the table. If the quantities are proportional, what is the constant of proportionality or unit rate that defines the relationship? Explain how you determined the constant of proportionality and how it relates to both the table and graph.

<table>
<thead>
<tr>
<th>Serving Size</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cups of Nuts</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Cups of Fruit</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
</tr>
</tbody>
</table>

Some questions in this packet were taken from USATest Prep. If Montgomery Public School's subscription expires or lapses, questions from USATest Prep will be removed from this packet.
b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. [7-RP2b]

<table>
<thead>
<tr>
<th>The equation $2y = 8x$ represents a proportional relationship. What is the constant of proportionality?</th>
<th>Each equation represents a proportional relationship. Choose the equations for which the constant of proportionality is $\frac{1}{4}$.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $\frac{1}{4}$</td>
<td>a. $4y = x$</td>
</tr>
<tr>
<td>b. 2</td>
<td>b. $y = 4x$</td>
</tr>
<tr>
<td>C. 4</td>
<td>c. $32y = 8x$</td>
</tr>
<tr>
<td>d. 8</td>
<td>d. $y = 0.25x$</td>
</tr>
<tr>
<td>e. $\frac{1}{4}y = 2x$</td>
<td></td>
</tr>
<tr>
<td>Which statements give the correct constant of proportionality as $y = kx$?</td>
<td>Find the scale factor using the given scale drawings and measurements.</td>
</tr>
<tr>
<td>a. It takes 5 cans of paint ($x$) to cover 10 dog houses ($y$). $y = 2x$</td>
<td>Actual Picture</td>
</tr>
<tr>
<td>b. A lawn service charges $258(y)$ for mowing 6 yards ($x$). $y = 43x$</td>
<td>Scale Drawing</td>
</tr>
<tr>
<td>c. 8 pounds of beef jerky ($x$) costs $78 (y)$. $y = 9x$</td>
<td>3 cm</td>
</tr>
<tr>
<td>d. Beverly reads 315 pages ($y$) in 7 hours ($x$). $y = 45x$</td>
<td>5 cm</td>
</tr>
<tr>
<td>e. 10 chocolate bars ($x$) contain 3,330 calories ($y$). $y = 333x$</td>
<td></td>
</tr>
</tbody>
</table>
c. Represent proportional relationships by equations. [7-RP2c]

Susan and John are buying cold drinks for a neighborhood picnic. Each person is expected to drink one can of soda. Susan says that if you multiply the unit price for a can of soda by the number of people attending the picnic you will be able to determine the total cost of the soda. John says that if you divide the cost of a 12-pack of soda by the number of sodas, you will determine the total cost of the sodas. Who is right and why?

Sara's earnings vary directly with the number of hours she works. The data is shown in the graph. If \( x \) = number of hours worked, and \( y \) = earnings, which equation models Sara’s direct variation?

- a. \( y = 5x \)
- b. \( y = 10x \)
- c. \( y = 5 + x \)
- d. \( y = 10 + x \)

A school had to buy 59 new science books and it ended up costing $3,898.72 total. Write an equation that can be used to express the relationship between the total cost(t) and the number of books(b) purchased.

A sample of 96 light bulbs included 4 defective ones. Assume that today's batch of 6,000 light bulbs has the same proportion of defective bulbs as the sample. Determine the total number of defective bulbs made today.

While relaxing on her front porch, Elise notices a garden snail crawling on the sidewalk. Elise is amazed at how slowly the snail moves, so she starts timing it. There is a proportional relationship between the amount of time (in minutes) that Elise spends timing the snail, \( x \), and the distance (in feet) that the snail moves, \( y \). Write an equation for the relationship between \( x \) and \( y \). Simplify any fractions.

<table>
<thead>
<tr>
<th>( x ) (minutes)</th>
<th>( y ) (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>9</td>
<td>18</td>
</tr>
</tbody>
</table>

Evan earned $26 for 4 hours of babysitting. What equation can be used to model his total earnings \( y \) for babysitting \( x \) hours? Then graph the equation on the coordinate plane. What is the unit rate? How is that represented on the graph?
d. Explain what a point \((x, y)\) on the graph of a proportional relationship means in terms of the situation, with special attention to the points \((0, 0)\) and \((1, r)\) where \(r\) is the unit rate. [7-RP2d]

The graph displays the cost of sponges. Which is the correct price per sponge?

- $0.50
- $0.75
- $1.50
- $3.00

Clark and Phil are each running to raise money. The amount of money \((y)\), in dollars, they each raise is based on the distance \((x)\), in miles, they each run. Clark has an initial donation that he has received regardless of how many miles he runs. The graphs model the amount of money each will raise based on the distance they each run.

What is the unit rate for the person for whom the amount of money and the number of miles are proportionally related?

- $5.00 per mile
- $7.50 per mile
- $15.00 per mile
- $30.00 per mile

Jack is making a snack mix for a party. He is using cashews and peanuts. The table below shows the relationship of the number of packages of cashews he needs to the number of cans of peanuts she needs to make the mix.

<table>
<thead>
<tr>
<th>Packages of Cashews</th>
<th>Cans of Peanuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

What points must be on the graph for the number of cans to be proportional to the number of packages of cashews? Explain why?

Write an equation to represent the relationship
Describe the ordered pair \((12, 24)\) in the context of the problem.
7.RP.3: Use proportional relationships to solve multistep ratio and percent problems. [7-RP3]

50% of Lucy's 160 beads are square in shape. How many beads are square in shape?

a. 72
b. 75
c. 80
d. 85

The table below shows the population data of Austin, Minnesota for the years 2000 and 2011. What is the percent of increase in the population from 2000 to 2011?

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>23314</td>
</tr>
<tr>
<td>2011</td>
<td>24718</td>
</tr>
</tbody>
</table>

a. 2.92%
b. 5.68%
c. 6.02%
d. 34.21%

Rectangle A is a scale drawing of Rectangle B and has 25% of its area. If Rectangle A has side lengths of 4 cm and 5 cm, what are the side lengths of Rectangle B?

According to the chart for the projection of people in jobs in 2002 and ten years later, Nursing Aides had the larger percent of people added, but they added the smaller number of people. Why is this true?

a. The chart contains an error
b. Nursing Aides had more jobs added
c. Nursing Aides had more people in 2002
d. Nursing Aides had fewer people in 2002

<table>
<thead>
<tr>
<th>Employment Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing Aides</td>
</tr>
<tr>
<td>Customer Service</td>
</tr>
</tbody>
</table>

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7th Grade

English
Westbrook
ELA- 7th Grade

Directions for Virtual School (Jan 18th - 21st)
The enclosed packet is worth a major grade so please keep up with it. The packet is due in full on January 24th at the beginning of class. No exceptions.

1. Reading Informational Text Practice
   Lesson 1: Main Idea and Supporting Details
2. Reading Informational Text Practice & Assess
   Lesson 8: Compare & Contrast
3. Lesson 2-4 Simple and Compound Sentences A-C
4. Vocabulary- use the frayer model guide for the 16 Figurative Language Techniques (Write on your on paper for the Figurative Language Vocabulary
5. Plural vs. Possessive Nouns
6. Singular and Plural Nouns Worksheet
7. Abstract and Concrete Nouns
8. Common and Proper Nouns
For the past four years, Garrett Holeve has spent two to four hours every day training to become a mixed-martial arts (MMA) fighter. MMA is a challenging combat sport that combines elements of kickboxing, standard boxing, jiu-jitsu, wrestling, karate, judo, and many other disciplines. Learning the elements of MMA is hard work, and training to be proficient in using and defending himself from all of these combat methods is a significant commitment. Holeve has accepted both the challenge and the commitment. After four years of grueling preparation, he is confident that he is ready to compete in amateur bouts in his home state of Florida.

However, there is a catch. Garrett Holeve has Down syndrome. Down syndrome occurs when a person has a partial or full extra chromosome. While not all people with Down syndrome are alike, there are some common factors—including cognitive delays—that can make it difficult for people like Garrett to learn at the same pace as typical students. Garrett has overcome his learning disability to master all of the complex components of MMA. And, through his dedication to his training, Garrett has even overcome one of the most common characteristics of those with Down syndrome: low muscle tone. He is strong, muscular, and in much better physical condition than many typically-abled young men his age.

Holeve has fought in exhibition competitions, or competitions where there was no score or announced winner. He has done well in these exhibitions and has demonstrated an understanding of the rules of the sport, earning the respect of both opponents and fans. Holeve believes that he is ready to go on to amateur competitive bouts and is eager to do so. Unfortunately, Holeve’s opportunities to pursue the sport he loves are limited. The Special Olympics, an organization that sponsors sporting events for those with disabilities, does not sponsor MMA and has indicated they have no plans to do so. This means there is no chance Holeve will ever compete against other disabled MMA athletes. Undaunted, Holeve tried to compete in the league for typically-abled fighters in his home state of Florida. However, the state boxing commission intervened and cancelled his match, citing his disability as the reason.

Holeve is undaunted. He has trained tirelessly and believes he is ready to compete. So, despite the many obstacles he has encountered, he refuses to give up. Holeve is dedicated to finding an opportunity to participate in the sport he loves. With help from his family, he has started a petition on Change.org asking the public to show its support so he can challenge the boxing commission and demand he be given the same opportunity to compete as other athletes. Holeve’s Foundation, called “Garrett’s Fight,” is dedicated to finding opportunities for all disabled athletes and to creating adaptive training and sport opportunities for those athletes. Holeve plans to sue the boxing commission and will insist on a change in the laws excluding disabled athletes from competing so that he and many others have equal opportunities.
1. Name a person this article focuses on:

---------------------------------------------------------------------

2. What problem does this article focus on?

---------------------------------------------------------------------

3. What nouns or adjectives are stressed in this article?

---------------------------------------------------------------------

4. What is the topic of this passage?
   a. Disabilities
   b. Garrett Holeve
   c. MMA fighting

5. Which statement would be the most appropriate title for this passage?
   a. The Benefits of The Special Olympics
   b. Overcoming Downs Syndrome
   c. A Young Man With a Dream

6. What sentence from the passage could be considered a topic sentence?
   a. Holeve tried to compete in the league for typically-abled fighters in his home state of Florida, but the state boxing commission intervened and cancelled his match, citing his disability as the reason.
   b. Holeve is dedicated to finding an opportunity to participate in the sport he loves.
   c. And, through his dedication to his training, Garrett has even overcome one of the most common characteristics of those with Down syndrome, low muscle tone.

7. Identify a detail that supports that Holeve is prepared to be a professional fighter.
   a. He has done well in amateur bouts
   b. He has better muscle tone than many typically abled young men his age.
   c. He has started a foundation, Garrett’s Fight.

8. Identify a detail that would not support the main idea.
   a. The Special Olympics sponsors sporting events for those with disabilities.
   b. Holeve has trained tirelessly to prepare to compete.
   c. Holeve started a petition on Change.org to change the competition laws in Florida.

The first paragraph is rewritten below. Use this paragraph to follow the instructions for 9 and 10 below.

9. Put a box around the topic sentence in this paragraph.
10. Underline three supporting details in the passage.

For the past four years, Garrett Holeve has spent two to four hours every day training to become a mixed-martial arts (MMA) fighter. MMA is a challenging combat sport that combines elements of kickboxing, standard boxing, jiu-jitsu, wrestling, karate, judo, and many other disciplines. Learning the elements of MMA is hard work, and training to be proficient in using and defending himself from all of these combat methods is a significant commitment. Holeve has accepted both the challenge and the commitment. After four years of grueling preparation, he is confident that he is ready to compete in amateur bouts in his home state of Florida.
A. Read the supporting details (A–L). Then, read the topic sentences in the tables that follow. Decide which details belong under each topic sentence and write the details in the appropriate spaces.

Supporting details:

(A) These doctors believe that people who are sedentary (spend a lot of time sitting) are at a higher risk for some diseases and conditions.
(B) Each student was equipped with a sensor that recorded steps and the number of calories burned during the day.
(C) The experiment showed that students who used the standing desks burned 15% more calories per day than students in traditional classrooms at sit-down desks.
(D) Schools in Australia and England have been testing the new kinds of desks and have seen similar positive results.
(E) For example, extended sitting can contribute to heart disease, the development of diabetes, weaker muscles, and hip and knee problems.
(F) In addition, teachers reported that students who were allowed to stand during class were more alert and could concentrate longer on their work.
(G) But how can people stand and get the work done they need to complete at their desks? For one school district, the answer is simple: standing desks!
(H) Then, their regular desks were replaced with taller desks that allowed them to stand.
(I) The students were also provided high stools so that they could sit at the taller desks as well.
(J) Another interesting observation observed during the experiment was that younger students seemed to adjust to standing desks more easily than older students.
(K) Researchers hope the positive results these schools have found will encourage schools all over the country to invest in new, healthier stand-up desks.
(L) It seems that students in older grades have been told to sit still for so many years that they find it uncomfortable to stand up.
In the last ten years, doctors have studied the effects of long days seated at a desk on the human body.

1.

2.

3.

In College Station, Texas, administrators tried a week long experiment with 480 students to see if being given the opportunity to stand during classroom time would improve their health.

4.

5.

6.

The results were dramatic.

7.

8.

9.

10.

This school in Texas is not the only school that is trying out standing desks.

11.

12.
16. Two of the most popular social media platforms are Facebook and Twitter. While both allow users to reach a narrow audience of selected friends, they also allow users to reach a broader audience. Facebook does not limit the number of words or characters in a post or comment on the platform. Twitter, on the other hand, limits users to 140 characters—which includes letters, numbers, symbols, and spaces. Both platforms enable users to use images or videos, but those on Twitter must include links to the content. Facebook users, however, can place their images and videos within their messages.

17. Cyberbullying is on the rise. While much attention has been paid to the effects of cyberbullying, not as much time has been spent identifying the causes. One major cause is the anonymity the internet provides users. People who might be shy and never consider bullying or even speaking out in "real life" can feel empowered when they are hidden behind a screen. And, if they feel they don't have a voice in their real lives, they might overcompensate online. In that case, they may be the loudest, rudest contributor in a group.

18. Texting while driving is a growing problem that has led to increasing numbers of accidents around the country. Several public service programs have been put into place to warn drivers of the dangers of texting. While these have had some impact, they have not completely solved the problem. Another, more drastic solution is to require all cars to have a cell service blocker that engages when the engine starts. These blockers make it impossible to send or receive phone calls or text messages while the car is running.

19. Most people who drive a car will, at some point, have to pump gas into that car. Filling a car with gas is not complicated. First, determine what side of the car the gas cap is on, then pull into the gas pump so that the gas cap is closest to the pump. Next, get out of the car and walk to where the gas cap and pump are located. Remove the gas cap so that the hole to the gas tank is visible. Review the options on the gas pump. Determine what kind of gas you will use and how you will pay. If necessary, swipe a credit or debit card. Pull the nozzle from the pump and insert it into the hole leading to the tank. Squeeze the trigger on the nozzle and watch the readout on the pump to see how much gas is added. If you do not stop pumping before the tank is full, the nozzle will automatically stop.

20. The house had obviously been built in a different time by people with a lot of money. The front door was at least 12 feet tall and covered with ornate carvings of fruit trees, elves, and fairies. The entry way just inside the door was a perfect circle, floored in white marble and walled in gold-papered walls that stretched at least 20 feet to the ceiling. The faint smell of mold reminded visitors that the house was very old and had been standing for decades without air conditioning, allowing the moisture of the humid air to slowly destroy the woodwork and plaster.
Read each of the excerpts below and answer the questions.

Both large schools and small schools offer standard classes like English, math, history, and science. At larger schools, with a greater number of students, additional elective or special courses may also be offered. For example, a larger school might enroll enough interested students to offer band, orchestra, chorus, jazz band, and rock band. A larger school might also offer students a greater choice of sports. Along with the standards (like baseball, football, soccer, and basketball), a larger school might offer fencing, swimming, or volleyball. That is not to say that there are no advantages to smaller schools. At smaller schools, students have a greater opportunity to participate. There may not be tryouts or cuts for most sports, and there might be roles for all interested actors in student drama productions.

<table>
<thead>
<tr>
<th>List two similarities:</th>
<th>List two differences:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>3.</td>
</tr>
<tr>
<td>2.</td>
<td>4.</td>
</tr>
</tbody>
</table>

The first astronauts had a lot in common with Christopher Columbus. Both set out on journeys to places that had been theorized but never seen in person. Both relied on their knowledge of their ships and their determination to get to their destinations. Astronauts, unlike Columbus, could communicate with people at home. These individuals could provide them with guidance and advice when they encountered difficult situations. Columbus, unlike the astronauts, was in search of riches and a place to start a settlement.

<table>
<thead>
<tr>
<th>List two similarities:</th>
<th>List two differences:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>7.</td>
</tr>
<tr>
<td>6.</td>
<td>8.</td>
</tr>
</tbody>
</table>

Teachers have observed that students in any class generally fall into two categories: active and passive. Both may be equally interested in earning good grades, but active students are more likely to ask questions and seek clarification of assignments. Passive students, unlike their active peers, sometimes neglect to ask for help if they don’t understand the requirements of a task. If they don’t complete all parts of a task, they may reply by saying, “But you never told me to...” Active students plan ahead for tests and quizzes, studying frequently throughout a unit, while passive students wait until the night before a test and restrict their studying to any review materials the teacher has provided.

<table>
<thead>
<tr>
<th>List two similarities:</th>
<th>List two differences:</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>11.</td>
</tr>
<tr>
<td>10.</td>
<td>12.</td>
</tr>
</tbody>
</table>
Lesson 2-4: Simple & Compound Sentences Practice

A. Recognizing Simple and Compound Sentences
Determine whether each sentence is a simple or compound sentence and write S for simple and C for compound.

1. Jackson and James played baseball.
2. We went out to eat for Thanksgiving, but we stayed home for Christmas.
3. Pie is delicious.
4. Mom and Dad bought a new car.
5. I love school, but sometimes it can be boring.

B. Identifying Compound Sentences
Write the conjunction and/or punctuation mark that is used to turn each set of simple sentences into a compound sentence.

6. It was cold outside, so I wore my puffy coat.
7. Stella wanted a new phone, but she didn’t have any money.
8. Joey made chocolate chip cookies, so I ate some.
9. Mom could bake cookies, or she could bake a cake.
10. It was snowing outside, and the sun was still shining.

C. Creating Compound Sentences
Write either a comma and a conjunction or a semicolon in each blank to turn each set of simple sentences into a compound sentence.

(11) During the Renaissance, Venice was known for its glass art _____ Milan was known for its iron. (12) Both were cities in Italy _____ both were very different. (13) Venice is known for its canals _____ Milan is known for its fashion. (14) Both cities are full of culture _____ they are popular tourist destinations. (15) Venice is pretty small _____ Milan is not much different in size. (16) You can travel from Venice to Milan _____ you might want to spend more than one day in each city. (17) Both cities have buildings and artifacts that were around during the Renaissance _____ they are full of history. (18) They both make good places to visit _____ they are educational too. (19) However, they are very different from the United States _____ make sure you plan ahead. (20) You might want to book a trip with a travel agency _____ you can do your research and book a trip yourself.
A. Read the list of nouns below. Fill in the rest of the chart with the correct plural, singular possessive and plural possessive forms of each noun.

<table>
<thead>
<tr>
<th>Noun</th>
<th>Plural</th>
<th>Singular Possessive</th>
<th>Plural Possessive</th>
</tr>
</thead>
<tbody>
<tr>
<td>cow</td>
<td>cows</td>
<td>cow's</td>
<td>cows'</td>
</tr>
<tr>
<td>home</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>camera</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mattress</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>key</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>party</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>woman</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>news</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>phone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fox</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. Write whether the following nouns are singular possessive (SP), plural possessive (PP) or just plural (P) on the line.

1. _______ the cat's pajamas
2. _______ our two families
3. _______ my sisters' husbands
4. _______ the house's stairs
5. _______ your math teachers
6. _______ the team's jerseys
7. _______ his car's tires
8. _______ their aunts' haircuts
9. _______ the public schools
10. _______ the chickens' eggs

C. Read the following sentences. Rewrite each possessive noun into its correct form.

1. What do snake's like to eat?
   ___________________________________________________________________

2. I picked up a cake from Nelsons bakery.
   ___________________________________________________________________

3. My dog's noses are dry after the long walk today.
   ___________________________________________________________________

4. The Johnson's wish you a happy holiday season.
   ___________________________________________________________________

5. The suns' rays are very warm.
   ___________________________________________________________________

6. Socrate's students thought he was a brilliant teacher.
   ___________________________________________________________________

7. This hamburgers bun is covered in sesame seeds.
   ___________________________________________________________________

8. I went to the movie's yesterday to see a thriller.
   ___________________________________________________________________

9. I like chocolate's that have cherries in the middle.
   ___________________________________________________________________

10. My vegan sisters lasagna contains no meat.
   ___________________________________________________________________

Singular and Plural Nouns Worksheet (Circling) Part 2

A singular noun names one person, place, thing, or idea. A plural noun names more than one person, place, thing or idea.

Directions: Circle the plural form of each noun that correctly fits the sentence below.

Example A: My mom brought the (chairs / chaires) to the graduation.
Answer: chairs

1. There are four (oceanes / oceans) on earth.

2. The (restaurants / restaurantes) on the street were all newly built.

3. There were a pair of (sockes / socks) lying on the sidewalk.

4. I ran out of (eraserss / erasers) two months into the school year.

5. The students visited many (websitess / websites) to research their topic.

6. There are around one hundred and ninety (countrys / countries) in the world.
In each sentence, underline the noun or nouns. Above it, write a C if it is concrete or an A if it is abstract.

1. On the path we spotted a large, slimy snake.

2. We felt tremendous relief after the snake passed us.

3. When I stepped outside, I could feel the wind blowing.

4. Mary could feel nothing but joy when she took first place in the science fair.

5. Tom felt pride when he got an A on his math test.

6. My most comfortable shirt is made out of cotton.

7. Bill's anger began to build as the bullies made fun of him.

8. Judy had the gift of forgiveness and was able to forgive people easily.

Complete each sentence with an appropriate noun. Write what kind of noun it is on the line. (Concrete or abstract)

9. Max gave the permission slip to his ___________________________. ____________

10. My family went to ___________________________ for our vacation. ______________

11. Lynn was full of ___________________________ as she watched the movie. ______________

12. My favorite food is ___________________________. ___________________________

13. ___________________________ is my next-door neighbor. ___________________________

14. It takes ___________________________ to compete in a decathlon. ___________________________

15. Last night we played ___________________________ at the party. ___________________________
COMMON AND PROPER NOUNS

A. Read the sentences below. Underline any common nouns in each sentence once and any proper nouns twice.

1. Mr. Sherlock Holmes is a famous fictional detective.
2. This character was created by the author Sir Arthur Conan Doyle.
3. Holmes appeared in 56 stories and several novels written by Doyle, including The Sign of Four.
4. He was often assisted by his friend Dr. John Watson.
5. They worked together on mysteries throughout the city of London.

B. Read the sentences below. Identify the underlined words in each sentence as proper or common nouns.

1. Peter Jones is a detective who works at Scotland Yard.

2. Yesterday Mr. Reginald Merryweather came to him with a very strange story.

3. It seems that rare coins are missing from the Bank of London where he works.

4. The money was kept in a safe at the bank.

5. Peter Jones decided to call Sherlock Holmes to assist him with the case.
7th Grade Civics
Americans, Citizenship, and Governments

Lesson 1: Being an American

**ESSENTIAL QUESTION**
What are the characteristics that make up a culture?

**GUIDING QUESTIONS**
1. From what areas did early Americans come?
2. What do Americans value?

**Terms to Know**
- **immigrant**: a person who moves permanently to a new country
- **distinct**: separate
- **ethnic group**: people who have the same national, cultural, or racial background
- **values**: general beliefs people use to make decisions
- **institution**: a key practice, relationship, or organization in a society
- **arbitrary**: unrestrained
- **popular sovereignty**: idea that government gets its power from the people

**What Do You Know?**
In the first column, answer the question based on what you know before you study. After this lesson, complete the last column.

<table>
<thead>
<tr>
<th>Now...</th>
<th>Later...</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What shared values unite Americans?</td>
</tr>
</tbody>
</table>

**Explaining**
1. Explain why the United States is known as a nation of immigrants.

**Identifying**
2. Where did Native Americans come to North America from?

**A Diverse Population**
Almost all of the people in the United States come from families who once lived in another country. This is why the United States is called a nation of immigrants (IH•muh•gruhts). Immigrants are people who come from other lands to live in a new country.

The first people to live in North America came from Asia thousands of years ago. They slowly spread across the land. These early Americans developed many different languages and distinct cultures. Today they are called Native Americans.

Other people began moving to North America, beginning in the 1500s. The first European settlers were Spanish. They settled in what is now Florida, the Southwest, Texas, and California. In the 1600s, the French settled in Canada, and the English came to live on the Atlantic coast. They were soon joined by other Europeans.

The Dutch were the first Europeans to settle in what is now New York. People from Sweden and other parts of northern Europe came to live in Delaware.
Americans, Citizenship, and Governments

Lesson 1: Being an American, Continued

Use the Graphic

3. In what year was the percentage of total population the lowest in the United States?

In what year was it the highest?

Identifying

4. What group of people was brought to the United States against their will?

Reading Check

5. Describing How did immigration begin to change in the 1890s?

Explaining

6. Starting in the mid-1800s many Americans began moving from the countryside to cities and towns. Why?

Some people did not come to North America of their own free will. Many Africans were captured in their homelands and sold into slavery. Hundreds of thousands were brought to the United States. Congress ended the slave trade in 1807. By then, there were about 500,000 enslaved Africans in this country.

Between 1830 and 1930 about 40 million immigrants came to the United States. During the 1800s many came from northern and western Europe. They were trying to escape hardship and disease. Then gold was discovered in California in 1848. Many immigrants came hoping to get rich. Thousands were from China.

Immigration changed in the late 1800s. From 1890 to 1924 new immigrants came from a different part of Europe. They came from countries in southern and eastern Europe, including Italy, Greece, Poland, and Russia.

Immigration changed again in the later 1900s. Most immigrants came from Asia and Latin America.

People have also moved around within the United States. In the mid-1800s, people began moving from the country to the city. After the Civil War, many African Americans moved to cities in the North. They hoped to find jobs and a better life.

By the 1920s, more than half of all Americans lived in towns or cities. Many were blue-collar workers. This meant they worked in factories. People who worked in offices and other businesses were called white-collar workers.
Today, work has changed. More women work jobs than ever before. Many people work from home. Also the number of factory jobs has decreased. More people earn a living by providing services, rather than by working in factories. This means they do things such as provide health care, teach, or offer other services to people.

The people who make up the United States today come from many different ethnic groups. An **ethnic** (ETH•nik) **group** is a group of people who share the traits of a race, culture, or national background. Latinos, or people of Hispanic origin, are one ethnic group. Their heritage traces back to Latin America. African Americans are another ethnic group. The graph below shows different ethnic groups in the United States. White Americans form the largest group. The others are said to be minority groups.

Americans also practice many different religions. About 173 million Americans belong to a Christian church, but millions follow other religions or practice no religion at all.

**Values and Institutions**

Each American has his or her own values. **Values** are beliefs about what is good or bad that people use to make decisions. The people of the United States have many shared values. Some examples of the common values that help unite the American people are freedom and democracy.

The Declaration of Independence states some of these values. It says that everyone is equal and has a right to freedom. It also says that everyone has the right to life and to seek happiness.
People express their values through their institutions. An institution can be many things. It can be an important custom, relationship, or an organization. The family is the most important institution. It is the center of social life. Families teach values. Schools and religions also teach values. Clubs and volunteer groups bring together people with shared values.

U.S. government institutions are also based on values. These values protect our freedom to live without arbitrary meddling from the government. They are also based on the idea of popular sovereignty (PAH•pyuh•luh SAH•vuh•uhn•tee). This is the idea that the government gets its power from the people.

The Constitution is also based on American values. One important idea is that the power of government should be limited. To achieve this the government is divided into three parts. No one part can have more power than the others.

<table>
<thead>
<tr>
<th>Types of Institutions in the United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2. Schools</td>
</tr>
<tr>
<td>3.</td>
</tr>
<tr>
<td>4.</td>
</tr>
<tr>
<td>5. Government institutions</td>
</tr>
</tbody>
</table>

11. Why is the family an important institution?

12. Which two American documents reflect important American values?

13. Fill in the chart at left with types of U.S. institutions.

14. Place a three-tab Foldable along the line. Label the tabs First Americans, Other Immigrants, and Forming America. On the back, write a sentence about each group and how America formed.
Americans, Citizenship, and Governments

Lesson 2: Becoming a Citizen

ESSENTIAL QUESTION
What is a citizen?

GUIDING QUESTIONS
1. How does a person become a citizen of the United States?
2. In what ways can a foreign person enter the United States?

Terms to Know

citizen a person who is loyal to a government and is protected by that
government the ruling authority for a community
civics the study of the rights and duties of citizens
citizenship the rights and duties of citizens
naturalization a legal process to become a citizen
deny to take away a right or privilege
alien a foreign-born resident of the United States who has not been naturalized
refugee a person who flees his or her home to escape danger such as war
priority highest ranking

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.

<table>
<thead>
<tr>
<th>Now...</th>
<th>Later...</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does it mean to be a citizen?</td>
<td></td>
</tr>
<tr>
<td>What is meant by the term illegal alien?</td>
<td></td>
</tr>
</tbody>
</table>

What Is Civics?

A citizen (SIH•tuh•zuhn) is a person who is loyal to a government and is protected by that government.
Government is the ruling power for a group of people. For government to work well, citizens must understand their rights and duties. The study of the rights and duties of citizens is called civics (SIH•vihks).

The idea of citizenship is very old. Citizenship (SIH•tuh•zuhn•ship) is the rights and duties of citizens. It began in ancient Greece and Rome. At that time, citizenship was only for men who owned property. Their duties included paying taxes and serving in the armed forces.

In the 1700s, new ideas arose about citizenship and government. Citizenship came to mean belonging to a nation. People came to believe that governments got their power from the people. This idea is known as "consent of the governed."
The Growth of American Citizenship

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1776</td>
<td>Only white men who owned property could vote</td>
</tr>
<tr>
<td>1868</td>
<td>African American men could vote with the passing of the 14th Amendment</td>
</tr>
<tr>
<td>1920</td>
<td>Women win voting rights in the 19th Amendment</td>
</tr>
<tr>
<td>1924</td>
<td>All Native Americans are granted full United States citizenship</td>
</tr>
</tbody>
</table>

Today citizenship in the United States is not based on how much land a person owns. It is also not based on gender, race, or religion. Instead, it is based on birth. People who are citizens because they were born in the United States or have U.S.-born parents are called natural-born citizens.

A person is an American citizen if he or she was born in any one of these places:
- in any of the 50 states or in the District of Columbia
- in an American territory
- on a U.S. military base in another country

Even if a person's parents are not citizens of the United States, he or she is still a citizen if born on American soil.

There are two ways a person who is born in another country can be an American citizen.
1. if both parents are U.S. citizens
2. if one parent is a U.S. citizen who has lived in the United States

A person can also be a citizen of both the United States and another country. This is known as dual citizenship.

A person can become an American citizen even if he or she is not a natural-born citizen. He or she must complete the naturalization process. Naturalization (nə•chuh•ruh•luh•ZAY•shuhn) is a legal process to become a citizen.

Immigrants who want to become citizens must meet five requirements. They must
1. be at least 18 years old
2. have been a legal permanent resident for five years
3. be able to read, write, and speak English
4. be of good moral character
5. show that they understand U.S. civics
Americans, Citizenship, and Governments

Lesson 2: Becoming a Citizen, Continued

There are four main steps to the naturalization process. They are shown in the box below.

<table>
<thead>
<tr>
<th>Steps in the Naturalization Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fill out an application with U.S. Citizenship and Immigration Services (USCIS).</td>
</tr>
<tr>
<td>2. Talk with a USCIS official.</td>
</tr>
<tr>
<td>3. Pass a citizenship exam.</td>
</tr>
<tr>
<td>4. Attend a citizenship ceremony.</td>
</tr>
</tbody>
</table>

When the applicant meets with a USCIS official, the official makes sure the person meets all the requirements. The exam tests whether the applicant can read, write, and speak English. It also asks questions about U.S. history and government. At the citizenship ceremony, applicants swear their loyalty to the United States. They promise to obey the Constitution and the laws. After taking this oath and signing a paper, they are citizens.

A person can lose his or her citizenship. This can happen in three ways.

1. **Expatriation.** If a person gives allegiance to another country, such as by becoming a naturalized citizen of another country.

2. **Denaturalization.** If a person is found to have lied on his or her citizenship application, he or she loses citizenship and can be deported. To be deported is to be sent out of the country.

3. **Being convicted of certain crimes.** If a person is convicted of treason, rebelling against the government, or using violence to try to overthrow the government he or she can lose citizenship.

Only the federal government can grant citizenship or take it away. The states can deny, or take away, some privileges of citizenship. They can prevent a person from voting, for example. But they cannot take away citizenship itself.
Americans, Citizenship, and Governments
Lesson 2: Becoming a Citizen, Continued

Foreign-Born Residents
Many people who live in the United States are not citizens. People who were born in another country and who have not been naturalized are called aliens (AY•lee•uhhnz). There are three kinds of aliens: legal aliens, refugees, and illegal aliens.

Legal aliens can be either resident aliens or nonresident aliens. A resident alien is a person who lives permanently in the United States. They may stay as long as they wish. A nonresident alien is a person who is planning to stay for only a certain length of time. A reporter from Mexico who is covering a U.S. election would be a nonresident alien.

Legal aliens have some rights. They can hold jobs, own property, and attend public schools. They have some duties, such as paying taxes. They do not have the right to vote or hold public office. They also cannot work in government jobs or serve on juries.

A refugee (reh•fyoo•jee) is a person who leaves his or her country to escape danger, such as an earthquake or a war. Our government protects some refugees.

The United States allows only about one million people to enter the country each year. Top priority goes to relatives of U.S. citizens and people with job skills that are needed. Another million people enter the country illegally each year. Some come as visitors and then never leave. Others cross the borders from Canada or Mexico. Close to 12 million people live in the United States illegally today. Most came in search of a better life. But living as an illegal alien is hard. It is against the law to hire illegal aliens, so most end up working for low pay and without benefits. They live in fear that they will be discovered and sent out of the country.

10. What is the difference between a resident alien and a nonresident alien?

Reading Check
11. How do the rights of legal aliens differ from those of U.S. citizens?

Foldables
12. Place a three-tab Foldable along the line. Label the anchor Residents of U.S. Label the first tab Citizen by Birth, and the second Citizen by Naturalization, and the last tab Aliens. On both sides, record facts about these groups and what they have in common.
Americans, Citizenship, and Governments

Lesson 3: Duties and Responsibilities of American Citizens

ESSENTIAL QUESTION
What is a citizen?

GUIDING QUESTIONS
1. What are the duties of American citizens?
2. What are American citizens' responsibilities?
3. How can citizens make their community a better place to live?

Terms to Know

- responsibility: an obligation that we meet of our own free will
- duty: an action we are required to do
- register: to record or enroll formally
- draft: to call for military service
- tolerance: respecting and accepting others
- welfare: the health, prosperity, and happiness of the members of a community
- volunteerism: giving your time and services to others without expecting payment

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.

<table>
<thead>
<tr>
<th>Now...</th>
<th>Later...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why must we pay taxes?</td>
<td></td>
</tr>
<tr>
<td>What does it mean to be tolerant of others?</td>
<td></td>
</tr>
<tr>
<td>Why is volunteering important?</td>
<td></td>
</tr>
</tbody>
</table>

Duties of Citizens

A community can be a neighborhood, town, school, workplace, state, country, or even the world. We all play a part in making our communities safe and successful. We all have responsibilities. Responsibilities (rih·SPAN·suh·BIH·luh·teez) are things we should do. They are obligations we meet of our own free will. No law requires us to meet our responsibilities. Duties are different from responsibilities. Duties are things that we have to do. If we ignore or forget our duties, we may have to pay a fine or even go to jail. The chart below shows the duties of citizens.

<table>
<thead>
<tr>
<th>Major Duties of American Citizens</th>
</tr>
</thead>
<tbody>
<tr>
<td>• obey the law</td>
</tr>
<tr>
<td>• pay taxes</td>
</tr>
<tr>
<td>• defend the nation</td>
</tr>
<tr>
<td>• serve in court</td>
</tr>
<tr>
<td>• attend school</td>
</tr>
</tbody>
</table>
7th Grade Geography
The Geographer’s World

Lesson 1: How Geographers View the World

ESSENTIAL QUESTION
How does geography influence the way people live?

Terms to Know
geography the study of Earth and its people, places, and environments
spatial Earth’s features in terms of their places, shapes, and relationships to one another
landscape the portions of Earth’s surface that can be viewed at one time from another location
relative location the location of one place compared to another place
absolute location the exact location of something
latitude the lines on a map that run east to west
Equator a line of latitude that runs around the middle of Earth
longitude the lines on a map that run north to south
Prime Meridian the starting point for measuring longitude
region a group of places that are close to one another and share some characteristics
environment the natural surroundings of a place
landform the shape and nature of the land
climate the average weather in an area over a long period of time
resource a material that can be used to produce crops or other products

Where in the world?
Marking the Text
1. Read the text on the right. Highlight the different ways it means to think spatially.

Defining
2. Give three additional examples of landscapes.

Making Connections
3. Describe how you experience geography in your daily life.

Reading Progress Check
4. How is geography related to history?

Geographers Think Spatially

Guiding Question  What does it mean to think like a geographer?
Geographers try to understand the world. They look at people and the world in which they live. Geographers study why people live where they do. They also study how people relate to each other and to their environment. Geography is the study of Earth and its people, places, and environments.

One way geographers look at Earth is spatially. Spatial means “taking up space.” Therefore, they study the things that take up space on Earth, including cities, countries, mountains, and lakes.

Thinking spatially means that you consider:
- where things are located on a map,
- their size and direction,
- how far apart they are,
- how different places are related to each other,
- and what characteristics they have.

Earth is filled with both physical and human features.

Physical Features
- climate, landforms, vegetation

Human Features
- population, economic activity, land use

One way to learn about places is to study landscapes. If you look out at the street from your front porch, you are looking at a landscape. Geographers use landscapes to learn more about the physical and human features they see.

Geography isn't just something we look at, though. It is something we experience. We see it in the change of seasons, we hear it in the sound of birds, we feel it when we walk on sidewalks, and we learn about it when we watch TV. This is all geography.

In addition, Earth is always changing. Rivers shift course, volcanoes erupt, cities grow larger, and nations expand. Geographers study how places change over time. As they study, they ask many questions. What impact did those changes have? What factors made a city grow? What effect did its growth have on the people who lived there?
The Geographer’s World

Lesson 1: How Geographers View the World, Continued

The Five Themes of Geography

Guiding Question: How can you make sense of a subject as large as Earth and its people?

Geographers like to organize information about the world into five themes: location, place, region, human interaction with the environment, and movement.

The first theme is location. Location is where something is found on Earth. There are two types of location: relative and absolute. Relative location describes where a place is compared to another place. For example, knowing that New Orleans is near the mouth of the Mississippi River helps us understand why the city became an important trading port.

Absolute location is the exact location of something. Maps show absolute location with horizontal and vertical lines. Horizontal lines are called lines of latitude. They run east to west and measure distance going north to south. The Equator is a line of latitude in the middle of Earth and has latitude of 0°.

Vertical lines are called lines of longitude. They run north to south and measure distance going east to west. The Prime Meridian is the starting point for measuring longitude. It has a longitude of 0°.

Place and region are additional themes. When places are close to one another, they share some features, which means they belong to the same region. Both places and regions can be described by human and physical features. Geographers like to study regions so they can look for patterns in larger areas. They also want to examine special features that make each place in a region unique.

The fourth theme is how humans interact with their environment. The environment is the natural surroundings of a place. It includes landforms, climate, and resources. Landforms are the shape and nature of the land. Hills, valleys, and mountains are all types of landforms. Climate is the average weather in a place over a long period of time. Resources are the materials that come from a place. They are used to plant crops or make other products.

The final theme is movement. People might have to move for many reasons, such as war, famine, or religious freedom. When a lot of people move, there might be problems with not enough housing or jobs. Products also move from place to place. Roads, ships, airplanes, and trucks are important to movement. Ideas can move over the Internet, telephone, television, and radio.
Lesson 1: How Geographers View the World, Continued

Skill Building

Guiding Question  How will studying geography help you develop skills for everyday life?

Geographers use maps and many other visuals to show a representation of the world. Visuals include graphs, charts, diagrams, and photographs. By studying geography, you can learn to use these visuals, too.

<table>
<thead>
<tr>
<th>Visual</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphs</td>
<td>Help compare information</td>
</tr>
<tr>
<td>Charts</td>
<td>Show information in columns and rows</td>
</tr>
<tr>
<td>Diagrams</td>
<td>Use pictures to show something in the world</td>
</tr>
</tbody>
</table>

Geographers also ask analytical questions about the world. They may want to examine causes and effects. Or they may want to analyze how something changed over time. For instance, they may ask: How does climate affect how people live? Or they may ask: Why do people in different nations use resources differently?

As you study geography, you can learn to ask—and answer—questions like these, too.

Writing

Check for Understanding

1. Narrative  Describe your neighborhood spatially. Include its location, shape, characteristics, and the relationship between human and physical features.

2. Informative/Explanatory  Give an example of how humans can affect the environment and how the environment can affect humans.
The Geographer's World

Lesson 2: The Geographer's Tools

ESSENTIAL QUESTION

How does geography influence the way people live?

Terms to Know

- **hemisphere**: each half of Earth
- **key**: the feature on a map that explains the symbols, colors, and lines on a map
- **scale bar**: the feature on a map that tells how a measured space on the map relates to actual distances on Earth
- **compass rose**: the feature on a map that shows direction
- **map projection**: the system of presenting the round Earth on a flat map
- **scale**: the relationship between distances on the map and on Earth
- **elevation**: the height or depth of a place compared to sea level
- **relief**: the difference between the elevation of one feature and the elevation of another feature near it
- **thematic map**: a map that shows more specialized information
- **technology**: any way that scientific discoveries are applied to practical use
- **remote sensing**: getting information from far away

Where in the world?
Using Globes and Maps

Guiding Question  What is the difference between globes and maps?

Making and using maps and globes is a big part of geography. Geographers use both of them to picture the world and show where things are located.

A globe is the most accurate way to show places on Earth. Because Earth is in the shape of a sphere, globes are also in the shape of a sphere. A sphere is another word for ball.

Globes have some advantages over maps.

- Globes are shaped like Earth.
- They show the correct shapes of land and bodies of water.
- They show accurate distances and directions between places on Earth.

Maps are not round like globes. Instead, they are flat representations of the round Earth. Because of this, maps distort what Earth looks like. Distort means “bend or twist.” In other words, maps will always show the physical features of Earth incorrectly to some degree.

Even though maps aren’t as accurate as globes, they have several advantages.

- Maps don’t have to show the whole planet.
- They can provide more details than a globe.
- They can be stored and carried easily.
- They can focus on just one small area.

In addition, maps tend to show more kinds of information than globes. Globes tend to show major physical and political features, such as land masses, bodies of water, and countries of the world. They can’t show more detail because then they would become too hard to read.

Yes, some maps also show these features. But maps can be more specialized as well. One map might show a large mountain range. Another might show the results of an election or the locations of all schools in a particular city.

One thing both globes and maps show are hemispheres. A hemisphere is half of Earth. These halves are divided by the Equator and the Prime Meridian. The Equator divides Earth into the Northern and Southern Hemispheres. The Prime Meridian and the International Date Line divide Earth into the Eastern and Western Hemispheres.
All About Maps

Guiding Question  How do maps work?

Maps are everywhere—in the subway, in your textbook, at a Web site, or in a state park. Each map is different, but they share many common features. The table below describes these features.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Tells what area the map will cover</td>
</tr>
<tr>
<td>Key</td>
<td>Unlocks the meaning of the map by explaining symbols, colors, and lines</td>
</tr>
<tr>
<td>Scale bar</td>
<td>Tells how a measured space on the map corresponds to actual distances on Earth</td>
</tr>
<tr>
<td>Compass Rose</td>
<td>Shows north, south, east, and west direction</td>
</tr>
</tbody>
</table>

But how is a round Earth shown on a flat map? To do this, geographers use something called a map projection. This is when some parts of Earth are distorted in order to represent other parts as accurately as possible. Some projections show the correct size of certain areas in relation to one another. Others break apart the oceans. Mapmakers choose a projection based on the purpose of the map.

As shown in the table, the scale bar tells how distance is measured on a map and compares it to actual distances on Earth. A large-scale map focuses on a small area. Its scale might be one inch to 10 miles (16 km). This means that one inch on the map equals 10 miles (16 km) on Earth. A small-scale map focuses on a larger area and has a larger scale.

There are two basic types of maps: general purpose and thematic. General purpose maps show either human or physical features. A political map shows human features, such as the boundaries of a country.

A physical map shows natural features, such as mountains and rivers. Many physical maps also display elevation, or how much above sea level something is. Physical maps might also show relief, or the difference between the elevation of one feature and the elevation of another feature.

Thematic maps show more specialized information. For instance, a thematic map might display the kinds of plants that grow in different areas. Or it might show where ranching or mining take place.
Lesson 2: The Geographer's Tools, Continued

Geospatial Technologies

Guiding Question How do geographers use geospatial technologies?

Cell phones and GPS devices use something called geospatial technology. Technology is any way that scientific discoveries are applied to practical use. Geospatial technologies help us think spatially about geography. GPS devices are one type of geospatial technology. They work with something called the Global Positioning System (GPS).

The GPS system is made up of more than 30 satellites that orbit Earth. These satellites send out radio signals to GPS devices on Earth. GPS devices receive the signals from four satellites. They need four satellites so they can combine the signals. This helps them calculate their exact location on Earth.

Another type of geospatial technology is the geographic information system (GIS). This system gathers, stores, and analyzes geographic information. The information is then shown on a computer screen as a map.

Satellites gather information by something called remote sensing. This means the information comes from far away. Satellites might take pictures of the land. Or they might measure the amount of moisture in the soil. In the 2000s, GIS technology uses remote sensing to help protect plants and animals.

Writing

Check for Understanding

1. Informative/Explanatory Why do maps distort the way Earth's surface really looks?

2. Informative/Explanatory Are road maps general-purpose maps or thematic maps? Explain your answer.
7th Grade Science
Accessing Prior Knowledge

Dynamic Nature of Ecosystems

Four students were asked to predict what would happen to this ecosystem if an invasive species was introduced. Their responses are recorded below.

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>An isolated island ecosystem has the following food chain: grass → grasshopper → frog → snake</td>
</tr>
<tr>
<td>2</td>
<td>Humans introduce Kudzu (an Asian vine that grows very quickly).</td>
</tr>
<tr>
<td>3</td>
<td>The native grasses cannot compete for resources with the Kudzu vines and begin to die off.</td>
</tr>
</tbody>
</table>

1. Out of the four student responses, which one do you agree with the most? Explain your thinking.

2. Besides introduction of invasive species, what is another way an ecosystem can change?
### Practice

<table>
<thead>
<tr>
<th>Phenotype</th>
<th>Genotype</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB</td>
<td>Bb</td>
</tr>
<tr>
<td>bb</td>
<td></td>
</tr>
</tbody>
</table>

**Problem:** What are the possible genotypes and phenotypes of the offspring? If an *F₂* individual is crossed with a *rr* individual, what are the possible genotypes and phenotypes of the offspring?

**Solution:**

- **Possible genotypes:**
  - BB
  - Bb
  - bb

- **Possible phenotypes:**
  - Phenotype: BB
  - Genotype: BB

In each *F₂* individual, what is the percentage chance for each phenotype?
PUNNETT SQUARE CHEAT SHEET

Below is a sampling of Punnett Square problems that you will be expected to solve. In order to do this, you will also have to understand the meaning of the terms below.

- **Genotype**: The letters that make up the individual. E.g. TT or Tt
- **Phenotype**: The physical characteristics of the particular trait. E.g. Tall or short
- **Dominant trait**: Signified by capital letter—e.g. T. If the traits you are using are dominant or recessive, this trait will _overpower_ the recessive trait and will be expressed. E.g. TT
- **Recessive trait**: Signified by small case letter—e.g. t. An organism with a recessive allele for a particular form of a trait will have that form only when the dominant allele for the trait is not present.
- **Homozygous**: Has same alleles. E.g. TT or tt (same alleles for trait)
- **Heterozygous**: Has different alleles. E.g. Tt (different alleles for trait)
- **Purebred trait**: Also known as true breeding. Individuals genotype is homozygous and will only make one type of gamete. E.g. TT will always produce T, and Tt will always produce T and t.
- **Gamete**: sex cells. Represented by letter N (meaning they are haploid—contain half the chromosomes in their own cells). E.g. P or P (genotype)
- **P generation**: The parental generation (usually the first one in a genetic cross)
- **F1 generation**: The _first_ generation of offspring from P generation (means first filial; Latin for "son")
- **F2 generation**: The _second_ generation of offspring from P generation (means first filial; Latin for "son")
- **Monohybrid Cross**: Also known as a _Simple-Factor Cross_. Only one trait is used in the genetic cross. E.g. T=Tall, t=short
- **Dihybrid Cross**: A cross that involves two traits. Two alleles are used in the genetic cross. E.g. T=Tall, t=short & B=Black fur, b=white fur. Example: Tt x Tt
- **Incomplete Dominance**: One allele is not completely dominant over the other. There is a blending with the heterozygous offspring. E.g. RR=Red, Rr=Pink, and rr=white
- **Co-dominance**: Both alleles contribute to the phenotype. Offspring will have combination of two alleles. E.g. Rr=Red hair, Rr=Red (mix of red and white hair—almost looks pink), and rr=white
- **Sex-linked trait**: Genes located on the sex-chromosomes called _sex-linked genes_. Usually found on the X chromosome. X-linked alleles are always expressed in males because males have only one X chromosome.
- **Multiple Alleles**: There are more than two-choices for the allele. Example is human blood group genes. There are three possible alleles for this gene. F, f, and i. F and f are _co-dominant_. There are four possible phenotypes: A, B, AB, and O.
- **Genotypic ratios**: The ratio of different genotypes in the offspring from a genetic cross. E.g 1:2:1
- **Phenotypic ratios**: The ratio of different phenotypes in the offspring from a genetic cross. E.g 3:1

---

Punnett Square Practice Worksheet

1) For each of the genotypes (AA, Aa or aa) below determine what the phenotype would be. Purple flowers are dominant to white flowers.

<table>
<thead>
<tr>
<th></th>
<th>PP</th>
<th>Pp</th>
<th>pp</th>
</tr>
</thead>
</table>
| Hairy knuckles are dominant to non-hairy knuckles in humans.
| HH | Hh | hh |

**Bobtails in cats are recessive. Normal tails are dominant.**

| TT | Tt | tt |

2) For each of the following write whether it is homozygous dominant, heterozygous or homozygous recessive.

| AA | gg |
| Pp | li |
| tt | TT |

---

Use the following information for questions 3-5:

In dogs, the gene for fur color has two alleles. The dominant allele (F) codes for grey fur and the recessive allele (f) codes for black fur.

3) The female dog is heterozygous. The male dog is homozygous recessive. Figure out the percentage or ratio of possible phenotypes and genotypes of their puppies by using a Punnett Square.

% of possible Genotypes:

| FF | Ff | ff |

% of possible Phenotypes:

- Black fur:
- Grey fur:
1. What is the difference between a cell wall and a cell membrane?

2. Some students build a model of a plant cell using everyday materials. The students include objects of different shapes to represent various organelles found within a normal plant cell. Describe the process they might follow to build their model.

**Directions:** Answer the questions below.

**Cell Membrane:** A layer that surrounds a cell, controlling what enters and leaves the cell.

**Cell Wall:** A rigid layer outside the cell membrane that provides support and protection.

**Mitochondria:** Organelles responsible for producing energy within the cell.

**Nucleus:** The control center of the cell, containing genetic material.

---

**Work Bank**

<table>
<thead>
<tr>
<th>Organ</th>
<th>Adventitious</th>
<th>Nucleus</th>
<th>Cell wall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitochondria</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Check Understanding**

Use each of the words in the box below to fill in the blanks based on what you have learned.

- nucleus
- mitochondria
- cell wall
- additional
- organelles

---

**Guided Practice**
P.E
All Grades
M oderate to Vigorous Physical Activity

This week we talked about exercising within your healthy heart zone (HHZ). This means keeping your heart rate between 140 and 170 beats per minute. Activities that keep your heart rate in the lower end of your HHZ are “moderate” activities. When your heart rate is at the moderate level, you can still talk without too much discomfort. But when your heart rate is at the upper end of your HHZ, it is more difficult to exercise and talk at the same time! These are called “vigorous” activities.

Remember you need 60 minutes of activity that ranges from moderate to vigorous every day!

GET IN “THE ZONE”
The Healthy Heart Zone [HHZ], that is...

1. Circle the activities that are aerobic and help strengthen your heart and get you in “The Zone”.

<table>
<thead>
<tr>
<th>FOOTBALL</th>
<th>READING</th>
<th>JUMPING ROPE</th>
<th>PLAYING BOARD GAMES</th>
<th>GYMNASTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUNNING</td>
<td>DANCING</td>
<td>WATCHING TV</td>
<td>SOCCER</td>
<td>BASEBALL</td>
</tr>
<tr>
<td>ICE SKATING</td>
<td>DRAWING</td>
<td>BASKETBALL</td>
<td>VIDEO GAMES</td>
<td>VOLLEYBALL</td>
</tr>
</tbody>
</table>

2. Now categorize the AEROBIC activities that you circled in number 1 as either ‘Moderate’ or ‘Vigorous’.

<table>
<thead>
<tr>
<th>MODERATE</th>
<th>VIGOROUS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. It is important that you know how to check your heart rate (pulse) when you don’t have a heart rate monitor. Be sure you are sitting down and calm and that you haven’t been running around. Place your first three fingers in the middle of your neck, right below your chin. Now, move your fingers to one side of your neck (1-2 inches) and feel your pulse at your carotid artery. Do not press too hard.

   Count the number of heart beats for 6 seconds, then enter that number in the following formula:

   \[
   \text{Number of beats: } \_\_\_\_\_\_ \times 10 \text{ (or just add a zero)} = \_\_\_\_\_\_
   \]

   This is the number of times your heart beats in one minute. This is called your Resting Heart Rate.

4. Over the weekend, do an aerobic activity for 3 minutes without stopping. Take your pulse again right after you stop and complete the formula below:

   \[
   \text{Number of beats: } \_\_\_\_\_\_ \times 10 \text{ (or just add a zero)} = \_\_\_\_\_\_
   \]

   The heart rate increases as you exercise. This is called your Active Heart Rate. Remember, the heart is a muscle and gets stronger as you exercise.

5. Calculate and record your heart rate for the following activities:
   - Resting Heart Rate (RHR)- You must be calm and still to check RHR: \_\_\_\_\_\_
   - Sit in a chair and stand up ten times- Calculate your heart rate: \_\_\_\_\_\_
   - Jog in place for 30 seconds- Calculate your heart rate: \_\_\_\_\_\_
   - Jump rope or run in place for 1 minute- Calculate your heart rate: \_\_\_\_\_\_

6. What does Healthy Heart Zone mean?

7. What is the difference between moderate activity and vigorous activity?
HEALTH-RELATED PHYSICAL FITNESS

You have learned about the differences between health-related and skill-related fitness. Working with a friend or family member, answer the following questions. You can also use the internet for help!

1. Circle the statement that defines health-related fitness:
   - Health-related fitness helps you live better
   - Health-related fitness helps you do better in sports

2. Scratch out the components that are not health-related fitness components.

<table>
<thead>
<tr>
<th>BODY COMPOSITION</th>
<th>AGILITY</th>
<th>MUSCULAR STRENGTH</th>
<th>BALANCE</th>
<th>MUSCULAR ENDURANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEROBIC FITNESS</td>
<td>POWER</td>
<td>FLEXIBILITY</td>
<td>SPEED</td>
<td>COORDINATION</td>
</tr>
</tbody>
</table>

3. What is the most important component of health-related fitness?

4. Name the five health-related fitness components and say what you can do to improve that component. An example is provided for you.

<table>
<thead>
<tr>
<th>HRF COMPONENT</th>
<th>WHAT ACTIVITIES HELP YOU IMPROVE THIS COMPONENT?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic Fitness</td>
<td>Running, biking, hiking - Anything that allows you to get in your HHZ</td>
</tr>
</tbody>
</table>
Art
ART PACKET
Due: Jan. 24th 2022
This will be graded as the first assignment of the 9 weeks.

Use your time wisely, by doing one assignment per day.

Please complete the following worksheets.
1. Tuesday - Stick Figure Action
2. Wednesday - Expressionism Word Search
3. Thursday - Boomerang Design
4. Friday - Practicing Symmetry
Directions:

Stick figures can still show action:
Step 1: Write what kind of action the stick figure is performing (running, jumping etc) under the stick figure.
Step 2: Draw 2 new poses and 2 of the poses on the blank paper attached

Ex. Meditating
Expressionism

Find the following words in the puzzle.
Words are hidden ↑ ↓ → ← and ↓

ABSTRACT  ANALOGOUS  ARCHITECTURE  BLUEPRINT  CARTOON  COLLAGE  CRAYON  DESIGN

DRAW  EASEL  EXHIBITION  EXPRESSIONISM  HATCHING  HUE  INTERIOR  DESIGN

LINE  MEDIUM  MIXED MEDIA  MONOCHROMA  TIC  MURAL  PAINTING  PASTELS

PRIMARY  QUILT  SCALE  SCANNER  SECONDARY  COLOR  SHADING  SKETCH  SPACE

STOP ACTION  STORYBOARD  SYMBOL  TEMPURA PAINT  WATER COLOR

WATERCOLOR  PASTELS  SNHGQ   DTCMRMEDIUMMIXEDMEDIA  ECTINOAAWWHUEGNIHTAHLO
SANENBVSNOITIBIHXEZWAL  IRMTOEEXHADPNOOTRACARO
GTPESCJLJFGNIDAHSHBATURC  NSUREHQUILTINGDMYPBRMDYRAMIRPPQRENNACSR
AAAEROSZNLXTNOITCAPOTSA  WEPDOMKHEXPRESSJMDNCAIIIAXIOTRHPALETTEEMXN
OAIARTQERUTCETICHCRACAHO  YPNTIESKETCHBLUEPRINTNC
ASTETCDUENILANALOUGOSXERPLDNJXELACSSSTORYBOARDS
CAOXIWBQLOBMYSEGALLOCI
BOOMERANG DESIGN

Design your own boomerang using colours and symbols from Aboriginal Art

USE THESE IMAGES AND SYMBOLS TO HELP YOU WITH YOUR DESIGN!

MAN
WOMAN
RAIN
SPEAR
CAMPIRE
REDEEM PLACE
TWO MEN SITTING
WATERHOLE
MEETINGS PLACE
SMOKE, WATER RICH.
LEATHERING OR BUSH FIRE
STAR
PEOPLE SITTING
WATERHOLE CONNECTED
BY RUNNING WATER
RANDOM, SANDHILL OR CLOUD
SHEILD
POSSUM
HONEY AND SALT
MOVING KANGAROO TRACES
FOUR MEN SITTING
DIGGING OR CLAPPING STICKS
FOOTPRINTS, ANIMAL TRACKS
WITCHETRY GRUB
Boomerang
TAMA FLAME
ANIS
Practice in Symmetry: Use the grid below to draw a *mirror image* of the owl's left side on the blank side of the axis.