Grade 6
Family Resource Bundle

Grade 6

by Jean K. Potratz 2016

1. RI.KID.2

PART A: Which statement best expresses the main idea of the text?

   A. Like many friends, Jefferson and Adams disagreed, but their disagreements often had political results.
   B. While Jefferson and Adams often disagreed, they kept their personal disagreements from affecting their political decisions.
   C. The problems over the years between Jefferson and Adams are proof that even the best friends are allowed to fight occasionally.
   D. The United States would have likely been stronger if Jefferson and Adams had agreed on more political issues.

2. RI.KID.1

PART B: Which detail from the text best supports the answer to Part A?

   A. "Adams had said, 'Well, I understand that you are to beat me in this contest, and I will only say that I will be as faithful a subject as any you will have.'" (Paragraph 9)
   B. "'Mr. Adams, this is no personal contest between you and me. Two systems of government divide our fellow citizens into two parties. With one of these you concur, and I with the other.'" (Paragraph 10)
   C. "And since he felt that Adams's appointment of judges was a personal attack, Jefferson had the new law repealed. This meant that Adams's son, John Quincy Adams, lost his post." (Paragraph 12)
   D. "Dr. Rush called the rift between Jefferson and Adams 'a national misfortune.' After all, the two men were symbols of American independence." (Paragraph 14)

3. RI.CS.6

Which statement best captures the author's purpose in the text?

   A. The article shows how Jefferson and Adams' disagreements negatively impacted both their friendship and America.
   B. The article encourages readers to resolve whatever problems they might have with a close friend.
   C. The article illustrates how difficult it is to maintain close relations with people of opposing views.
   D. The article emphasizes that true friendship can survive extreme disagreement, like the one between Jefferson and Adams.

4. RI.KID.1

PART B: Which detail from the text best supports the answer to Part A?

A. "Adams had said, 'Well, I understand that you are to beat me in this contest, and I will only say that I will be as faithful a subject as any you will have.'" (Paragraph 9)
B. "Jefferson and Adams wrote several more letters, but they were filled with hurt. To halt more harsh words, they stopped writing." (Paragraph 13)
C. "Jefferson had written to Adams, 'We were fellow laborers in the same cause... Still we did not expect to be without rubs and difficulties; and we had them.'" (Paragraph 14)
D. **"Many friends have problems. But theirs were surely greater than ours... Even so, their respect for each other brought them back together." (Paragraph 19)**

5.   RI.KID.3

Explain the connection between Jefferson and Adams' issues and their political decisions. Cite evidence from the article in your response.

1. **Answers will vary; students should discuss how Thomas Jefferson and John Adams sometimes allowed their personal disagreements to influence their political actions. For instance, "before Jefferson took office, Adams quickly used a new law to appoint several judges" (Paragraph 10), which impacted Jefferson's presidency. Additionally, students should discuss how Jefferson retaliated by reversing Adams' recently passed law "since he felt that Adams's appointment of judges was a personal attack," causing John Adams' son to lose his position (Paragraph 11). Lastly, students should discuss how "President Jefferson pardoned everyone jailed by Adams" when he took office (Paragraph 11). While these could have been genuine decisions on Jefferson's part, they could also be seen as retaliation against Adams and his decisions. In all, it is clear that Jefferson and Adams' personal disagreements with each other had an effect on some of their political decisions.**

ANSWER KEY Text #2 "We Have Been Friends Together"

by Caroline Elizabeth Sarah Norton 1830

1.   RL.KID.2

PART A: Which statement best expresses a theme of the poem?

A. Even the strongest friendship will end with an argument.
B. A friendship that has endured difficult times is more likely to last.
C. **Best friends that have been through good and bad times can survive anything.**
D. No matter how close friends are in the beginning, they will eventually grow apart.

2.   RL.KID.1

PART B: Which quote from the poem best supports the answer to Part A?

A. "Since first beneath the chestnut-trees / In infancy we played." (Lines 3-4)
B. "But laughter now hath fled thy lip, / And sullen glooms thy brow" (Lines 13-14)

D. "We have been sad together — / Oh! what shall part us now?" (Lines 23-24)

3. RL.CS.4

How does the repetition of the phrase "Shall a light word part us now?" contribute to the meaning of the poem?

A. **It emphasizes the disbelief the speaker feels that their friendship should end.**
B. It stresses the real concern that speaker feels that their friendship will end.
C. It shows how unbothered the speaker is by the possibility of their friendship ending.
D. It minimizes the speaker's fight with their friend.

4. RL.CS.4

What does "O'er the grass-grown graves, where slumber'd / The hopes of early years" in lines 19-20 mean as used in the poem?

A. The speaker and their friend lost someone close to them.
B. The speaker considers their friendship to be dead.
C. **The speaker and their friend have been greatly let down in the past.**
D. The speaker doesn't think there is hope for their friendship in the future.

5. RL.CS.5

How does the final stanza contribute to the development of the poem's theme? Cite evidence from the poem in your response.

1. **Answers will vary; students should explain that the final stanza of the poem focuses on the difficult times the friends have been through as a reason to resolve their conflict. While the first two stanzas explore the strength of their friendship and how the feud developed, the final stanza shows how the "light word" between them doesn't compare to everything else they have been through together. For example, the speaker states, "We have wept, with bitter tears" to describe the sad times they have endured (Line 18). Additionally, they have encountered other challenges, in the form of "the grass-grown graves," where past hopes are buried (Lines 19-20). Despite these difficult times, the speaker states, "The voices which are silent there / Would bid thee clear thy brow," encouraging the friend to resolve their anger (Lines 21-22). The final line "Oh! what shall part us now?" reiterates the speaker's belief that the sad times they have endured prove that their friendship can survive "a light word" (Line 24).**

RELATED MEDIA LINKS and Descriptions

Related Media #1: [The Jefferson and Adams Letters](#)
Show this video to students to provide them with additional information about Thomas Jefferson and John Adams' relationship and eventual renewed correspondence. Ask students to discuss how the video depicts the ups and downs of Jefferson and Adams' relationship. What did the correspondence between them reveal about their relationship later in life? (3:26)

Related Media #2: [Video Lesson- Friendship Soup Recipe](#)

In this video, kids talk about what ingredients make "friendship soup." Ask students to discuss whether they agree with the ingredients that the kids believe are necessary for friendship. How does the poem echo some of these essential ingredients for friendship? If you were going to make "friendship soup," what ingredients would you include? (3:12)

Grab and Go Writing Checklists

Grades 6-9 Short Response

Informational /Explanatory	❏ Has a topic sentence that addresses the main question ❏ Includes ideas that support the topic sentence ❏ Cites at least two pieces of evidence from the text that most strongly support the ideas ❏ Elaborates and explains how the text evidence supports the topic and ideas ❏ Ends with concluding sentences or statement
Entire Response	❏ Has few errors in sentence formatting, capitalization, punctuation, and spelling.

Argument	❏ Has a claim that responds to the main question ❏ Includes ideas that support the claim ❏ Cites at least two pieces of evidence from the text that most strongly support the claim ❏ Elaborates and explains how the text evidence supports the ideas and the claim ❏ Ends with concluding sentences or statement
Entire Response	❏ Has few errors in sentence formatting, capitalization, punctuation, and spelling.

6.NS Jayden's Snacks

Alignments to Content Standards: 6.NS.B.3

Task

Jayden has $20.56. He buys an apple for 79 cents and a granola bar for $1.76.

a. How much money did Jayden spend?

b. How much money does Jayden have now?

IM Commentary

Building on their fifth grade experiences with operations on decimal numbers, sixth grade students should find the task to be relatively easy. The emphasis her is on whether students are actually fluent with the computations, so teachers could use this as a formative assessment task if they monitor how students solve the problem. Students who struggle with this task in sixth grade will need extra support.

Edit this solution

Solution

a. Jayden paid 79 cents for an apple. 79 cents is also written as $0.79. Jayden paid $1.76 for a granola bar. All together Jayden spent $0.79 + $1.76 = $2.55.

b. If Jayden started with $20.56 and spent $2.55, Jayden has $20.56 - $2.55 = $18.01 left.

6.NS Buying Gas

Alignments to Content Standards: 6.NS.B.3

Task

Sophia's dad paid $43.25 for 12.5 gallons of gas. What is the cost of one gallon of gas?

IM Commentary

There are two aspects to fluency with division of multi-digit numbers: knowing when it should be applied, and knowing how to compute it. While this task is very straightforward, it represents the kind of problem that sixth graders should be able to recognize and solve relatively quickly. Easily recognizing contexts that require division is a necessary conceptual prerequisite to more complex modeling problems that students will be asked to solve later in middle and high school.

This task also has a natural carryover to work with ratios and rates, so students should also be building connections between these kinds of division problems and finding unit rates.

Solution

Sophia's dad paid $43.25 for 12.5 gallons of gas. If we think of a gallon of gas as a group, we know that the cost of 12.5 groups is $43.25. The question we are asked to answer is, "What is the cost of one gallon?" which is the same as asking, "How many dollars in one group?" To find the answer to this question we must evenly distribute the $43.25 amongst the 12.5 groups. This is the meaning of $43.25 \div 12.5$. So the cost of one gallon

of gas is $43.25 \div 12.5 = \$3.46.$

Addition of Decimals I

Progression of Exercises

1. $1.3 + 2.1$

    3.4

2. $14.3 + 12.6$

    26.9

3. $56.56 + 12.12$

    68.68

4. $24.5 + 42.9$

    67.4

5. $365.8 + 127.4$

    493.2

6. $76.67 + 40.33$

    117

7. $872.78 + 135.86$

    1,008.64

8. $549.2 + 678.09$

    1,227.29

9. $821.3 + 106.87$

    928.17

10. $108.97 + 268.03$

    377

Explore Ordering Positive and Negative Numbers

Purpose
- **Explore** the idea that you can use a number line to compare positive and negative numbers.
- **Understand** that the greater of two numbers lies to the right of the other number on a horizontal number line and above the other number on a vertical number line.

START ▸ CONNECT TO PRIOR KNOWLEDGE

Same and Different

4	−3
15	−2

A B
C D
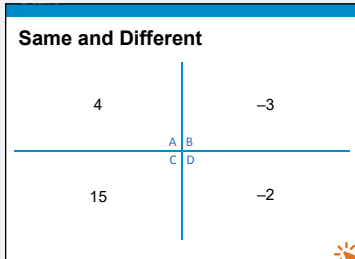
Possible Solutions

All are whole-number integers.

A and C are greater than 0.

B and D are less than 0.

A and D are even integers.

B and C are odd integers.

WHY? Support students' facility with positive and negative numbers.

TRY IT   SMP 1, 2, 4, 5, 6

Make Sense of the Problem
See **Connect to Culture** to support student engagement. Before students work on Try It, use **Three Reads** to help them make sense of the problem. After the first read, ask students what they know about football. After the second read, clarify the terms *worst* and *best* as needed. After the third read, ask: *Do you think the sign of the numbers will be important? Why or why not?*
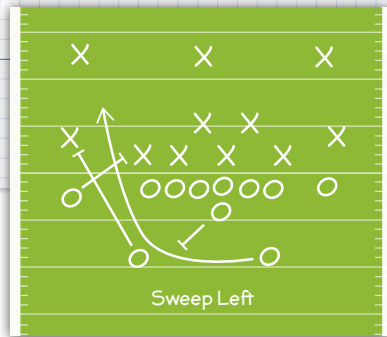
DISCUSS IT   SMP 2, 3, 6

Support Partner Discussion
After students work on Try It, have them respond to Discuss It with a partner. Listen for understanding of:
- −3, −4, and −5 as less than 0.
- 2 and 4 as greater than 0.
- the numbers need to be ordered from least to greatest.

Explore Ordering Positive and Negative Numbers

Previously, you learned about positive and negative numbers. In this lesson, you will learn about ordering and comparing positive and negative numbers.

➤ **Use what you know to try to solve the problem below.**

A diagram of a football play

A youth football team tries several different plays. The goal of each play is to gain yards. The coach records the result of each play. List the plays from worst to best.

Name of Play	Wedge	Hook	Flag	Draw	Sweep	Toss
Result: Yards Gained (+) or Lost (−)	−3	+4	−5	+2	0	−4

TRY IT

Math Toolkit algebra tiles, number lines, two-color counters

Possible work:

SAMPLE A

A loss of 5 yd is worse than a loss of 4 yd and a loss of 4 yd is worse than a loss of 3 yd.

A gain of 4 yd is better than a gain of 2 yd.

The value 0 comes between the losses and gains.

Worst to best: Flag, Toss, Wedge, Sweep, Draw, Hook

SAMPLE B

Flag   Wedge   Draw
    Toss   Sweep   Hook

−5 −4 −3 −2 −1 0 1 2 3 4 5

The worst play is Flag, then Toss, Wedge, Sweep, and Draw. The best is Hook.

DISCUSS IT

Ask: What did you do first to decide which play is the worst?

Share: The first thing I did was . . .

◎ **Learning Targets**   SMP 1, SMP 2, SMP 3, SMP 4, SMP 5, SMP 6
- Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.
- Write, interpret, and explain statements of order for rational numbers in real-world contexts.

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Common Misconception Listen for students who order the numbers from least to greatest based on the value of the numeral, with 0 as the least number and −5 as the greatest number. As students share their strategies, ask them to apply their reasoning to a pair of opposites, such as 4 and −4.

Select and Sequence Student Strategies
Select 2–3 samples that represent the range of student thinking in your classroom. Here is one possible order for class discussion:
- comparing the relationship of the numbers using words describing each situation
- **(misconception)** ordering the numbers based on the value of the numeral
- plotting the values on a number line

Facilitate Whole Class Discussion

Call on students to share selected strategies. Prompt students to participate actively by looking at the speaker and asking clarifying questions.

Guide students to **Compare and Connect** the representations. If discussion lags, ask students to turn and talk to a partner about the strategies before resuming the class discussion.

ASK *How do [student name]'s and [student name]'s representations of the problem compare the numbers given?*

LISTEN FOR The numbers can be compared by calculating their distance from 0, or they can be compared by using words that describe the gains or losses so that they can determine the order of plays from worst to best.

CONNECT IT   SMP 2, 4, 5

1 **Look Back** Look for understanding that the negative numbers are less than the positive numbers, so the play with the most yards lost is the worst and the play with the most yards gained is the best.

DIFFERENTIATION | RETEACH or REINFORCE

Hands-On Activity
Locate positive and negative numbers on a number line.

If students are unsure about locating numbers on a number line, then use this activity to help students visualize the relationship between numbers and the number line.

Materials For each pair: 1 sticky note

- Display a horizontal number line and place a sticky note with 0 on it at the center of the number line.
- Have half the pairs write a positive number on their sticky note, and have the other half write a negative number on their sticky note.
- Call on a student from one pair to place their number on the number line, locating it in relation to 0. Ask: *Is this number placed correctly?*
- Choose a student from another pair to place their number onto the board, deciding how to locate the number in relation to 0 and the number already placed. Ask: *Is this number placed correctly?*
- Continue until all numbers are placed in the correct order from least to greatest.
- Repeat with a vertical number line.

CONNECT IT

1 **Look Back** List the plays from worst to best. Explain how you know.

Flag, Toss, Wedge, Sweep, Draw, Hook; Possible explanation: Plot the results on a horizontal number line. The worst result is farthest left because it shows the most yards lost. The plays get better as you move to the right.

2 **Look Ahead** The goal of a football play is to gain yards. The more yards gained or the fewer yards lost, the better the play is. Number lines can be used to help make these types of comparisons with positive and negative numbers.

a. Look at the horizontal number line. Point *D* is farther to the right from 0 than point *C*. Which point represents a greater number?
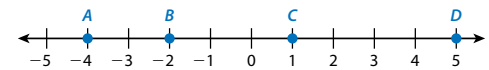
Point *D*

b. Point *A* is farther to the left from 0 than point *B*. Which point represents a greater number?

Point *B*

c. Look at the vertical number line. Point *G* is farther down from 0 than Point *F*. Which point represents a greater number?

Point *F*

d. Point *E* is above Point *F*. Which point represents a lesser number? What is always true when comparing a negative number and a positive number?

Point *F*; A negative number is always less than a positive number.

3 **Reflect** How do the values change on a horizontal number line as you move left? How do the values change on a vertical number line as you move up?

Possible answer: On a horizontal number line, values decrease as you move left. On a vertical number line, values increase as you move up.

2 **Look Ahead** Point out that vertical and horizontal number lines can be used to order positive and negative numbers. Students should recognize that positive numbers are greater than negative numbers.

CLOSE ▶ EXIT TICKET

3 **Reflect** Look for understanding that the value of a number increases as you move right on a horizontal number line and up on a vertical number line, and the value decreases as you move left on a horizontal number line and down on a vertical number line.

Error Alert If students explain that moving left on a horizontal number line means values become negative and moving up on a vertical number line means values become positive, then have students move from 5 to 4 on a horizontal number line and from –5 to –4 on a vertical number line to encourage a more specific explanation.

Prepare for Ordering Positive and Negative Numbers

Support Vocabulary Development

Assign **Prepare for Ordering Positive and Negative Numbers** as extra practice in class or as homework.

If you have students complete this in class, then use the guidance below.

Ask students to consider the terms *positive numbers, negative numbers, rational numbers,* and *inequality*. Encourage students to think about *positive numbers* and *negative numbers* in terms of how they compare to 0 and to consider the different forms in which rational numbers can be written. If students believe that an *inequality* describes two numbers that are simply not equal and struggle to give examples, remind them that *inequality symbols* are used to compare unequal values.

Have students work in pairs to complete the graphic organizer. Invite pairs to share their completed organizers, and then prompt a whole-class comparative discussion of the words and examples given.

Have students share examples of negative rational numbers for problem 2 and discuss with a partner how to compare the numbers to 0.
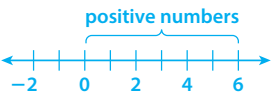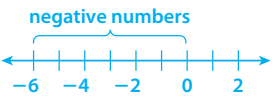
Problem Notes

1. Students should recognize that positive numbers are greater than zero, negative numbers are less than zero, rational numbers can be written as decimals or fractions, and inequalities show how any two numbers with different values compare to one another. Students may understand that an inequality can be used to compare negative numbers and positive numbers. Student responses may include inequality statements that include symbols, number line representations, or lists.

2. Students should recognize that 0 is greater than any negative number, so their inequality statements should start with $0 >$ and end with the negative rational number of their choice.

Prepare for Ordering Positive and Negative Numbers

1. Think about what you know about positive and negative numbers. Fill in each box. Use words, numbers, and pictures. Show as many ideas as you can.

Possible answers:

Word	In My Own Words	Example
positive numbers	Numbers that are greater than 0	positive numbers number line: −2 0 2 4 6
negative numbers	Numbers that are less than 0	negative numbers number line: −6 −4 −2 0 2
rational numbers	Numbers that can be written as positive or negative fractions	-1.5 is a rational number. It can be written as $-\frac{3}{2}$.
inequality	Two unequal values that are compared using a less than ($<$) or greater than ($>$) sign	$5 > 3$

2. Choose a negative rational number. Write an inequality using the symbol $>$ to compare your number to 0. Explain your thinking.

   Possible answer: -5.25; $0 > -5.25$; Negative numbers are numbers that are less than 0, so 0 is greater than any negative number.

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REAL-WORLD CONNECTION

Elevators sometimes go under the main floor of a building into basement levels. An elevator button to a basement level is often labeled with an *L* in front of the floor number to indicate it is below the main floor, such as *L2*. This is similar to negative values where a negative sign ($-$) is written in front of the number to indicate it is less than 0. Inequalities are also often used to describe height limits on elevators. For example, an elevator typically cannot travel a distance of more than 1,640 feet. Otherwise, the ropes that lift it get too heavy. That means the distance the elevator travels must be less than 1,640 feet. Ask students to think of other real-world situations that include positive and negative numbers or use inequalities.

③ Problem 3 provides another look at ordering positive and negative numbers. This problem is similar to the problem about football plays. In both problems, positive and negative numbers need to be ordered from least to greatest. This problem asks for students to order the scores from a trivia game from worst to best.

Students may choose to use a number line to solve.

Suggest that students use **Say It Another Way** by reading the problem out loud and asking a student to paraphrase it. Prompt other students to give a thumbs up or thumbs down to indicate whether they think the paraphrased problem is complete and accurate.

③ Some friends play history trivia. Players gain 1 point for a correct answer. Players lose 1 point for an incorrect answer. The player with the greatest score wins. The players' scores are shown in the table.

Player	Score
Brett	−7
Ellema	−1
Felipe	+3
Jennifer	0
Kamal	+2
Riley	−5

a. List the players from worst score to best score. Show your work.

The negative scores are −7, −1, −5.

A score of −7 is worse than a score of −5, and a score of −5 is worse than a score of −1.

−7 is the worst score, then −5, then −1.

The positive scores are 3, 2.

A score of 3 is better than a score of 2.

3 is the best, then 2 is next best.

A score of 0 comes between the negative scores and positive scores.

SOLUTION ___Brett, Riley, Ellema, Jennifer, Kamal, Felipe___

b. Check your answer to problem 3a. Show your work.

On the number line, the worst score is the farthest left. The scores get better as you move to the right.

Susan B. Anthony was born in 1820.

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DIFFERENTIATION | ENGLISH LANGUAGE LEARNERS Use with **Session 2 Apply It**

ACADEMIC VOCABULARY

Elevation is the height above or below a given level, often sea level.

Levels 1–3: Reading/Writing

Help students interpret and respond to Apply It problem 9. Display the lesson term *inequality*. Review that *in-* means *not*, so *inequality* means *not equal*. Adapt **Three Reads** to help students make sense of the problem. For Read 1, review the vocabulary. Have students draw a vertical line. Label *sea level*. Help them draw arrows to show *below* and *higher*. After Read 2, help students tell what they need to find. For Read 3, help students add the quantities to the sketches and write their responses:

• The _____ can dive to a lower elevation.

Levels 2–4: Reading/Writing

Help students interpret and respond to Apply It problem 9. Display the lesson term *inequality*. Explain that *in-* means *not*. Write an example of an *inequality* and invite students to explain the relationship. Adapt **Three Reads** to help students make sense of the problem. For Read 1, call on volunteers to tell what the problem is about. For Read 2, have students tell what they need to find. For Read 3, help students tell how they will use the quantities and write the answer:

• The _____ can dive to a lower elevation because _____ .

Levels 3–5: Reading/Writing

Help students make sense of Apply It problem 9. Display the lesson term *inequality*. Have students use the meaning of *in-* to define the term with a partner. Adapt **Three Reads** by having students work together in pairs to answer the questions. Then have them take turns paraphrasing the problem. Call on volunteers to confirm understanding.

Allow time for students to write an inequality statement, and then encourage them to add a written explanation of the inequality statement using context from the problem.

Understanding Positive and Negative Numbers

1 The points on the number line are opposite numbers. The tick marks represent intervals of 1 unit.

-5 0 5
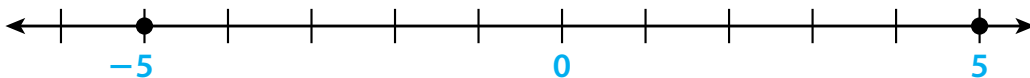
Label 0 at the correct spot on the number line.

Label the point plotted to the right of 0.

Label the point plotted to the left of 0.

2 Use this list of numbers to answer the following questions:

$0, 4, -2, \frac{2}{3}, -1.8, 16, 3.2, -\frac{5}{4}$

Which numbers are rational numbers that are not integers?

$\frac{2}{3}, -1.8, 3.2, -\frac{5}{4}$

Of the remaining numbers, which are integers but not whole numbers?

-2

Of the remaining numbers, which are whole numbers?

$0, 4, 16$

3 Use the following terms to complete the following statements: *integers*, *rational numbers,* and *whole numbers*. Use each term only once.

The counting numbers and zero are __whole numbers__.

The counting numbers and their opposites, along with zero, are __integers__.

Integers and the decimal equivalents of fractions are __rational numbers__.

Understanding Positive and Negative Numbers *continued*

4 Plot and label 4, −3, 1, and their opposites on the number line.

5 If several points are graphed on a number line, is the point that is the farthest from 0 always the greatest? Explain.

No; Possible explanation: It depends on whether the number is positive or negative. If it is positive, then it is the greatest number. If it is negative, it is the least number.

Addition of Decimals II

Progression of Exercises

1. $4.2 + 3.5$

   7. 7

2. $452. + 53.7$

   98. 9

3. $32.45 + 24.77$

   57. 22

4. $16.87 + 17.3$

   34. 17

5. $78.04 + 8.29$

   86. 33

6. $247.12 + 356.78$

   603. 9

7. $74.54 + 0.97$

   75. 51

8. $154 + 85.3$

   239. 3

9. $438.21 + 195.7$

   633. 91

10. $0.648 + 3.08$

    3. 728

Lesson 4: The Opposite of a Number

Student Outcomes

- Students understand that each nonzero integer, a, has an opposite, denoted $-a$, and that $-a$ and a are opposites if they are on opposite sides of zero and are the same distance from zero on the number line.
- Students recognize the number zero is its own opposite.
- Students understand that since all counting numbers are positive, it is not necessary to indicate such with a plus sign.

Lesson Notes

In this lesson, students practice graphing points on the number line. In particular, students determine the appropriate scale given a set of opposites in real-world situations. Students pay careful attention to the meaning of zero in problem situations and how opposites are related in the context of a given situation. Create a floor model of a number line prior to the lesson.

Classwork

Opening (5 minutes): What Is the Relationship?

Students work in pairs to determine the relationships between sets of words with or without pictures. Display the task to the whole group.

- Find the relationship between the sets of words.

Fast → Slow	Rough → Smooth	Open → Close	Fiction → Nonfiction
Light → Dark	Empty → Full	Accept → Refuse	Shallow → Deep
Dirty → Clean	Apart → Together	Question → Answer	Ancient → Modern
Alike → Different	All → None	Dangerous → Safe	Correct → Incorrect
Defeat → Victory	Easy → Hard	Future → Past	Break → Fix
Inside → Outside	Up → Down	Wet → Dry	Entrance → Exit

> □   *The words are opposites of each other.*

- Once you have determined the relationship, create your own examples, including a math example.
  - □   *Left → Right*
  - □   *Cold → Hot*
  - □ $5 \to -5$

> **Scaffolding:**
> - Differentiate levels by providing groups with a set of 8–10 preselected words cut out individually on card stock. Use more challenging vocabulary words for advanced learners, and provide pictures with words for English language learners or inclusion students.
> - Ask language arts and science teachers for input to provide more variation in vocabulary.

Exercise 1 (10 minutes): Walk the Number Line

Distribute an index card to each student that is labeled with an integer ranging from -10 to 10. Create enough cards based on the class size. Have students stand or place their index cards on the number line one at a time. When placing their numbers, students should start at zero and move in the direction of their numbers, counting out loud. Pose discussion questions after the exercise.

Discuss the following:

- What patterns do you see with the numbers on the number line?
  - *For each number to the right of zero, there is a corresponding number the same distance from zero to the left.*
- What does zero represent on the number line?
  - *Zero represents the reference point when locating a point on the number line. It also represents the separation of positive numbers from negative numbers.*
- What is the relationship between any two opposite numbers and zero on the number line?
  - *Opposite numbers are the same distance from zero, but they are on opposite sides of zero.*

> *Scaffolding:*
> - Remind students how to locate a negative number on the number line from Lesson 1.
> - For advanced learners, provide positive and negative fractions. Pose the last three questions for inquiry only.

Read and display the statement below to the class, and then model Example 1.


Exercise 1: Walk the Number Line

1. Each nonzero integer has an opposite, denoted $-a$; $-a$ and a are opposites if they are on opposite sides of zero and the same distance from zero on the number line.

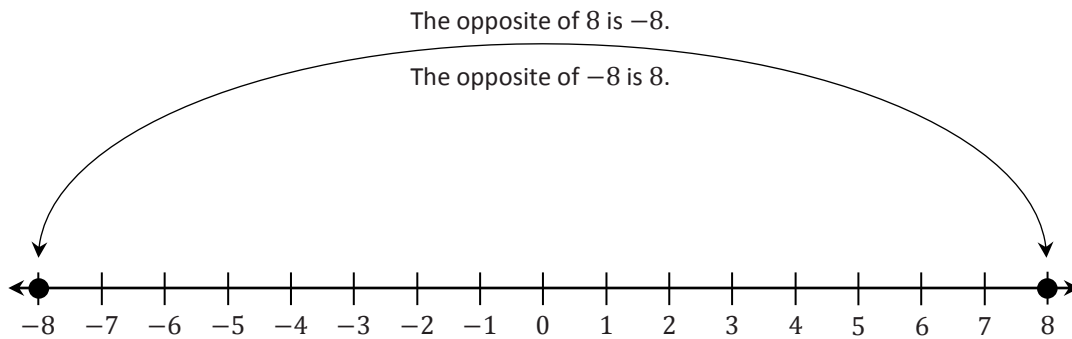## Example 1 (5 minutes): Every Number Has an Opposite

Read the example out loud. Model how to graph both points, and explain how they are related.

Example 1: Every Number Has an Opposite

Locate the number 8 and its opposite on the number line. Explain how they are related to zero.
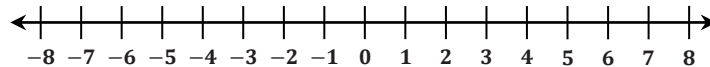
- First, start at zero, and move 8 units to the right to locate positive 8. So, the opposite of 8 must be 8 units to the left of zero. What number is 8 units to the left of zero?
  - -8
- 8 and -8 are the same distance from zero. Since both numbers are the same distance from zero but on opposite sides of zero on the number line, they are opposites.
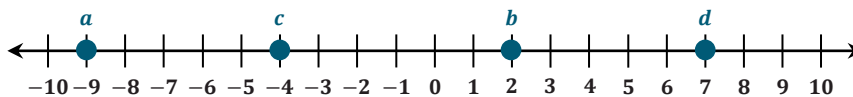
The opposite of 8 is −8.

The opposite of −8 is 8.

$$\overset{\curvearrowleft}{-8 \quad -7 \quad -6 \quad -5 \quad -4 \quad -3 \quad -2 \quad -1 \quad 0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8}$$

Exercises 2–3 (5 minutes)

Students work independently to answer the following questions. Allow 2–3 minutes for review as a whole group.

> **Exercises 2–3**
>
> 2. Locate and label the opposites of the numbers on the number line.
>
>   a. 9
>
>   b. −2
>
>   c. 4
>
>   d. −7
>
> $$\begin{array}{c} a \quad\quad\quad c \quad\quad\quad\quad b \quad\quad\quad d \\ -10\, -9\, -8\, -7\, -6\, -5\, -4\, -3\, -2\, -1\ 0\ 1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 10 \end{array}$$
>
> 3. Write the integer that represents the opposite of each situation. Explain what zero means in each situation.
>
>   a. 100 feet above sea level
>
>   −100; *zero represents sea level.*
>
>   b. 32°C below zero
>
>   32; *zero represents 0 degrees Celsius.*
>
>   c. A withdrawal of $25
>
>   25; *zero represents no change, where no withdrawal or deposit is made.*

Example 2 (8 minutes): A Real-World Example

The purpose of this example is to show students how to graph opposite integers given a real-world situation. In pairs, have students read the problem aloud to each other. Instruct students to circle any words that might be important to solve the problem. Pose questions to the class while guiding students as a whole group through the example.

Example 2: A Real-World Example

Maria decides to take a walk along Central Avenue to purchase a book at the bookstore. On her way, she passes the Furry Friends Pet Shop and goes in to look for a new leash for her dog. Furry Friends Pet Shop is seven blocks west of the bookstore. She leaves Furry Friends Pet Shop and walks toward the bookstore to look at some books. After she leaves the bookstore, she heads east for seven blocks and stops at Ray's Pet Shop to see if she can find a new leash at a better price. Which location, if any, is the farthest from Maria while she is at the bookstore?

Determine an appropriate scale, and model the situation on the number line below.

Answers will vary.
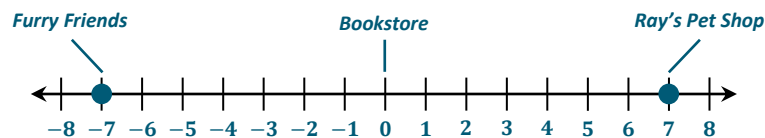
Explain your answer. What does zero represent in the situation?

The pet stores are the same distance from Maria, who is at the bookstore. They are each 7 blocks away but in opposite directions. In this example, zero represents the bookstore.

Discuss the following:

- How did you determine an appropriate scale for the situation if all blocks in the city are the same length?
  - *Because both stores are seven blocks in opposite directions, I knew that I could count by ones since the numbers are not that large.*
- Where would the bookstore be located on the number line?
  - *The bookstore would be located at zero.*
- Where would Ray's Pet Shop be located on the number line? Explain.
  - *It would be seven units to the right of zero because it is seven blocks east of the bookstore.*
- What integer represents this situation?
  - 7
- Where would Furry Friends be located on the number line? Explain.
  - *It would be seven units to the left of zero because it is seven blocks west of the bookstore.*
- What integer represents this situation?
  - -7
- What do you notice about the distance between both stores from the bookstore?
  - *Both stores are the same distance from the bookstore but in opposite directions.*

Students should practice clarifying any misconceptions about how to represent these situations as integers.

MP.6

- "Seven blocks to the left" would not be written as "−7 blocks from the bookstore" or "−7 units from 0."
- Positive numbers are counting numbers and do not have a sign.
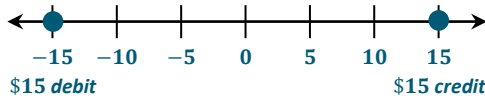
Exercises 4–6 (5 minutes)

Students work independently to answer the following questions. Allow 2–3 minutes for review as a whole group.

Exercises 4–6

Read each situation carefully, and answer the questions.

4. On a number line, locate and label a credit of $15 and a debit for the same amount from a bank account. What does zero represent in this situation?

Zero represents no change in the balance.

$15 *debit* $15 *credit*

5. On a number line, locate and label 20°C below zero and 20°C above zero. What does zero represent in this situation?

Zero represents 0°C.

20 *degrees below* 0   20 *degrees above* 0

6. A proton represents a positive charge. Write an integer to represent 5 protons. An electron represents a negative charge. Write an integer to represent 3 electrons.

5 *protons:* 5

3 *electrons:* −3
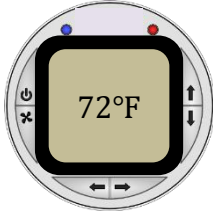

Closing (2 minutes)

- What is the relationship between any number and its opposite when plotted on a number line?
  - *A nonzero number and its opposite are both the same distance away from zero on a number line, but they are on opposite sides of zero.*
- How would you use this relationship to locate the opposite of a given number on the number line?
  - *I would use the given number to find the distance from zero on the opposite side.*
- Will this process work when finding the opposite of zero?
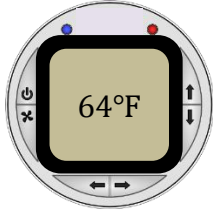 - *No, because zero is its own opposite.*

Exit Ticket (5 minutes)

Exit Ticket Sample Solutions
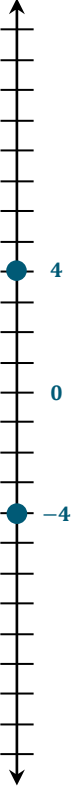
In a recent survey, a magazine reported that the preferred room temperature in the summer is $68°F$. A wall thermostat, like the ones shown below, tells a room's temperature in degrees Fahrenheit.

Sarah's Upstairs Bedroom

$72°F$

Downstairs Bedroom

$64°F$

a. **Which bedroom is warmer than the recommended room temperature?**

The upstairs bedroom is warmer than the recommended room temperature.

b. **Which bedroom is cooler than the recommended room temperature?**

The downstairs bedroom is cooler than the recommended room temperature.

c. **Sarah notices that her room's temperature is $4°F$ above the recommended temperature, and the downstairs bedroom's temperature is $4°F$ below the recommended temperature. She graphs 72 and 64 on a vertical number line and determines they are opposites. Is Sarah correct? Explain.**

No. Both temperatures are positive numbers and not the same distance from 0, so they cannot be opposites. Both numbers have to be the same distance from zero, but one has to be above zero, and the other has to be below zero in order to be opposites.

d. **After determining the relationship between the temperatures, Sarah now decides to represent $72°F$ as 4 and $64°F$ as -4 and graphs them on a vertical number line. Graph 4 and -4 on the vertical number line on the right. Explain what zero represents in this situation.**

Zero represents the recommended room temperature of $68°F$. Zero could also represent not being above or below the recommended temperature.

Problem Set Sample Solutions

1. **Find the opposite of each number, and describe its location on the number line.**

   a. -5

   The opposite of -5 is 5, which is 5 units to the right of (or above) 0.

   b. 10

   The opposite of 10 is -10, which is 10 units to the left of (or below) 0.

   c. -3

   The opposite of -3 is 3, which is 3 units to the right of (or above) 0.

   d.   **15**

   The opposite of **15** *is* **−15,** *which is* **15** *units to the left of (or below)* **0.**

2.   **Write the opposite of each number, and label the points on the number line.**

   a.   **Point *A*: the opposite of 9**

      −9

   b.   **Point *B*: the opposite of −4**

      4

   c.   **Point *C*: the opposite of −7**

      7

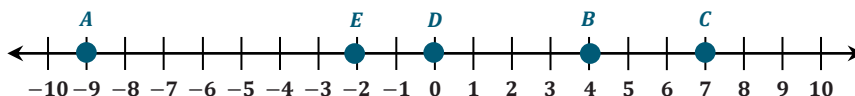   d.   **Point *D*: the opposite of 0**

      0

   e.   **Point *E*: the opposite of 2**

      −2

3.   **Study the first example. Write the integer that represents the opposite of each real-world situation. In words, write the meaning of the opposite.**

   a.   **An atom's positive charge of 7**   **−7, *an atom's negative charge of* 7**

   b.   **A deposit of $25**   **−25, *a withdrawal of* $25**

   c.   **3,500 feet below sea level**   **3,500, 3,500 *feet above sea level***

   d.   **A rise of 45°C**   **−45, *a decrease of* 45°C**

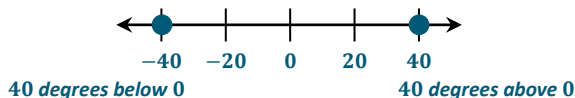   e.   **A loss of 13 pounds**   **13, *a gain of* 13 *pounds***

4.   **On a number line, locate and label a credit of $38 and a debit for the same amount from a bank account. What does zero represent in this situation?**

   Zero represents no change in the balance.

5.   **On a number line, locate and label 40°C below zero and 40°C above zero. What does zero represent in this situation?**

   Zero represents **0°C.**

Exit Ticket Sample Solutions

1. Jane completes several example problems that ask her to the find the opposite of the opposite of a number, and for each example, the result is a positive number. Jane concludes that when she takes the opposite of the opposite of any number, the result will always be positive. Is Jane correct? Why or why not?

   She is not correct. The opposite of the opposite of a number is the original number. So, if Jane starts with a negative number, she will end with a negative number.

2. To support your answer from the previous question, create an example, written as an equation. Illustrate your example on the number line below.

   If Jane starts with -7, the opposite of the opposite of -7 is written as $-(-(-7)) = -7$ or the opposite of -7: $-(-7) = 7$; the opposite of 7: $-(7) = -7$.
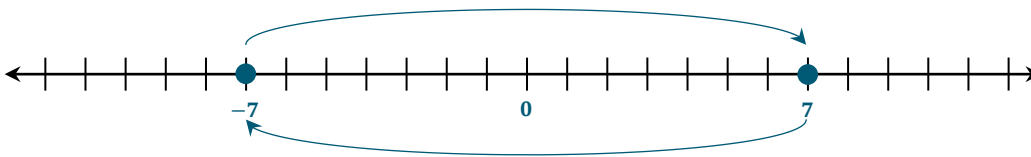
Problem Set Sample Solutions

1. Read each description carefully, and write an equation that represents the description.

   a. The opposite of negative seven

   $-(-7) = 7$

   b. The opposite of the opposite of twenty-five
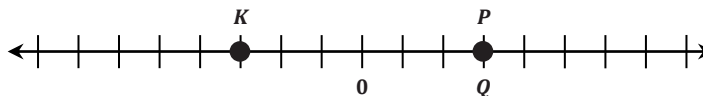
   $-(-(25)) = 25$

   c. The opposite of fifteen

   $-(15) = -15$

   d. The opposite of negative thirty-six

   $-(-36) = 36$

2. Jose graphed the opposite of the opposite of 3 on the number line. First, he graphed point P on the number line 3 units to the right of zero. Next, he graphed the opposite of P on the number line 3 units to the left of zero and labeled it K. Finally, he graphed the opposite of K and labeled it Q.

   a. Is his diagram correct? Explain. If the diagram is not correct, explain his error, and correctly locate and label point Q.

   Yes, his diagram is correct. It shows that point P is 3 because it is 3 units to the right of zero. The opposite of 3 is -3, which is point K (3 units to the left of zero). The opposite of -3 is 3, so point Q is 3 units to the right of zero.

b. Write the relationship between the points:

P and K _They are opposites._

K and Q _They are opposites._

P and Q _They are the same._

3. Read each real-world description. Write the integer that represents the opposite of the opposite. Show your work to support your answer.

a. A temperature rise of 15 degrees Fahrenheit

-15 _is the opposite of_ 15 _(fall in temperature)._
15 _is the opposite of_ -15 _(rise in temperature)._
$-(-(15)) = 15$

b. A gain of 55 yards

-55 _is the opposite of_ 55 _(loss of yards)._
55 _is the opposite of_ -55 _(gain of yards)._
$-(-(55)) = 55$

c. A loss of 10 pounds

10 _is the opposite of_ -10 _(gain of pounds)._
-10 _is the opposite of_ 10 _(loss of pounds)._
$-(-(-10)) = -10$

d. A withdrawal of $\$2,000$

$2,000$ _is the opposite of_ $-2,000$ _(deposit)._
$-2,000$ _is the opposite of_ $2,000$ _(withdrawal)._
$-(-(-2,000)) = -2,000$

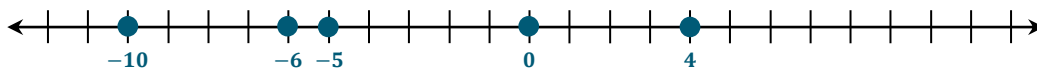4. Write the integer that represents the statement. Locate and label each point on the number line below.

a. The opposite of a gain of 6   __-6__

b. The opposite of a deposit of $\$10$ __-10__

c. The opposite of the opposite of 0   __0__

d. The opposite of the opposite of 4   __4__

e. The opposite of the opposite of a loss of 5   __-5__

Subtraction of Decimals

Progression of Exercises

1. $49.5 - 32.1 =$

   17.4

2. $7.48 - 2.26 =$

   5.22

3. $116.32 - 42.07 =$

   74.25

4. $128.43 - 87.3 =$

   41.13

5. $239.5 - 102.37 =$

   137.13

6. $448.9 - 329.18 =$

   119.72

7. $134.25 - 103.17 =$

   31.08

8. $187.49 - 21 =$

   166.49

9. $336.91 - 243.38 =$

   93.53

10. $323.2 - 38.74 =$

    284.46

6.NS Mile High

Alignments to Content Standards: 6.NS.C.5

Task

Denver, Colorado is called "The Mile High City" because its elevation is 5280 feet above sea level. Someone tells you that the elevation of Death Valley, California is -282 feet.

a. Is Death Valley located above or below sea level? Explain.

b. How many feet higher is Denver than Death Valley?

c. What would your elevation be if you were standing near the ocean?

IM Commentary

The first two parts of this task ask students to interpret the meaning of signed numbers and reason based on that meaning in a context where the meaning of zero is already given by convention. In 7th grade, students will be asked to connect this reasoning to finding the difference of signed numbers, but they are not expected to know how to add and subtract signed numbers in 6th grade.

The third part is meant as a discussion point about what, exactly, "sea level" means, and will require teachers either to supply more information about the meaning of sea level or to encourage students to research this. Since the oceans have tides, sea level is defined to be the average height of the ocean surface (and is technically called mean sea level). As a result, it is possible to be standing at the edge of the water and be at a negative elevation if the tide is low. The first two parts of the task are straight-forward; the third part could provide a good tie-in to a science lesson.

Edit this solution

Solution

a. Death Valley is located below sea level. We know this because its elevation is negative. Sea level is the base for measuring elevation. Sea level elevation is defined as 0 ft. All other elevations are measured from sea level. Those places on Earth that are above sea level have positive elevations, and those places on Earth that are below sea level have negative elevations. Thus, Death Valley, with an elevation of -282 feet, is located below sea level.

b. To find out how much higher Denver is than Death Valley, we can reason as follows:

Death Valley is 282 feet below sea level. Denver is 5280 above sea level. So to go from Death Valley to Denver, you would go up 282 feet to get to sea level and then go up another 5280 feet to get to Denver for a total of

$$282 + 5280 = 5562.$$

feet. Thus, Denver, Colorado is 5562 feet higher than Death Valley, California.

c. If you were standing near the ocean, your elevation would be close to zero. Depending on how high or low the tide is and where exactly you are standing, your elevation could be as low as -50 feet (or as high as 50 feet) if you are at the edge of a very low tide (or a very high tide, respectively) at the Bay of Fundy.
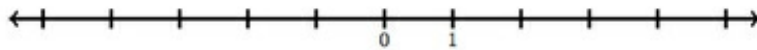
6.NS Integers on the Number Line 2

Alignments to Content Standards: 6.NS.C.6.a

Task

Below is a number line with 0 and 1 labeled:

a. Find and label the numbers -2 and -4 on the number line. Explain.

b. Find and label the numbers $-(-2)$ and $-(-4)$ on the number line. Explain

c. Find and label the number -0 on the number line. Explain.

IM Commentary

The goal of this task is to study, with a number line, why it makes sense for a whole number a that $-(-a) = a$. The negative sign preserves the distance from 0 but switches the direction from 0. There are only two directions to go on the number line: left and right. Therefore, if we switch directions twice this will bring us back to our original direction from 0. Since the distance from 0 does not change, this means that taking the opposite of a negative number will produce a positive number with equal distance from 0. This reasoning will be foundational for future 7th grade work where students must reason about the opposite of quantities such as (-2 + 8) and -(-2 + 8).

Illustrative
Mathematics

This task complements https://www.illustrativemathematics.org/illustrations/283 which investigates plotting negative integers on the number line.

Edit this solution

Solution

a. The numbers -2 and -4 are both negative and so they are both located to the left of 0. To place -2 on the number line, we need to move two units to the left of 0 and for -4 we move four units to the left of 0. The unit has been marked on the number line (in the positive direction) so we can count 2 and 4 equal tick marks to place -2 and -4 as shown below:
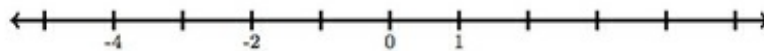
b. For -(-2) we are looking for the negative or opposite of -2. Since -2 is two units to the left of 0 this means that -(-2) will be two units to the right of 0. Similarly -(-4) is 4 units to the right of 0. These are plotted on the number line below:
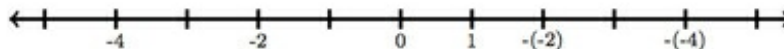
Notice that -(-2) = 2 and -(-4) = 4. The first negative sign switches us from the right of 0 to the left of 0 and the second negative sign puts us back where we started.

c. Since 0 is neither to the right nor to the left of 0, taking the opposite of 0 will give 0, that is -0=0. For a positive number, such as 2, the opposite or -2 is a negative number. For a negative number such as -4, the opposite or -(-4) is positive. The number 0 is neither positive nor negative so we must have -0=0.

Assignment #2
From what type of rocks is the Grand Canyon Composed?

Part 2

In order to better understand what kind of weathering broke apart the rock from which the Grand Canyon was formed, it's important to establish what we know about the kind of rocks the Grand Canyon is made from.

- Read Page 1 of the *Grand Canyon Rocks!* article.
- Describe each of the three types of rock using information from the article:
    - Igneous rocks:
    Formed when rock is super-heated, becomes molten, and then cools and hardens on or beneath Earth's surface.
    - Sedimentary rocks:
    Made of smaller pieces called sediments that pile into layers. Pressure cements the sediments into solid rock over time.
    - Metamorphic rocks:
    Rocks that have been changed under great heat and pressure

- Look at the images of the Grand Canyon below. Do you see any clues about what classification of rock the Grand Canyon might be made of? Use what you know about characteristics of different rock classifications and the article information to make an evidence-based claim.

https://commons.wikimedia.org/wiki/File:USA_09855_Grand_Canyon_Luca_Galuzzi_2007.jpg

https://pixabay.com/images/search/rock%20layers/

Is the Grand Canyon made of igneous rock, metamorphic rock, or sedimentary rock?	What evidence from the images above supports your claim?
I think the Grand Canyon is composed of…. *Answers may vary; however, article evidence should support sedimentary rock.*	The evidence that supports my claim is…. *I see layers in the rocks in the pictures of the Grand Canyon and the article says that sedimentary rock is formed by sediments being cemented together into layers.*

Adapted from New Visions for Public Schools

- Read pages 2-4 of the *Grand Canyon Rocks!* Article to learn more about the types of rocks found at the Grand Canyon and complete the table below with information about each type of rock.

Rock Name	Time Period Formed?	Environment Description	Types of Fossils Found
Precambrian Basement Rocks Rock Type: *Igneous & Metamorphic*	*1.8 billion years ago*	*Molten rock flowed as magma through cracks of metamorphic rock*	*Hard to find due to heat and pressure during formation*
Bright Angel Shale Rock Type: *Sedimentary*	*515 million years ago*	*Muddy, warm, shallow sea*	*Trilobites, brachiopods, crinoids*
Redwall Limestone Rock Type: *Sedimentary*	*340 million years ago*	*Shallow, warm, clear well lit sea*	*Corals, cephalopods, bryozoans, brachiopods*
Supai Group Rock Type: *Sedimentary*	*300 million years ago*	*Varied between beaches, dunes, and oceans*	*Brachiopods (oceans) Plant fossils (land)*
Hermit Shale Rock Type: *Sedimentary*	*280 million years ago*	*Broad coastal plain fed by multiple streams*	*Ferns, conifers, reptiles, insects*
Coconino Sandstone Rock Type: *Sedimentary*	*275 million years ago*	*Coastal dune fields (desert like)*	*Reptiles, spiders, scorpions*
Kaibab Limestone Rock Type: *Sedimentary*	*270 million years ago*	*Shallow, warm, well-lit clear sea with a sandy floor*	*Brachiopods, sponges, sharks, fish*

- Does this information support your earlier answer about the type of rock that composes the Grand Canyon? *Answers will vary. If the earlier answer was sedimentary: yes.*

0

Assignment #3
What type of weathering contributed to the formation of the Grand Canyon?

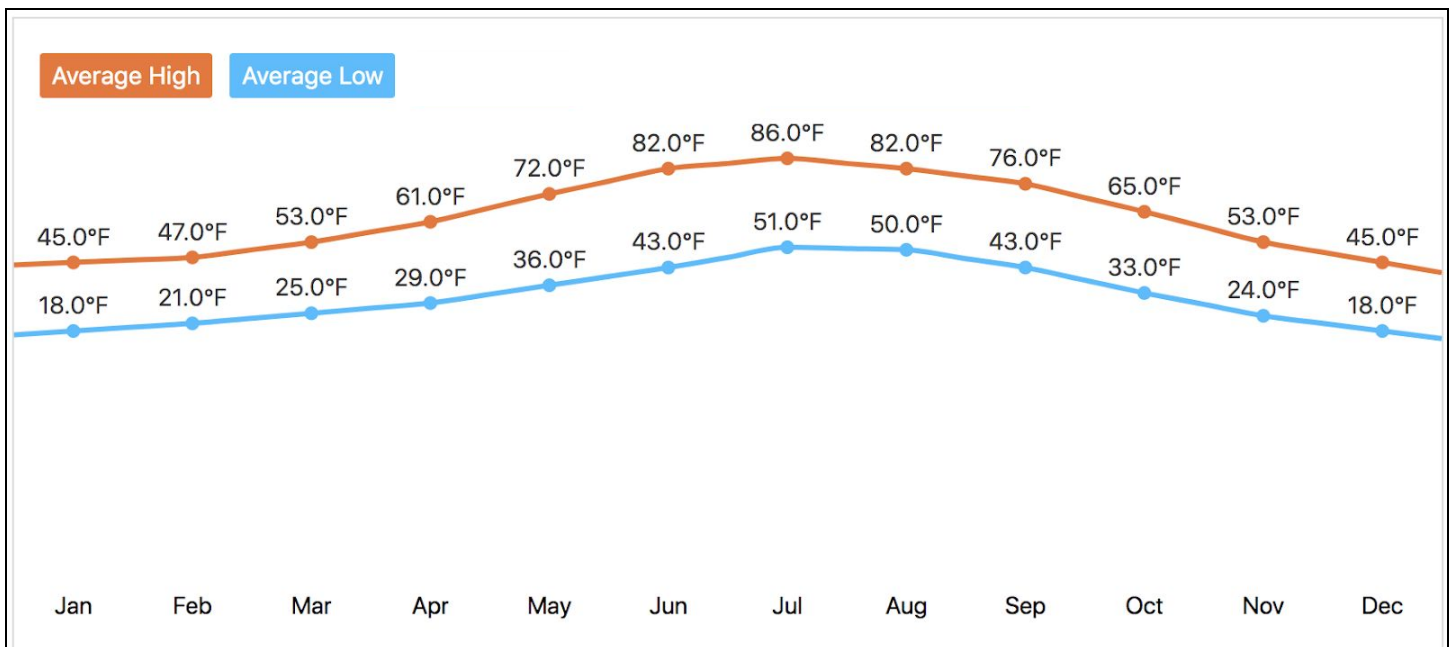**Part 1**

Grand Canyon Climate

1. Examine the graph below. During which month is there the biggest difference between the average low temperature and the average high temperature? How much is the difference?

The biggest difference in average low and high temperature is in June. The difference is 39 degrees.
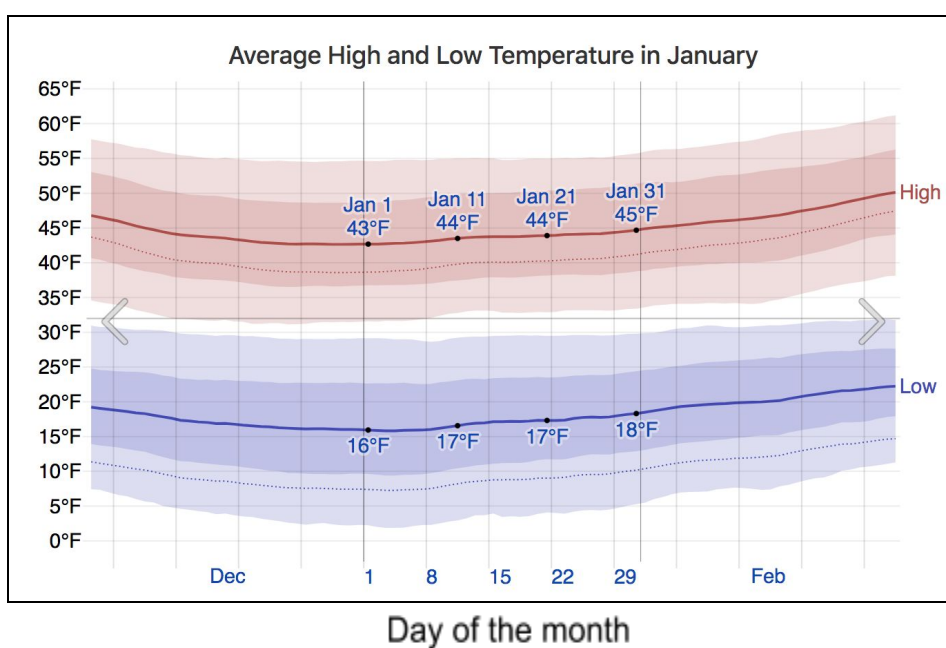
Grand Canyon Average Monthly High and Low Temperatures

2. One of the coldest months in the Grand Canyon is January. Examine the graph of January temperatures in the Grand Canyon below.

   Does the Grand Canyon ever experience temperature below and above freezing (32 degrees F) on the same day? Be sure to cite evidence from the graph.

Yes, it is common for the Grand Canyon to experience temperatures below and above freezing on the same day in January. The low temperatures range from 16 degrees to 18 degrees (below freezing), while the high temperatures on the same days range from 43 degrees to 45 degrees (above freezing).

Average High and Low Temperature in January

Jan 1 43°F	Jan 11 44°F
Jan 21 44°F	Jan 31 45°F

High

16°F	17°F	17°F	18°F

Low

Dec   1   8   15   22   29   Feb

Day of the month

3. Examine the graphs below. Does it rain or snow (precipitation) at the Grand Canyon? How does the precipitation in the Grand Canyon compare to the precipitation in New York City?

Yes it rains and/or snows at the Grand Canyon. The precipitation at the Grand Canyon is higher than the average monthly precipitation in New York City. In fact, it is more than double.

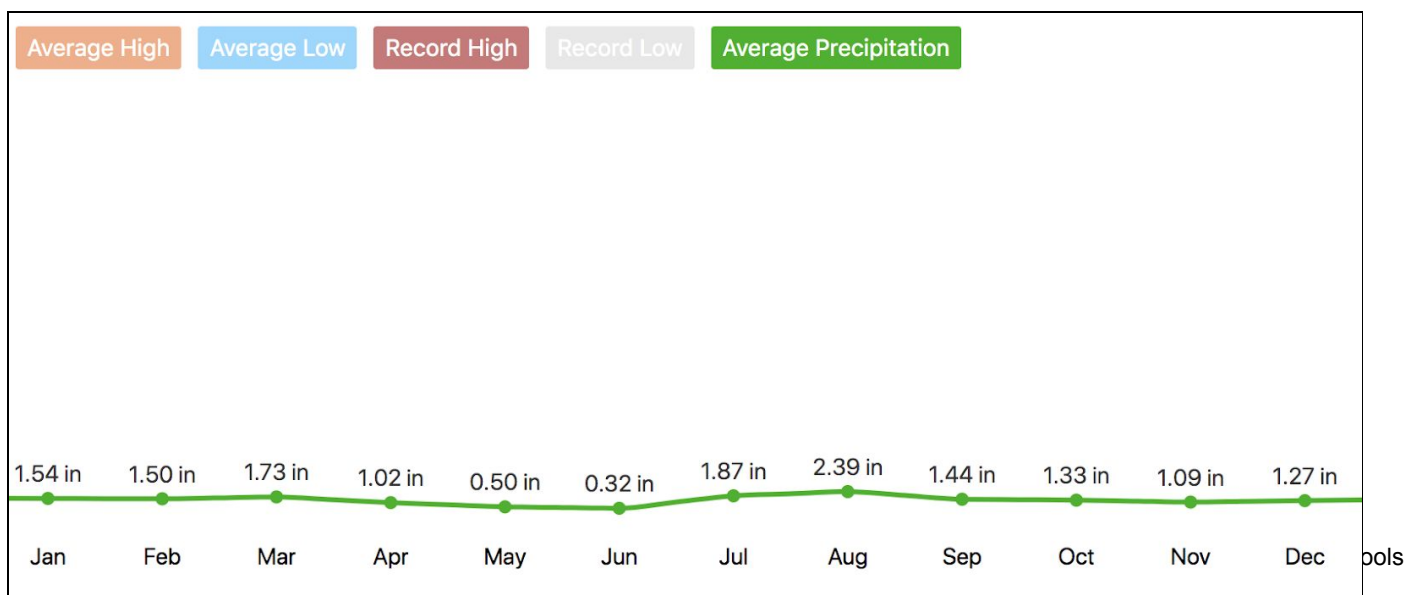### Grand Canyon Average Monthly Precipitation

Average High	Average Low	Record High	Record Low	Average Precipitation

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
3.65 in	3.21 in	4.36 in	4.50 in	4.19 in	4.41 in	4.60 in	4.44 in	4.28 in	4.40 in	4.02 in	4.00 in
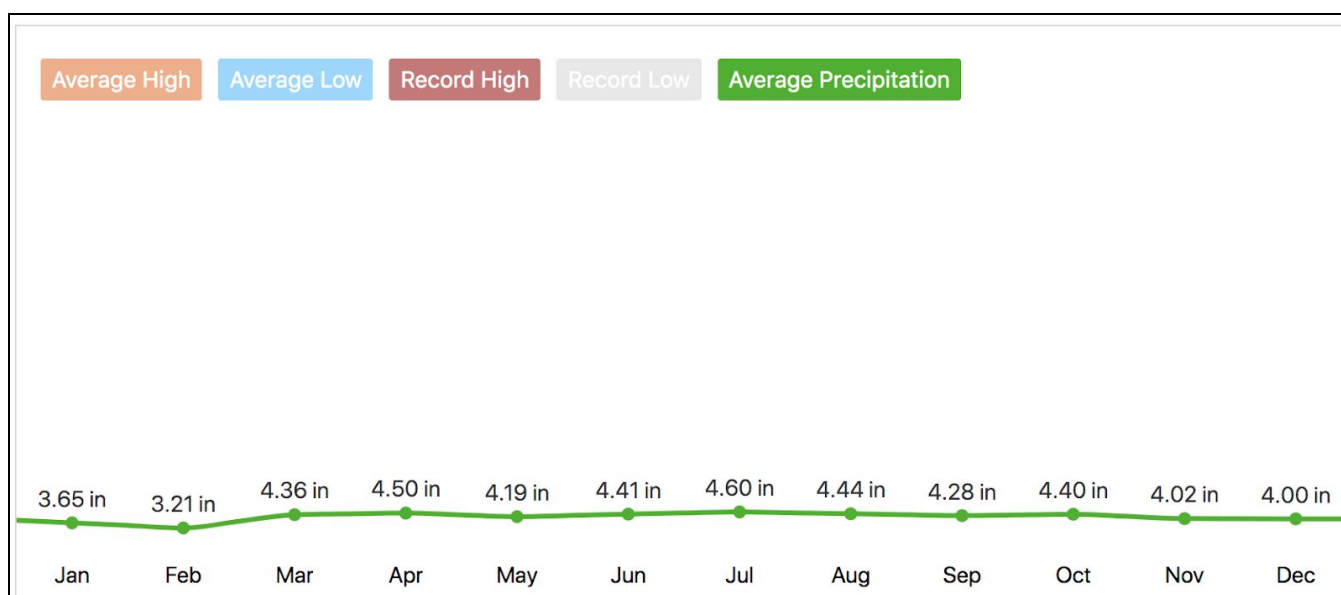
New York City Average Monthly Precipitation

Average High	Average Low	Record High	Record Low	Average Precipitation

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.54 in	1.50 in	1.73 in	1.02 in	0.50 in	0.32 in	1.87 in	2.39 in	1.44 in	1.33 in	1.09 in	1.27 in

Summarize your observations, thoughts, and questions from **Part 1: Grand Canyon Climate**, in the space provided below.

See What are some of your observations?	Think What does each observation make you think about the Grand Canyon formation?	Wonder What questions do you have about each observation?
Answers will vary.	*Answers will vary.*	*Answers will vary.*

Part 2

- Read the text, *Weathering*.
  - As you read, use a yellow highlighter (or underline) to highlight ideas that you think connect to what you learned about the Grand Canyon's climate and might offer clues about the type of weathering that may have broken apart rock to form the Grand Canyon. Use green to highlight (or circle) ideas you don't understand or have questions about.

1) What ideas from the text do you think connect to what you learned about the Grand Canyon's climate? Be sure to explain why you think they connect.

Answers will vary. Some ideas that connect to the data above are:
- *Temperature changes*
- *Freeze-thaw*
- *Rainwater*

2) What questions do you have about the text?

Answers will vary.

● Now that you have read about the types of physical and chemical weathering, make an evidence-based claim below about at least one type of physical weathering and one type of chemical weathering you think could have broken apart rock to form the Grand Canyon.

Physical Weathering Claim

Claim	Evidence Consider rock and mineral composition and climate at the Grand Canyon.	Reasoning How does the evidence connect to the description of the physical weathering you claimed?
The type of physical weathering I think may have broken apart rock to form the Grand Canyon is… *Answers will vary.* *Example:* *Freeze-thaw*	*Answers will vary; however, students should cite evidence from the climate data and/or the Grand Canyon Rocks! Article.* *Example:* *Temperatures at the Grand Canyon often fall below and above freezing during the same day.* *It rains significantly more at the Grand Canyon than NYC.*	*Answers will vary; however, students should use information from the weathering article to connect the claim to the evidence.* *Example:* *Freeze thaw is a type of physical weathering caused when water gets into the cracks of rocks and then freezes, expands, and makes a bigger crack in the rock. Given the precipitation levels and temperature changes at the Grand Canyon, this process can happen over and over again.*

Chemical Weathering Claim

Claim	Evidence Consider rock and mineral composition and climate at the Grand Canyon.	Reasoning How does the evidence connect to the description of the chemical weathering you claimed?
The type of chemical weathering I think may have broken apart rock to form the Grand Canyon is… *Answers will vary.* *Example:* *Rainwater*	*Answers will vary; however, students should cite evidence from the climate data and/or the Grand Canyon Rocks! article.* *Example:* *The Grand Canyon averages over four inches of rain a month.* *The Grand Canyon is partly composed of limestone.*	*Answers will vary; however, students should use information from the weathering article to connect the claim to the evidence.* *Example:* *Since the Grand Canyon is a national park and not around a lot of pollution, I did not choose acid rain as an option. The area does get steady precipitation during the year and is composed of some limestone, which are easily weathered by slightly acidic rainwater.*

Adapted from New Visions for Public Schools