Christina School District Assignment Board

Student's First & Last Name_____ **Student ID/Lunch #** _____ **School** _____ **Grade**_____

Grade Level: 6th

Week of June 8th, 2020

		Day 1	Day 2	Day 3	Day 4	Day 5
ELA		This week you will hone your understanding of blogs by reading a narrative and creating a blog in the voice and characterization of the character using the text as the window into the character. ---------- Read the narrative **"The Anklet"** As you read, annotate words, phrases that identify characterization of all characters.	Answer the Text-Dependent Questions 1-5.	Reread or skim the text. Complete Character Maps	Complete Day 4 Character Blog	Respond/comment on one of the blogs of your character from the perspective of the character you did not choose. The response must be 100-150 words
Math	**6**	*Distributive Property and Expressions Vocabulary* *A*nswer "Which One Doesn't Belong?" and justify your choice. (attached) Read Math Notes: Math Vocabulary	Complete 7-103, 7-104, and 7-105. (attached) Refer to Math Notes if needed.	Complete 7-107 and 7-111. (attached) Refer to Math Notes if needed.	Complete Distributive Property Practice Worksheet #1-3. (attached) Refer to Math Notes if needed.	Journal Entry: Describe what you have learned this week about writing expressions with and without parentheses by using the Distributive

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		and complete 7-101 and 7-102. (attached)				Property. Show an example with a diagram and two ways to write the expression. Title this entry "Distributive Property" and label it with today's date.
	6+	*Division with Rational Numbers* Answer "Which One Doesn't Belong?" and justify your choice. (attached) Read Math Notes: Fraction Division and complete 3-87, 3-88, and 3-89. (attached)	Complete 3-90, 3-91, and 3-92. (attached) Refer to Math Notes if needed.	Read p. 37. Use examples to assist completing p. 38 #1-5 (top) and #1-5 (bottom). (attached)	Complete p. 38 #6-15. (attached). Refer to examples from p. 37 and Math Notes if needed.	Complete Puzzle Investigator Problem (PIP) 10 - Way To Go! (attached)
Science		**How Big Is the Universe? (part 1):** Read article. In YELLOW, highlight information that describes the size of the universe. In GREEN, highlight information that describes the scale of objects/places compared to Earth. In RED, highlight information about measuring sizes and scales.	**How Big Is the Universe? (part 2): Reread article and/or notations as necessary. Write your best answers to the following:** **a) A Greek philosopher was able to determine how far the moon was from Earth by studying shadows during a lunar eclipse. How does a shadow form during a lunar eclipse?** **b) A student draws a model showing the alignment of the sun, moon, a shadow, and Earth during a lunar eclipse. How should this model be arranged?** **c) Scientists use a variety of instruments to measure the size of objects in the universe. Describe the size of the Milky Way in comparison to the sun.** **d) Astronomers often compare the size and scale of different objects in the universe. Is a galaxy larger or smaller than the**	**How Big Is the Universe? (part 3):** Reread article and/or notations as necessary. Read the following claim: Comparing distances in space to everyday objects helps us better understand the size of the universe. Write your best answer to the following: What evidence from the article supports this claim? Explain why the evidence supports this claim.	**What Is Beyond Our Solar System? (part 1):** Read article. In YELLOW, highlight information that describes the size of the universe. In GREEN, highlight information that describes the scale of objects/places compared to Earth. In RED, highlight information about measuring sizes and scales.	**What Is Beyond Our Solar System? (part 2):** Reread article and/or notations as necessary. Read the following claim: Stars in the Milky Way, like the sun, will be less bright as the universe gets bigger. What details from the article support this claim? Think about what you know about galaxies and space, then explain how the details support the claim.

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		solar system?			
Social Studies	Complete Activity 1 from the document titled, "Partnerships and Partitions-PART 3"	Complete Activity 2 from the document titled, "Partnerships and Partitions-PART 3"	Complete Activity 3 from the document titled, "Partnerships and Partitions-PART 3"	Complete Activity 4 from the document titled, "Partnerships and Partitions-PART 3"	Complete Activity 5 from the document titled, "Partnerships and Partitions-PART 3"

Name: _____ Class: _____

The Anklet

By Neil Philip
1994

Neil Philip is a writer and poet who has retold the best-known stories from The Arabian Nights *for a modern day audience.* The Arabian Nights *is the English-language nickname frequently given to* One Thousand and One Arabian Nights*, a collection of folk tales written and collected in the Middle East during the Islamic Golden Age of the 8th to 13th centuries. In this tale, a poor young woman must deal with mistreatment by members of her own family. As you read, take notes on the youngest sister's actions and feelings.*

Sheherazade told stories night after night: all the voyages of Sinbad the Sailor, and the adventures of Land Abdullah and Sea Abdullah, the fate of the man who stole the dog's golden dish, the story of the ruined man who became rich again through a dream. And one night she told the story of

The Anklet

***

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[1] It is said, O King, that there were once in a city three sisters, who lived together and earned their bread by spinning flax.[1] The youngest was also the prettiest, radiant[2] and graceful as the moon. Her elder sisters, who were born to a different mother, hated and envied[3] her, both for her beauty and for her skill at spinning.

One day the youngest went to the market, and, finding herself with a small coin left over, bought a little clay pot to hold flowers.

"You silly girl," shrieked the sisters. "We can't waste our money on fancies and fripperies."

She made no answer, but placed a single rose in the pot, and sat down to her spinning.

[5] The days passed, in drudgery[4] and silent toil.[5] The two older sisters kept nagging the poor girl and making fun of her. Her only pleasure in life was to fill the little pot with flowers, which she could look at and smell as she worked.

1. Flax is a plant fiber that can be woven to make cloth.
2. shining or glowing
3. **Envy** ***(verb):*** to desire to have a quality or possession belonging to someone else
4. hard, menial, or dull work
5. **Toil** ***(noun):*** exhausting physical labor

Now one day the sisters were out, and the girl, alone with her thoughts, burst into tears. "Oh, little pot," she said, "you are my only friend. My sisters have gone out and left me to work all by myself, without anything to eat."

And the little pot heard her, and brought forth sweetmeats for her to eat. For there was a jinni[6] in the pot, and whatever the mistress of the pot asked for, the jinni would provide.

The girl kept the secret of the pot from her sisters, but whenever they were out, she would ask for whatever she fancied.[7] She would eat and drink her fill, and dress up in beautiful clothes; but when her sisters came home, she was always careful to be back in her rags and hard at work at her spinning wheel.

Now it happened that the king announced that he was going to hold a great feast for all the people of the city. Everyone was invited, even the three poor sisters.

[10] The two older sisters dressed up in their threadbare best, and set out for the feast. "You can't come," they said. "You would shame us in those rags. You're not fit for such fine company."

But as soon as they were gone, the girl asked her pot for a beautiful green robe and scarves and garments of the finest silk. She asked, too, for sparkling rings and turquoise bracelets, and gold anklets studded with diamonds to wear around her slender ankles.

When she entered the king's harem, where the women's part of the entertainments was being held, everyone there gasped at her beauty, and at the richness of her magic clothes and jewels. Even her sisters were moved to tears at her grace and charm, and never guessed that this lovely princess was their own despised[8] sister.

The girl slipped away before the end of the feast, so as to be home first. She took off the diamond anklets in order to be able to run faster, and in her haste she did not notice that she dropped one. It fell into the water trough where the king's horses drank.

Next morning the horses refused to drink, shying away from the trough in terror, for the anklet shone and flared beneath the water, frightening them.

[15] The groom took the jewel to the king's son. He turned it around and around in his hands, saying nothing. Finally he declared, "The girl whom this anklet fits shall be my wife!"

He took the anklet to his mother. "Mother," he said, "you know about such things. Please find the girl to whom this anklet belongs. I am in love with her already, and long to see the anklet gracing her slim, shapely ankle."

So the queen organized a search of the whole city. She visited all the harems, and all the houses, but no one had an ankle slim enough to wear the anklet. Finally she went into the very poorest quarter, to the house of the three sisters. The two older sisters tried in vain to force the anklet on, but when the queen tried it on the youngest, it fitted perfectly. The search was over.

6. an intelligent spirit able to appear in human and animal forms
7. **Fancy** ***(verb):*** feel a desire or liking for
8. **Despised** ***(adjective):*** hated

The queen led the girl back to the palace. The celebrations went on for forty days and forty nights, while the wedding was prepared. At last, the day arrived, and the bride was taken to the baths by her sisters, who were to dress her.

The older girls had worried away at the poor, trusting girl until they had wheedled[9] the secret of the magic pot from her and they, too, had made requests of the jinni. They dressed her hair with the diamond pins the jinni provided, and as the last pin went into place, the girl was turned into a white dove, which flew out the window in panic. She had been transformed by the magic pins.

[20] When the queen asked where the bride was, the sisters just said, "She has gone."

The prince sent out search parties to scour[10] the city for his bride, but she was nowhere to be found. Without her, he began to sicken and waste away.

Every day, at dawn and at dusk, the white dove came to the prince's window, and cooed to him in his misery. The prince grew to love the bird, which seemed to be the only creature that could sooth his lonely heart. Once a day he reached out to touch her and, seeing she did not fly away, took her in his hand.

The dove cooed at the prince, and he began to smooth her feathers. Noticing something hard beneath them, he scratched the place, and out fell a diamond pin. He pulled out another, and another. And when the last pin was gone, the dove ruffled her feathers and shook herself back into her true shape, his bride once more.

The prince and his love lived many years in happiness, blessed by children as beautiful and kind as themselves. But the two sisters died of jealousy, poisoned by their own spite.

9. to use flattery to persuade someone to do or give something
10. to look through a place carefully

Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. PART A: Which statement best expresses the theme of the story?
    A. Family members don't always get along and work together.
    B. If you try to keep someone else down, you'll end up hurting yourself more.
    C. Sometimes you need to put your own needs before someone else's.
    D. Cruel people are sometimes rewarded, even when they treat others poorly.

2. PART B: Which detail from the story best supports the Answer to Part A?
    A. "One day the youngest went to the market, and, finding herself with a small coin left over, bought a little clay pot to hold flowers." (Paragraph 2)
    B. "She asked, too, for sparkling rings and turquoise bracelets, and gold anklets studded with diamonds to wear around her slender ankles." (Paragraph 11)
    C. "The older girls had worried away at the poor, trusting girl until they had wheedled the secret of the magic pot from her and they, too, had made requests of the jinni." (Paragraph 19)
    D. "But the two sisters died of jealousy, poisoned by their own spite." (Paragraph 24)

3. PART A: Which statement best describes the older sisters' treatment of the youngest sister?
    A. The older sisters are jealous of the youngest sister, so they ignore her.
    B. The older sisters try to learn how to spin from the youngest sister because they admire her skill.
    C. The older sisters try to make the youngest sister feel bad about herself, but they are really jealous.
    D. The older sisters are sometimes willing to share with the youngest sister.

4. PART B: Which detail from the text best supports the answer to Part A?
    A. "'You can't come,' they said. 'You would shame us in those rags. You're not fit for such fine company.'" (Paragraph 10)
    B. "Even her sisters were moved to tears at her grace and charm, and never guessed that this lovely princess was their own despised sister." (Paragraph 12)
    C. "The two older sisters tried in vain to force the anklet on, but when the queen tried it on the youngest, it fitted perfectly." (Paragraph 17)
    D. "At last, the day arrived, and the bride was taken to the baths by her sisters, who were to dress her." (Paragraph 18)

5. How does the older sisters' use of the jinni contribute to the plot?
    A. It emphasizes their spiteful treatment of their youngest sister.
    B. It shows their efforts to try to win the prince's heart and change their destinies.
    C. It emphasizes how unfair their situation has been all along.
    D. It shows their efforts to figure out how their youngest sister got the anklet.

Character Map

Instructions: Choose 2 characters from the narrative and chart their character traits. Be sure to cite the evidence of your choices in the Textual Evidence box.

Character 1 Name	**Feelings**	**Description**	**Behavior**	**Personality Traits**
	Textual Evidence	**Textual Evidence**	**Textual Evidence**	**Textual Evidence**

Character 2 Name	**Feelings**	**Description**	**Behavior**	**Personality Traits**
	Textual Evidence	**Textual Evidence**	**Textual Evidence**	**Textual Evidence**

Day 4 - Character Blog

Review the sample blog.

A Young Capulet in Love

"Did my heart love till now? ...

Posted by Juliet Capulet on May 11, 2020

Oh Romeo...you looked so hot at the dance! Why must my name be Juliet? Our parents won't let us be together--everyone knows that! You are a Montague, and I am a Capulet. Out families **HATE** each other. What are we to do? How can we ever be together? Just they other day I saw your cousins fighting with mine. Blood shed seems to be the only solution to a problem, I suppose. You know, I was wondering...what happened that made our families hate each other so? I'm nearly fourteen, and for as long as I can remember, they've been feuding. I just want us to be together--get married, live happily ever after. If I never see you again, I hope you remember me. Remember my big brown eyes, long brown hair, and smile as bright as the sun, that lit up the world when I first saw you. Mostly, remember my heart; for it belongs to you. Will we ever be together? Is fate real? Is it our destiny that we saw each other at the dance? I can't help but think it was meant for me to love you. Do you feel the same way? I feel like our destiny has already been decided for us in a way because of our parents. They will keep us apart. "My only love sprung from my only hate! Too early seen unknown, and known too late! Prodigious birth of love it is to me, that I must love a loathed enemy" (Act 1, Scene V). Hate is never justified. Hate hurts other people and gets in the way of true love. Hate can kill. Will loving you be the end of us? I believe we will encounter more obstacles, perhaps the loss of one of our cousins who stupidly fight each other. Or perhaps, our parents will be told about us. Adieu sweet love.

Task

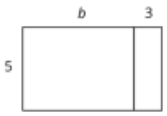
Review your character map. Choose one of the characters to be the voice of your blog.
Write a blog from the point of view of your character. The blog must include **ALL** of the following.

- The blog must focus on an event, another character, thought or action of the character.
- 2-4 posts with different dates written from the perspective of your character from various points in the action of the text. Each post must have at least 150 words. Keep in mind that blog posts will appear from most recent to oldest, so if you want your posts to flow chronologically, you should begin at the end of the story and move toward the beginning.
- At least one post must have a related image within it. Use picture cutouts or your own illustrations.
- Include a fake website link that relates to the blog. For example, if the character is talking about sandwiches include a fake link to Bombsandwiches.com . (Internet links are underlined within text.)
- A header with a title that matches your character and blog content, with a quote related to your character from the story as a subtitle.
- A photo of your character (as you imagine him or her) at the bottom with a brief description of your character (role in life, relationships, goals, location, etc.)

Math 6 – Week of June 8th

Distributive Property and Expressions Vocabulary

Which One Doesn't Belong? Why?

$3(5 + b)$	$15 + 5b$
	$5(b + 3)$

METHODS AND MEANINGS

MATH NOTES

Math Vocabulary

Variable: A letter or symbol that represents one or more numbers.

Expression: A combination of numbers, variables, and operation symbols. For example, 2x+3(5−2x) + 8. Also, 5−2x is a smaller expression within the larger expression.

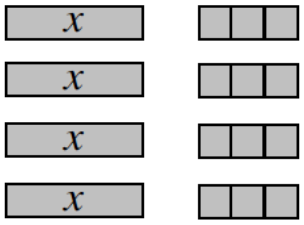
Term: Parts of the expression separated by addition and subtraction. For example, in the expression 2x+3(5–2x) + 8, the three terms are 2x, 3(5 – 2*x*), and 8. The expression 5–2x has two terms, 5 and –2x.

Coefficient: The numerical part of a term. In the expression 2x+3(5–2x) + 8, for example, 2 is the coefficient of 2x. In the expression 7x–15x2, both 7 and 15 are coefficients.

Constant term: A number that is not multiplied by a variable. In the expression 2x+3(5–2x) + 8, the number 8 is a constant term. The number 3 is not a constant term, because it is multiplied by a variable inside the parentheses.

Factor: Part of a multiplication expression. In the expression 3(5–2x), 3 and 5–2x are factors.

7-101 At right is an algebra tile drawing that shows the result of the first three steps of a number trick.



a. What are three possible steps that led to this drawing?
b. Use a variable to write at least two expressions that represent the tiles in this problem. Write your expressions so that one of them contains parentheses.
c. If the next step in the trick is "Divide by 2," what should the simplified drawing and two algebraic expressions look like?

7-102 Recall that parentheses allow us to consider the number of groups of tiles that are present.

a. Below are four steps of a math magic trick. Write the result of the steps in two different ways. Build it with tiles if it helps you.
    1. Pick a number.
    2. Triple it.
    3. Add 1.
    4. Multiply by 2.

b. Write 4(2x+3) in another way.
c. Build/draw 9x+3 with algebra tiles (like above(. How many groups can you divide the tiles into evenly? Write the expression two ways, one with parentheses and one without.
d. Build 15x+10 with tiles and write the expression another way.

7-103 You have been writing expressions in different ways to mean the same thing. The way you write an expression depends on whether you see tiles grouped by rows (like four sets of x+3 in problem 7-101) or whether you see separate groups (like 4x and 12 in that problem). The Distributive Property is the formal name for linking these two equivalent expressions.
Write the following descriptions in another way. For example, 4(x+3) can also be written 4x+12. (Hint: Divide each expression into as many equal groups as possible.)

a. 6(8+x)
b. 12x+4
c. 21x+14
d. 18+12x

e. Now, write the following number trick as two different expressions.
    1. Pick a number.
    2. Multiply by 4.
    3. Add 7.
    4. Multiply by 3.

7-104 Read the Math Notes box at the beginning of this lesson as a review of the math words you have already been exposed to in previous chapters.

a. Compare the expression without parentheses in parts (b), (c), and (d) of problem 7-103. Which has the largest coefficient? Which expression has the largest constant term?
b. What are the two factors in part (a)? What are the two factors in part (b) when it is written with parentheses?
c. Write an expression with a variable of y, a coefficient of 18, and a constant term of 9. Rewrite your expression as two factors.
d. Use the words coefficient, constant term, term, expression, variable, and factor to describe $12x^2+19y-1$.
e. Use the words factor, product, quotient, and sum to describe the parts of $3(a+b)+12-ab+5$.

7-105 Mrs. Baker demonstrated an interesting math magic trick to her class. She said:

"Think of a two-digit number and write it down without showing me.
Add the 'magic number' of 90 to your number.
Take the digit that is now in the hundreds place, cross it out,
and add it to the ones place. Now tell me the result."

As each student told Mrs. Baker his or her result, she quickly told each student his or her original number. Why does this trick work? Consider the following questions as you unravel the trick.

a. Could you represent the original number with a variable? What is the algebraic expression after adding 90?
b. What is the largest number the students could have now? The smallest?
c. When Mrs. Baker says to cross out the digit in the hundreds place, the students cross off the 1. Was any other number possible? What have the students subtracted from the expression? What is the new expression?
d. When the students add the 1 to the ones place, what is the simplified version of the expression they have created? What does Mrs. Baker mentally add to their result to reveal their original number?

7-107 Identify the terms, coefficients, constant terms, and factors in each expression below.

a. $3x^2+(-4x)+1$ b. $3(2x-1)+2$

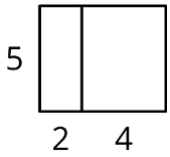
7-111 Write the following number trick as an expression in two ways, one with parentheses and one without. For example, $4(x+3)$ can also be written $4x+12$.

1. Pick a number.
2. Multiply by 7.
3. Subtract 15.
4. Multiply by 2.

Distributive Property Practice Worksheet

1. Select **all** the expressions that represent the area of the large, outer rectangle.

   a. $5(2+4)$
   b. $5 \cdot 2 + 4$
   c. $5 \cdot 2 + 5 \cdot 4$
   d. $5 \cdot 2 \cdot 4$
   e. $5 + 2 + 4$
   f. $5 \cdot 6$



2. Draw and label diagrams that show these two methods for calculating $19 \cdot 50$.

   a. First find $10 \cdot 50$ and then add $9 \cdot 50$.

   b. First find $20 \cdot 50$ and then take away 50.

3. Complete each calculation using the distributive property.

   a.

$$98 \cdot 24$$
$$(100 - 2) \cdot 24$$
$$\ldots$$

   b.

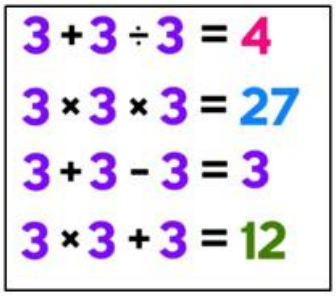
$$21 \cdot 15$$
$$(20 + 1) \cdot 15$$
$$\ldots$$

   c.

$$0.51 \cdot 40$$
$$(0.5 + 0.01) \cdot 40$$
$$\ldots$$

Division with Rational Numbers

Which One Doesn't Belong? Why?



METHODS AND MEANINGS

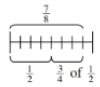
MATH NOTES

Fraction Division

Method 1: Using diagrams.

To divide by a fraction using a diagram, create a model of the situation using rectangles, a linear model, or a visual representation of it. Then break that model into the fractional parts named.

For example, to divide $\frac{7}{8} \div \frac{1}{2}$, you can draw the diagram at right to visualize how many $\frac{1}{2}$-sized pieces fit into $\frac{7}{8}$. The diagram shows that one $\frac{1}{2}$ fits, with $\frac{3}{8}$ of a whole left. Since $\frac{3}{8}$ is $\frac{3}{4}$ of $\frac{1}{2}$, you can see that $1\frac{3}{4}$ $\frac{1}{2}$-sized pieces fit into $\frac{7}{8}$, so $\frac{7}{8} \div \frac{1}{2} = 1\frac{3}{4}$.



Method 2: Using common denominators.

To divide a number by a fraction using common denominators, express both numbers as fractions with the same denominator. Then divide the first numerator by the second. An example is shown at right.

$$\begin{aligned} \frac{2}{5} \div \frac{3}{10} &= \frac{4}{10} \div \frac{3}{10} \\ &= \frac{4}{3} \\ &= 1\frac{1}{3} \end{aligned}$$

Method 3: Using a Super Giant One.

To divide by a fraction using a Super Giant One, write the two numbers (dividend and divisor) as a complex fraction with the dividend as the numerator and the divisor as the denominator. Use the reciprocal of the complex fraction's denominator to create a Super Giant One. Then simplify as shown in the following example.

$$\frac{3}{4} \div \frac{2}{5} = \frac{\frac{3}{4}}{\frac{2}{5}} \cdot \boxed{\frac{\frac{5}{2}}{\frac{5}{2}}} = \frac{\frac{3}{4} \cdot \frac{5}{2}}{1} = \frac{3}{4} \cdot \frac{5}{2} = \frac{15}{8} = 1\frac{7}{8}$$

Division with fractions by the Super Giant One method can be generalized and named the **invert and multiply** method. To invert and multiply, multiply the first fraction (dividend) by the reciprocal (or multiplicative inverse) of the second fraction (divisor). If the first number is an integer, write it as a fraction with a denominator of 1. If it is a mixed number, write it as a fraction greater than one. Here is the same problem in the third example above solved using this method:

$$\frac{3}{4} \div \frac{2}{5} = \frac{3}{4} \cdot \frac{5}{2} = \frac{15}{8} = 1\frac{7}{8}$$

A fraction is really just a symbolic representation of the quotient (answer to a division problem) of two quantities. The fraction 3/4 really means 3÷4=0.75. In this lesson, you will work with dividing fractions, positive and negative mixed numbers, and decimals.

3-87 A rational number is any number that can be written as a quotient or fraction of integers, that is, in the form ab, with the denominator not equal to zero.

a. What mathematical operation does a fraction represent?
b. Represent each division problem below as a fraction.
   i. 2÷8

   ii. 72÷5

   iii. 51÷94
c. Why do you think that the denominator of a fraction cannot equal zero?
d. When would it be most useful to use a fraction to find the answer to a division problem instead of using long division?

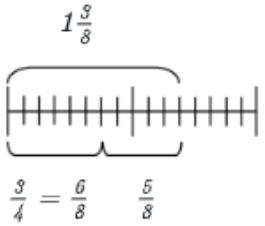
3-88 Think about how you rewrote the division problems above as fractions. This can also be done with negative rational numbers (fractions).

Is $-\frac{2}{3}$ different from $\frac{-2}{3}$, $\frac{2}{-3}$, and $\frac{-2}{-3}$? Decide whether these rational numbers are the same or different. Explain your reasoning.

3-89 Huy, Madison, and Ramona were working the following problem and each began her work differently.

$$1\frac{3}{8} \div \frac{3}{4}$$

Ramona's work:



There is one $\frac{3}{4}$ in $1\frac{3}{8}$ and $\frac{5}{8}$ left over. Then since $\frac{3}{4}$ equals $\frac{6}{8}$ those $\frac{5}{8}$ are really $\frac{5}{6}$ of one group. That means the answer is $1\frac{5}{6}$, that is, $\frac{3}{4}$ divides $1\frac{3}{8}$ into $1\frac{5}{6}$ pieces of lengths.

Madison's work:

$$1\frac{3}{8} = \frac{11}{8} \qquad \frac{3}{4} = \frac{6}{8}$$
$$11 \div 6 = \frac{11}{6} = 1\frac{5}{6}$$

Since $1\frac{3}{8}$ is the same as $\frac{11}{8}$ and $\frac{3}{4}$ is the same as $\frac{6}{8}$, this problem is really the same as $\frac{11}{6} \div \frac{6}{8}$. I can think of this as dividing 11 pieces into groups of 6 or $11 \div 6$.

Huy's work:

$$1\frac{3}{8} \div \frac{3}{4} = \frac{1\frac{3}{8}}{\frac{3}{4}} = \frac{\frac{11}{8}}{\frac{3}{4}}$$

$$\frac{\frac{11}{8}}{\frac{3}{4}} \cdot \frac{4}{3} = \frac{\frac{44}{24}}{1} = \frac{44}{24} = 1\frac{20}{24} = 1\frac{5}{6}$$

Since a fraction is division, I can write a super fraction and use a Super Giant One to make an equivalent fraction with a denominator of one. Then I just simplify.

Your Task: Try to make sense of each student's approach to the problem. Then use each of the three approaches to do the following two problems.

$$\frac{4}{5} \div \frac{1}{2} \qquad 2\frac{1}{2} \div \frac{3}{4}$$

3-90 You have seen three methods for dividing fractions: a diagram, finding a common denominator, and using a Super Giant One. If you need more review of these methods, look at the Math Notes box at the beginning of this lesson. Decide which method you will use for each part (a) and (b) below. Write the problem as a fraction division problem, solve it, and explain what each part of the division problem represents in each story.

a. Gerard loves to cook. His aunt visited Switzerland and brought him back four pounds of Swiss chocolate. Gerard's favorite cookie recipe takes 3/4 of a pound of chocolate. How many batches of the chocolate cookie recipe can Gerard make using all the chocolate that he has?
b. Lauren was bringing food to a party. She bought a 4-foot sub sandwich and cut it into servings that were each 3/5 of a foot long. How many servings did she get if she used the whole 4-foot sandwich?

3-91 Use any strategy to solve the following division problems.

a. $-2\frac{1}{8} \div \frac{1}{3}$ b. $\left(-1\frac{3}{4}\right) \div \left(-\frac{2}{5}\right)$

c. How are the sign rules for simplifying expressions with rational numbers similar to the sign rules for simplifying expressions with integers?

3-92 Stellica wants to find the quotient (answer to a division problem) 0.016÷0.25, but she is not sure how to divide decimals. She decided to rewrite the numbers as fractions.

a. With your team, rewrite 0.016÷0.25 using fractions and use what you know about dividing fractions to find an answer that is *one* fraction.
b. Stella knew that her teacher would want her to write the answer as a decimal, since the original problem was written with decimals. Convert your answer from part (a) to a decimal.
c. Find the quotient 2.38÷0.04.

DIVISION BY FRACTIONS

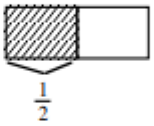
Division by fractions introduces three methods to help students understand how dividing by fractions works. In general, think of division for a problem like $8 \div 2$ as, "In 8, how many groups of 2 are there?" Similarly, $\frac{1}{2} \div \frac{1}{4}$ means, "In $\frac{1}{2}$, how many fourths are there?"

For more information, see the Math Notes box in Lesson 3.3.1 of the *Core Connections, Course 2* text. The first two examples show how to divide fractions using a diagram.

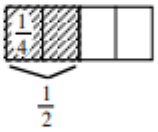
Example 1

Use the rectangular model to divide: $\frac{1}{2} \div \frac{1}{4}$.

Step 1: Using the rectangle, we first divide it into 2 equal pieces. Each piece represents $\frac{1}{2}$. Shade $\frac{1}{2}$ of it.



Step 2: Then divide the *original* rectangle into four equal pieces. Each section represents $\frac{1}{4}$. In the shaded section, $\frac{1}{2}$, there are 2 fourths.



Step 3: Write the equation.

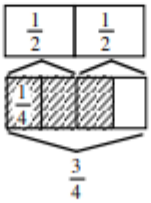
$\frac{1}{2} \div \frac{1}{4} = 2$

Example 2

In $\frac{3}{4}$, how many $\frac{1}{2}$s are there?

That is, $\frac{3}{4} \div \frac{1}{2} = ?$

Start with $\frac{3}{4}$.



In $\frac{3}{4}$ there is one full $\frac{1}{2}$ shaded and half of another one (that is half of one-half).

So: $\frac{3}{4} \div \frac{1}{2} = 1\frac{1}{2}$
(one and one-half halves)

Problems

Use the rectangular model to divide.

1. $1\frac{1}{3} \div \frac{1}{6}$ 2. $\frac{3}{2} \div \frac{3}{4}$ 3. $1 \div \frac{1}{4}$ 4. $1\frac{1}{4} \div \frac{1}{2}$ 5. $2\frac{2}{3} \div \frac{1}{9}$

One more way to divide fractions is to use the Giant One from previous work with fractions to create a "Super Giant One." To use a Super Giant One, write the division problem in fraction form, with a fraction in both the numerator and the denominator. Use the reciprocal of the denominator for the numerator and the denominator in the Super Giant One, multiply the fractions as usual, and simplify the resulting fraction when possible.

Example 5

$$\frac{\frac{1}{2}}{\frac{1}{4}} \cdot \boxed{\frac{\frac{4}{1}}{\frac{4}{1}}} = \frac{\frac{4}{2}}{1} = \frac{4}{2} = 2$$

Example 6

$$\frac{\frac{3}{4}}{\frac{1}{6}} \cdot \boxed{\frac{\frac{6}{1}}{\frac{6}{1}}} = \frac{\frac{18}{4}}{1} = \frac{9}{2} = 4\frac{1}{2}$$

Example 7

$$\frac{1\frac{1}{3}}{1\frac{1}{2}} = \frac{\frac{4}{3}}{\frac{3}{2}} \cdot \boxed{\frac{\frac{2}{3}}{\frac{2}{3}}} = \frac{\frac{8}{9}}{1} = \frac{8}{9}$$

Example 8

$$\frac{2}{3} \div \frac{3}{5} \Rightarrow \frac{10}{15} \div \frac{9}{15} \Rightarrow \frac{10}{9}$$

Compared to:

$$\frac{\frac{2}{3}}{\frac{3}{5}} \cdot \boxed{\frac{\frac{5}{3}}{\frac{5}{3}}} = \frac{\frac{10}{9}}{1} = \frac{10}{9} = 1\frac{1}{9}$$

Problems

Complete the division problems below. Use any method.

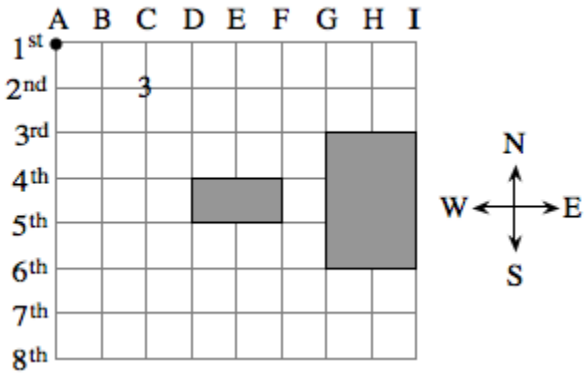
1. $\frac{3}{7} \div \frac{1}{8}$ 2. $1\frac{3}{7} \div \frac{1}{2}$ 3. $\frac{4}{7} \div \frac{1}{3}$ 4. $1\frac{4}{7} \div \frac{1}{3}$ 5. $\frac{6}{7} \div \frac{5}{8}$

6. $\frac{3}{10} \div \frac{5}{7}$ 7. $2\frac{1}{3} \div \frac{5}{8}$ 8. $7 \div \frac{1}{3}$ 9. $1\frac{1}{3} \div \frac{2}{5}$ 10. $2\frac{2}{3} \div \frac{3}{4}$

11. $3\frac{1}{3} \div \frac{5}{6}$ 12. $1\frac{1}{2} \div \frac{1}{2}$ 13. $\frac{5}{8} \div 1\frac{1}{4}$ 14. $10\frac{1}{3} \div \frac{1}{6}$ 15. $\frac{3}{5} \div 6$

MATH 6+ - PUZZLE INVESTIGATOR PROBLEM (PIP) 10 – WAY TO GO!

The map at right shows the streets in Old Town. Assume Jacqueline is standing at the corner of A and 1st Streets. Assume Jacqueline will only walk South or East. The shaded rectangles represent large buildings. Assume Jacqueline will not pass through any buildings.



a. The number "3" at the intersection of C and 2nd Streets means that there are three different ways she can get there from her starting position. What are those three ways? Describe them in words.

b. How many different ways can she walk to the corner of F and 4th Streets?

c. How many different ways can she walk to the corner of D and 5th Streets?

d. Explain how you can use your answers to parts (b) and (c) to find the number of ways she can walk to the corner of F and 5th Streets. Why does this make sense?

e. Find the number of different ways she can walk to the corner of I and 8th Streets.

f. How could you change the map so that Jacqueline has only 7 ways to get to the corner of D and 3rd streets? You can remove blocks or add them.

Big Questions: How big is the universe?

By NASA, adapted by Newsela staff on 11.12.19
Word Count **539**
Level **MAX**

NGC 6946 is a medium-sized, face-on spiral galaxy about 22 million light years away from Earth. In the past century, eight supernovas have been observed to explode in the arms of this galaxy. This composite image also includes optical data from the Gemini Observatory in red, yellow and cyan. A distance of 22 million light years is too impossibly large to imagine, and yet it is just a fraction of the size of the observable universe. Image from: NASA/CXC/MSSL/R.Soria et al, Optical: AURA/Gemini OBs

The universe is so big — but exactly how big is it, and how do we know?

Throughout history, humans have used a variety of ways to help them answer the questions "how far?" and "how big?" Generations of explorers have looked deeper and deeper into the vast expanse of the universe, and the journey continues today. We now have new methods and we are making new discoveries.

In the third century B.C.E., a Greek philosopher asked the question, "How far away is the moon?" He was able to measure the distance by looking at the shadow of the Earth on the moon during a lunar eclipse.

It was Edmund Halley who found a way to measure the distance to the sun and to the planet Venus. That was 300 years ago. Halley is also famous for predicting the return of the comet that is named after him. He knew that the planet Venus would pass directly between the Earth and the

sun usually every 121 years. Did you catch the last time this happened? It was June 5, 2012. If you missed it, you are out of luck, because there will not be another Venus transit until 2117.

It was knowing this distance from the Earth to the sun that helped us find the true scale of the entire solar system for the first time.

When we leave the solar system, we find our star and its planets are just one small part of the Milky Way galaxy. The Milky Way is a huge city of stars. It is so big that even at the speed of light (300,000 kilometers per second or 186,000 miles per second) it would take 100,000 years to travel across it. All the stars in the night sky and our sun live in this galaxy. There are also lots of other stars that are too faint to be seen.

Imagine that our entire solar system is the size of a quarter. The sun is now a microscopic speck of dust. The eight planets are, too. Their orbits are represented by the flat disc of the coin. On this scale, the diameter of our Milky Way galaxy will be about the size of the United States! How far away is the nearest star — Proxima Centauri — to our sun? In our model, it would be the size of a quarter, too, and it would be two soccer fields away.

Beyond our own galaxy lie many more galaxies. The deeper we see into space, the more galaxies we discover. There are billions of galaxies. The most distant of galaxies are so far away that the light from them that hits Earth today set out from the galaxies billions of years ago. So we see them not as they are today, but as they looked long before there was any life on Earth.

So how big is the universe? No one knows if the universe is infinitely large, or if ours is the only universe that exists. And other parts of the universe, very far away, might be quite different from the universe closer to home. Future NASA missions will continue to search for clues to the ultimate size and scale of our cosmic home.

What is beyond our solar system?

By NASA.gov, adapted by Newsela staff on 11.15.16
Word Count **527**
Level **830L**

TOP: Spiral galaxy NGC 7331 looks similar to our Milky Way. NASA. MIDDLE: The arms of the Milky Way. BOTTOM: The first planet discovered beyond our solar system orbits the star 51 Pegasi. NASA.

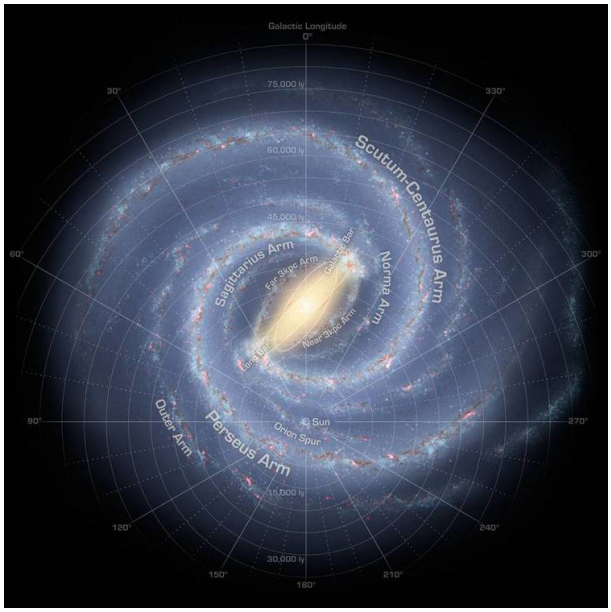
Our sun looks huge to us, but it is just one of the stars in the Milky Way galaxy. There are 100 billion other stars in our Milky Way galaxy. The Milky Way is a galaxy shaped like a spiral. It is about 100,000 light-years wide. A light-year is not like a human year. A light-year is the distance light travels in one year. Just one light-year is about 6 trillion miles.

The stars of the Milky Way look like a pinwheel with four arms. Earth is on one of the arms. Most of the stars in the Milky Way have their own planets.

All of the stars in the Milky Way orbit a giant black hole at the galaxy's center. This black hole is 4 million times bigger than our sun. It is 168,000 trillion miles away from Earth. The Milky Way orbits the black hole at about 514,000 miles per hour (828,000 kilometers per hour). It takes about 230 million years to make one revolution around it.

Beyond Our Galaxy

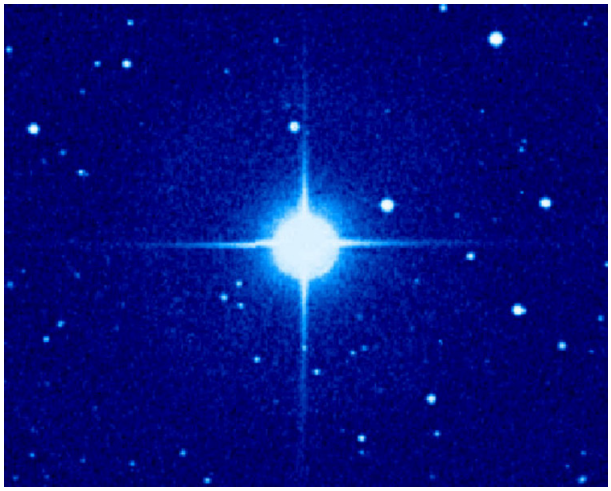
Our Milky Way galaxy is part of a neighborhood of 54 other galaxies. It is called the Local Group. Galaxies are all held together by gravity. Without gravity, Earth and everything else in our galaxy would fly off into space. Andromeda is the name of another large galaxy in our neighborhood.



Scientists studying galaxies expect the stars in the outer orbits to move faster since they have farther to travel. They also thought the stars on the inner orbits should move more slowly because they have less distance to travel. However, they found that the stars in the outer and inner orbits are moving at the same speed. They now believe that this might be the result of more gravity coming from some mysterious dark matter.

However, dark matter is invisible, and scientists cannot see it with regular telescopes.

Dark Energy



Our neighborhood of galaxies is only one of many that are moving away from the others. This goes against Isaac Newton's laws of gravity that say every object in the universe moves toward another object. Newton was an English mathematician and scientist in the 1600s. Since objects in space are moving away from each other, there is more space between them. This means the universe itself is getting bigger. That discovery is what led to the theory of the Big Bang origin of the universe.

Scientists thought that gravity would bring things closer to one another. So our universe would not grow very much and maybe even start to shrink. In the 1990s, however, scientists found that our universe is getting bigger. The force causing this is called dark energy. No one is sure what it is. But it is out there in space.

Since matter equals energy in Albert Einstein's famous equation, E=MC2, scientists have been able to measure dark energy. It is about 68 percent of everything out there in the universe. Dark matter makes up another 27 percent. This leaves just 5 percent for everything else we see and understand.

Scientists think there are at least 100 billion galaxies in our universe surrounded by enormous empty places.

Partition and Partnership – PART 3

Benchmark Standard	**Geography Standard 4b**: Students will explain how conflict and cooperation among people contribute to the division of the Earth's surface into distinctive cultural and political territories.
Grade Band	6-8
Vocabulary / Key Concepts	**Conflict:** Incompatibility of one idea, desire, event, or activity with another **Dams:** Structures built across a river to control the flow of water **Environment:** The sum of the conditions that surround and influence an organism **Flood**: The rising and overflowing of a body of water onto land that is not normally covered with water

ACTIVITY 1: Use the map on page 2 to answer the following questions:

1. Where are the headlands of the Nile?
2. Where are the headlands of the Tigris and Euphrates?
3. How might people in upstream areas influence people living downstream?
4. In general, discuss how this could lead to potential problems of conflict and cooperation.

ACTIVITY 2: Read the Water Map Sets on pages 2 and 3 to answer the following questions:

1. How are settlement patterns related to watersheds and river basins? Explain and support your answer.
2. True or False: Watersheds are functional regions based on water use. Explain how you know.
3. True or False: Countries are formal political regions. Explain how you know.

ACTIVITY 3: Read the article "Water in the Middle East: Conflict or Cooperation?" (pages 4 & 5) and answer the following questions:

1. Explain the water problem in the Middle East.
2. How might this problem lead to conflict and present opportunities for cooperation?

ACTIVITY 4: Thinking like a Geographer – Read the article "Do Good Fences Really Make Good Neighbors?" on pages 5 & 6. Observe Map 1 and answer the following questions for Map 1

MAP 1

1. How might partitioning the city lead to peace among the city residents of different faiths? In what ways might this traditional solution lead to increased conflicts?
2. How might this map change if present trends continue?

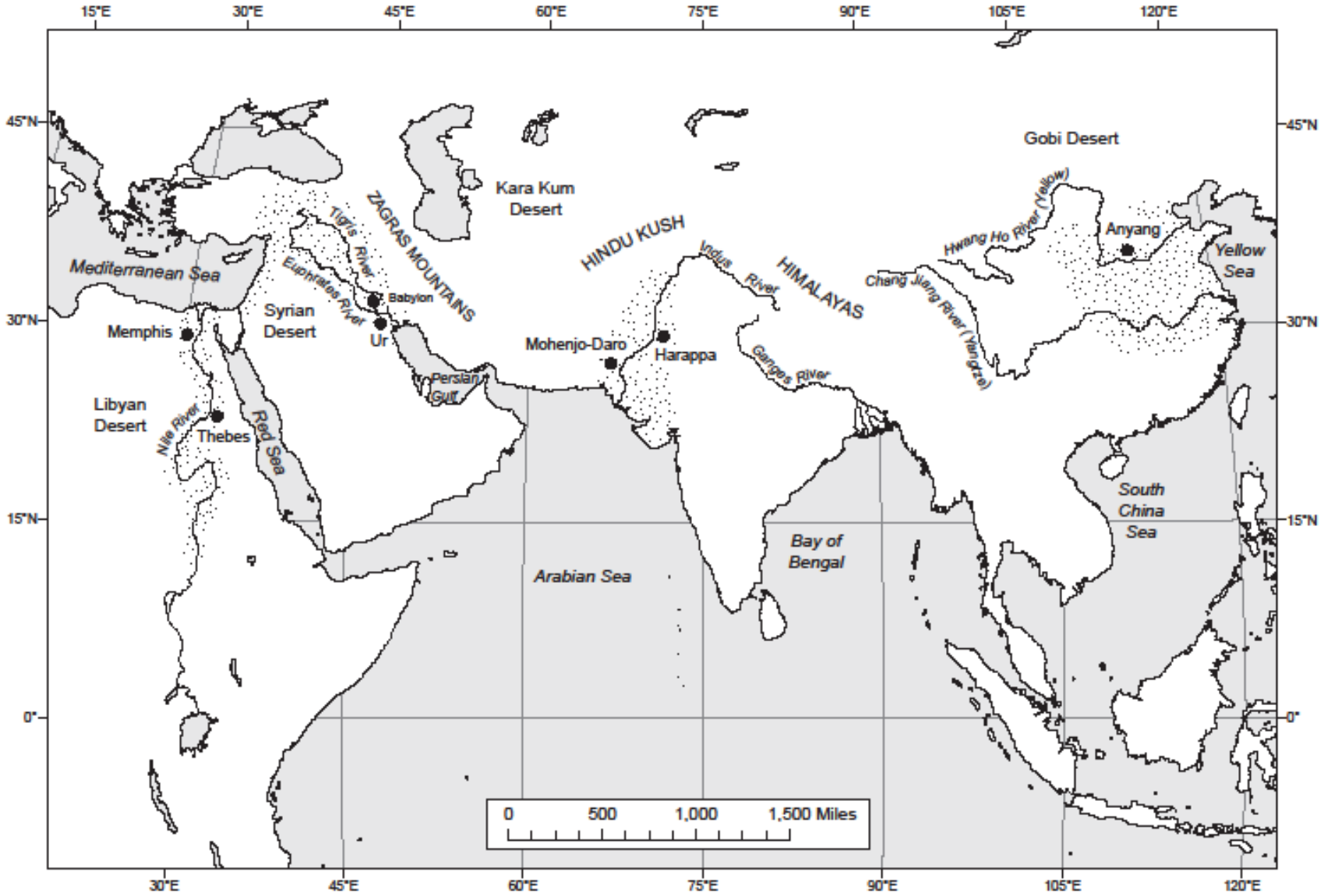
MAP 2

1. Which quarter is likely to have the most visits from people of other faiths?
2. Use the map to plan a route for a tour group from each of the religious faiths. Which group will have the most contact with people from other faiths?
3. Which group is likely to have the least contact?
4. Based on the map, what places in the Old City might have the most potential for conflict?
5. What steps might leaders take to reduce misunderstandings and conflicts in the Old City? Be specific.

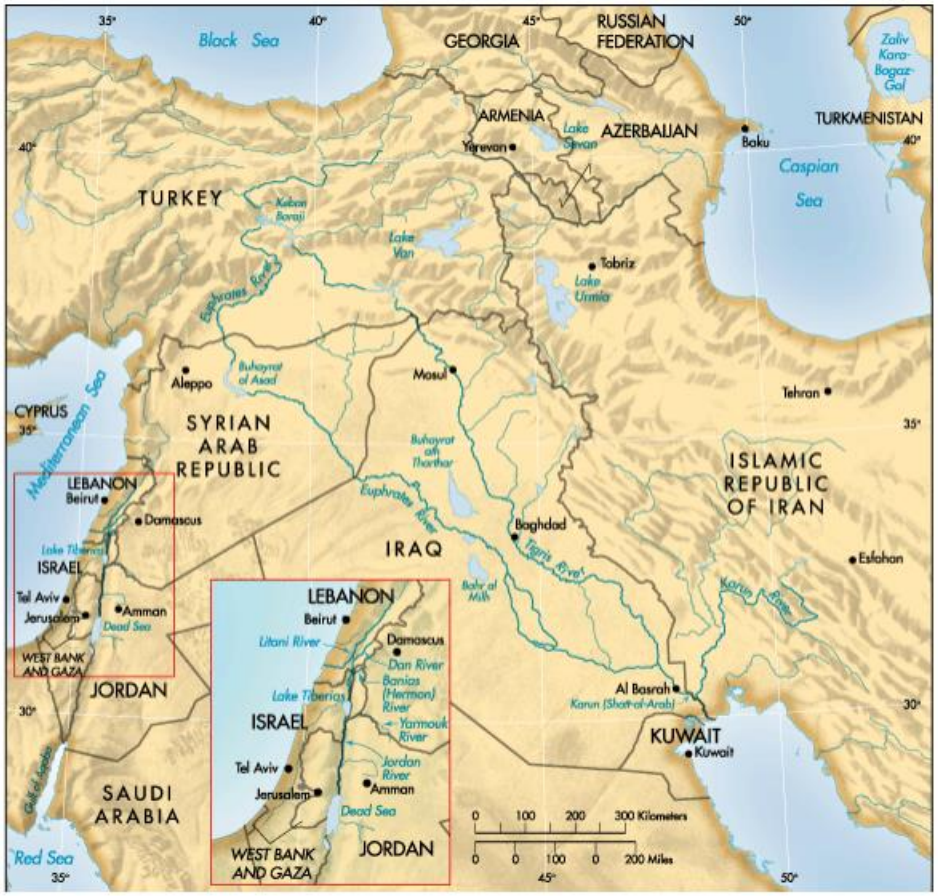
ACTIVITY 5: Check for Understanding:

1. How does conflict and cooperation among people contribute to the division of the Earth's surface into distinctive cultural and political territories? Explain and support your answer with evidence from this lesson.

Cradles of Civilization (Labeled)



Courtesy: Arizona Geographic Alliance http://geoalliance.asu.edu/azga
School of Geographical Sciences and Urban Planning
Arizona State University
Cartographer Becky L. Eden Cradles_Labeled.PDF07

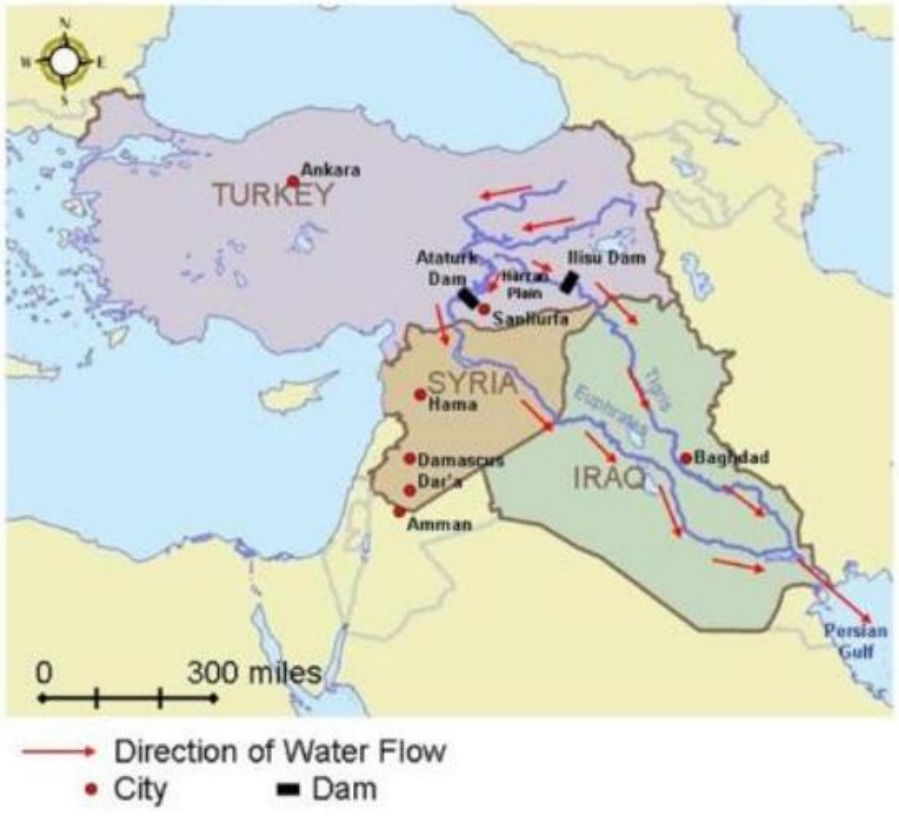


Water in a Dry Landscape

Large bodies of water border the arid landscapes in the Middle East. Notice how many river systems begin in the highlands areas of Turkey, Iran, and Iraq.

Thinking like a Geographer:

- Name five large bodies of water that border Middle Eastern lands.
- Name three rivers that begin in the highlands areas. Trace the course of each river. Which large body of water does the river drain into?



Water Always Flows Downhill

The Euphrates River flows through Turkey, Syria and Iraq on its way to the Persian Gulf.

Thinking like a Geographer

- How might the dams in Turkey benefit those living downstream?
- Why might Syrian and Iraqi governments want a say in the operation of the dams?
- Use the direction of river flow shown on this map to identify the highest elevations.

The Tigris and Euphrates Watershed

Watershed Area

A watershed is an example of a ***functional region***. Decisions made by people within this area affect the lives, opportunities and activities of others in the region, even when they live hundreds of miles away.

Functional regions are defined by the way people use the space, and the borders of the functional region can cross over ***formal regions*** like countries.

- How many countries share the Tigris-Euphrates Watershed?

Water in the Middle East: Conflict or Cooperation?

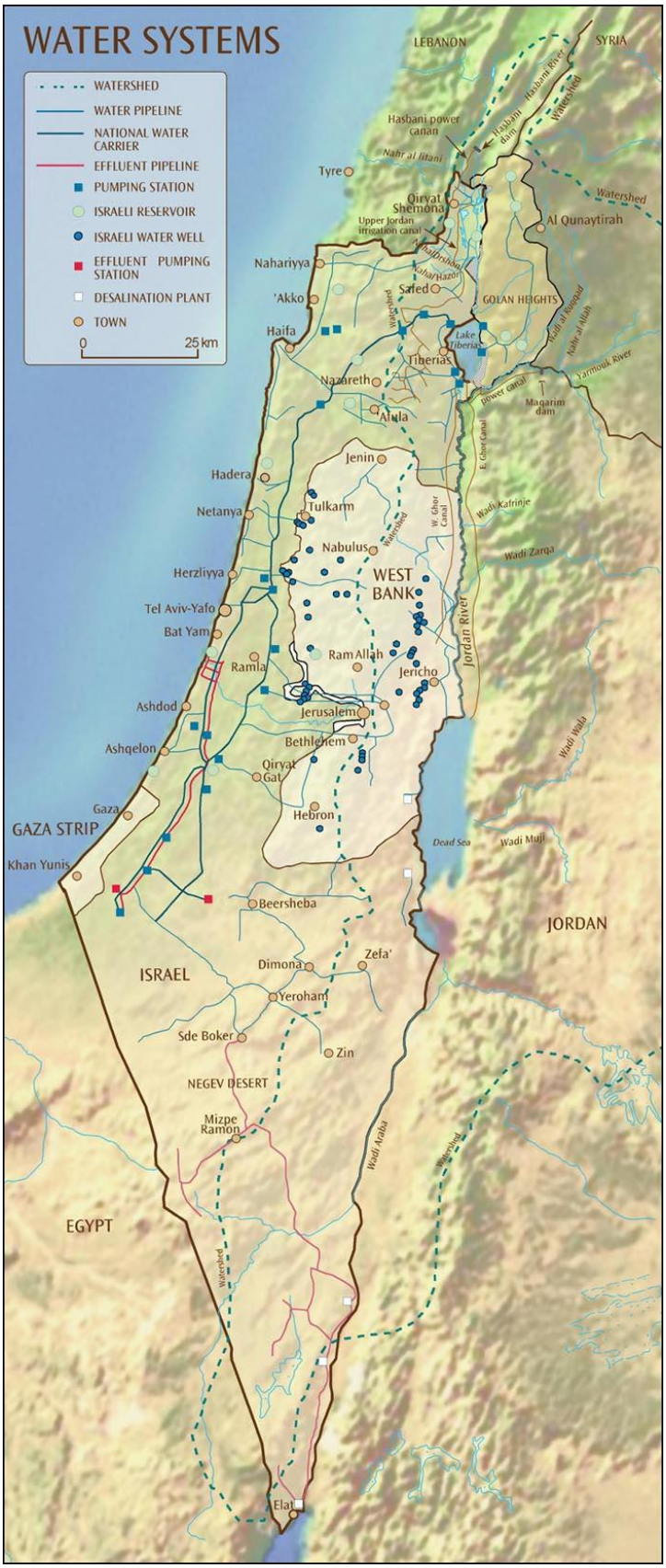
In the Middle East, water is scarce and oil is plentiful. We hear often about the value of the crude oil deposited under desert sands in many countries of the region. We know that oil often leads to conflicts and war, but can also be the basis of trade partnerships and agreements. But as populations in the region expand and climate warms, attention turns to water. Will this scarce resource bring the region more bitter conflict and division? Or might people of the region cooperate to conserve and develop water resources for the good of all?

Water Sources

In most of the Middle East, rainfall is a welcome event. In arid climates, winter is the time when some scant precipitation can be expected. Homes are built with cisterns on the roof to capture and store water for the dry months to come. Municipalities do the same. More rain falls in mountain and highland areas. Most of the rivers of the region begin in the mountain areas of Turkey and Iraq. As they flow to the seas, each of these streams is tapped for drinking water, irrigation, and industry. Each of the rivers also is used to carry away waste. Improved technology allows governments and industries to drill deep into aquifers beneath the dry lands and draw up stored water. New desalination plants along the Mediterranean Sea use expensive new equipment to remove the salt from sea water. Yet all these sources of water cannot supply the expanding population.

Conflict or Cooperation: A Regional Choice

Competition for water produces winners and losers. Some settlements and businesses with access to water prosper, while others struggle to survive. Palestinians complain that Israeli policies unfairly favor Jewish farmers and housing



complexes. They point out that giant Israeli wells are pumping water from the aquifer under Palestinian lands. As resentment builds, other people in the region are suggesting ways people can work together to make the most of the available water resources. They suggest that everyone should work together to conserve, recycle and reuse water. They suggest sharing the expense - and the benefits - of large, expensive projects for the benefit of all. This thirsty region can't wait for a political solution, they insist. The water problem must be solved now!

DO GOOD FENCES REALLY MAKE GOOD NEIGHBORS?

People have tried to avoid conflict by using two strategies within the Old City: partnership and partition. In Jerusalem's Old City, both partnership and partition can be seen at the same time.

The City of Jerusalem became the capital city of Israel almost 3,000 years ago. Through the centuries the city has become a religious center. It has played an important role in the development of three of the world's religions: Judaism, Christianity and Islam. The Jews, Christians, and Muslims who live in the Middle East have a strong attachment to the land where their ancestors worshiped and where important religious events took place. People who live outside the Middle East often have a keen interest in visiting the city, especially the old walled city near the temple.

Partitioning the Holy City

Jews, Christians and Muslims live in Jerusalem, but sharing the city space has not always been peaceful. Religious differences have often boiled over into violence within the city, and outside forces have sometimes tried to take control of the city and its holy sites as well. During the 1600s, the land within the walls of the Old City was partitioned among four groups who laid claims to the territory. Leaders hoped to reduce conflict by allowing each religious group space to do things in their own way. Inside their neighborhoods they could follow their own customs, speak their own language, and worship without interference. They would have fewer contacts with people from other groups, and it was hoped that this would lead to peace.

… [N]o one expects to see an end to partitions in the Old City. This traditional land division has reduced conflict and allowed each group to maintain its traditions for hundreds of years.

Today the people of the Old City of Jerusalem still live in sections defined by religion. Each of the sections of the city is called a 'quarter,' although they are not of equal size. The largest territory belongs to the Muslims. The Christian Quarter and the Armenian Quarter are controlled by two branches of Christianity. The remaining section near the wall of the old temple belongs to the Jewish residents. See Map 1 (page 7). For most of the last 500 years, people have been peaceful within the traditional partitions of the Old

City. But population in the region, and in the Old City of Jerusalem, is changing. Christians have largely migrated away from Jerusalem. As they leave, Muslims or Orthodox Jews try to purchase their houses. Many people predict that the Christian Quarter will gradually become smaller or may someday disappear. Others predict that the lines between the quarters may become less defined. But no one expects to see an end to partitions in the Old City. This traditional land division has reduced conflict and allowed each group to maintain its traditions for hundreds of years.

Partnership and Cooperation

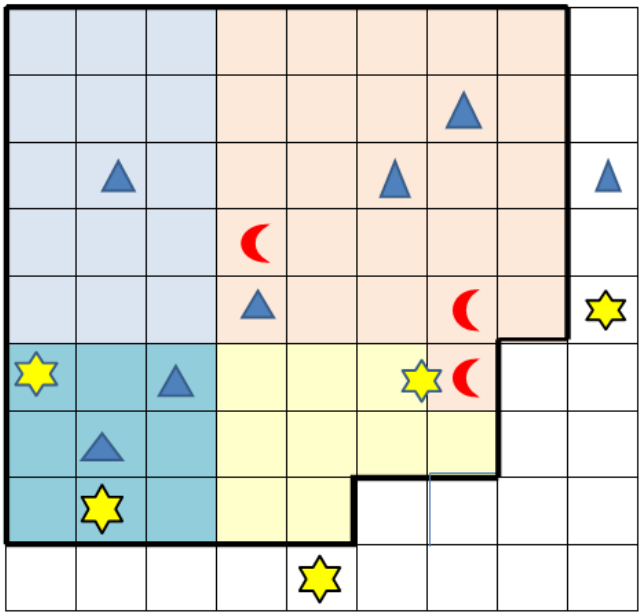
The Old City of Jerusalem contains numerous holy sites and shrines. Many of the events in the holy scriptures of the Jews, the Christians and the Muslims happened here. It was here that King Solomon built the Jewish Temple. Christians believe that Jesus was born in near-by Bethlehem, taught in the same temple, and was finally executed and buried within the walls. Muslims believe that the prophet Mohammed was raised to heaven to speak with other prophets at the place called the Dome of the Rock. All of these places are very close together, but are not always within the quarter assigned to their religion. See Map 2 (page 7).

Followers of each religion want access to the holy places to worship. Religious pilgrims come from all over the world to visit the holy sites. All of this movement can lead to tensions, but a partnership of sorts has allowed thousands of people to visit the shrines and holy sites each year. Religious leaders and groups have made public statements in support of access to all the holy sites. The government of Israel and the city government of Jerusalem allow most visitors to come and go freely. All visitors are asked to respect the sites they visit and other visitors.

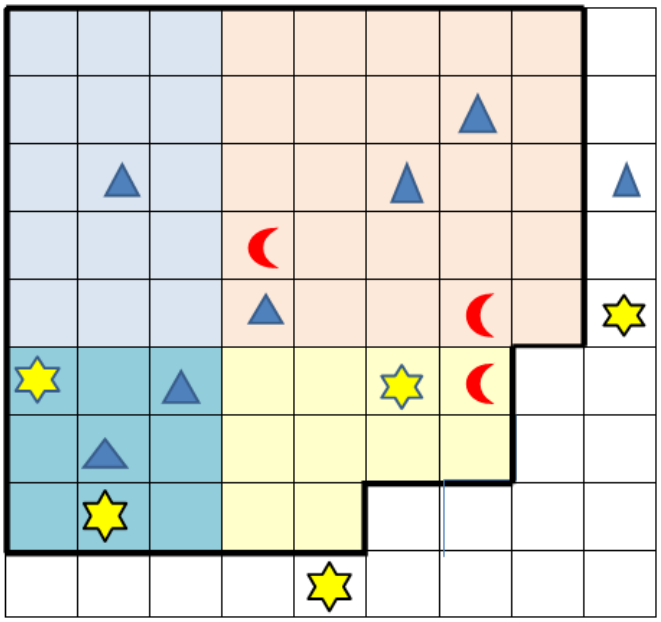
> It is essential that Jerusalem remains an open city, with full access to the religious sites which are holy to three faiths.
> – Justin Welby, Archbishop of Canterbury, June 27, 2013

This partnership is not perfect. Every day, people stream through the gates of the Old City to visit the holy places. The streets are crowded with residents, tourists, and vendors of souvenirs. Contacts between people from different cultures and backgrounds can lead to misunderstandings and disagreements. Crowded conditions can lead to competition. At times security concerns cause police to restrict access to one or more of the sites. There are occasional threats or incidents of violence. But most leaders in Jerusalem, in Israel and around the world agree that this partnership is worth keeping. They look for ways to make the partnership last and work better for all concerned.

MAP 1



MAP 2:



LEGEND:

	Christian Quarter			Old City Wall
	Armenian Quarter		▲	Christian Shrine or Holy Site
	Muslim Quarter		☾	Muslim Shrine or Holy Site
	Jewish Quarter		✡	Jewish Shrine or Holy Site