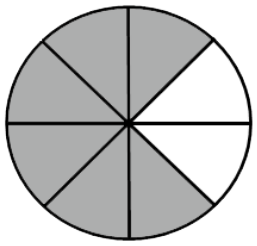
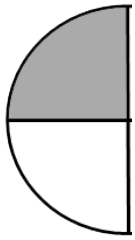
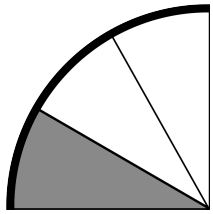
Name: _____ Date: _____

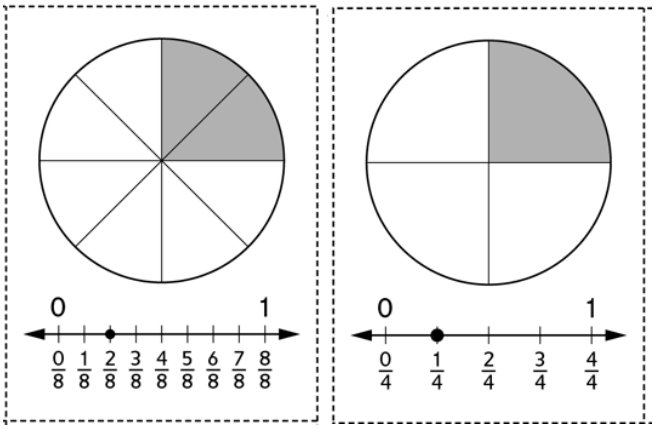
EVERYDAY MATHEMATICS—3rd Grade
Unit 5 Review: Fractions and Multiplication Strategies

1) Use your fraction circle pieces to complete the table.

Picture	Words	Number
Example: The whole is the red piece. 	six-eighths	$\frac{6}{8}$
The whole is the pink piece. 		
The whole is the light blue piece. 		
The whole is the _____ piece.	one-fourth	

Unit 5 Review (continued)

2) Drew turns over these two cards during a game of *Fraction Memory*.



He thinks he found a pair of equivalent fractions.

a. Do you agree?
Explain your thinking.

_____

_____

b. Use your fraction cards to find a different pair of equivalent fractions.
Record your two fractions on the lines below.

_____ = _____

3) Complete the table of 3s multiplication facts below.

Fact	Product
1 X 3	
2 X 3	
3 X 3	
4 X 3	

What patterns do you notice in the products?

_____

_____

_____

Unit 5 Review (continued)

4) For each fact below:

- Record a helper fact.
- Use your helper fact and either add or subtract a group
- Use words, numbers, or pictures to show your thinking.
- Write the product.

a. 4 X 6 = ?

Helper fact: _____ X _____ = _____

How I can use the helper fact:

4 X 6 = _____

b. 8 X 4 = ?

Helper fact: _____ X _____ = _____

How I can use the helper fact:

8 X 4 = _____

5) Mason is playing a round of *Salute!* The dealer says 18. His partner has a 9 on his forehead.

a. What number does Mason have? _____

b. Write a multiplication number sentence and a division number sentence for this problem.

_____ _____

c. How do your number sentences show the same *Salute!* round?

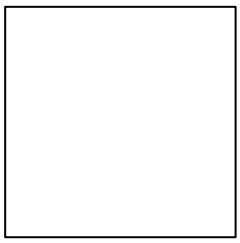
_____

_____

_____

Unit 5 Review (continued)

6) Divide the square below into 4 equal-size parts. Shade and label one part with a fraction.



7) Owen is trying to solve 7 X 9.

He sketches a rectangle to help him think about how to break apart the numbers so that the fact is easier to solve. Here is his sketch:

	9	
7	5 7 X 5	4 7 X 4

Use numbers or words to explain how Owen can use his sketch to solve 7 X 9.

_____

_____

_____

7 X 9 = _____

8) Ava and Olivia are working together to solve 8 X 9.

Ava says: "I think 8 X 8 will work as our helper fact."

Olivia says: "I think 9 X 9 will work as our helper fact."

With whom do you agree? Explain.

_____

_____

_____

Name: _____ Date: _____

EVERYDAY MATHEMATICS—3rd Grade
Unit 5 Challenge Review

1) Explain two different ways you could use doubling to solve 8 X 4 = ?.
You may draw rectangles to help.

a. One way:

Helper fact: _____ X _____ = _____

How I did it:

_____

_____

b. Another way:

Helper fact: _____ X _____ = _____

How I did it:

_____

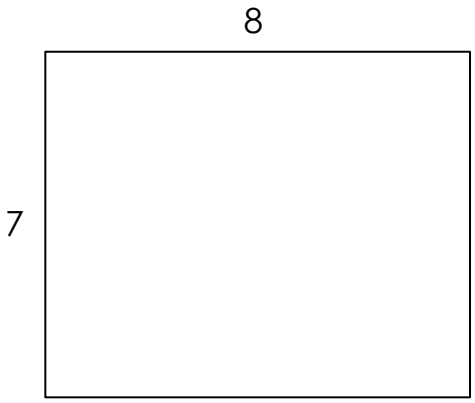
_____

Unit 5 Challenge Review (continued)

2) Jack is trying to solve 7 X 8 = ?.

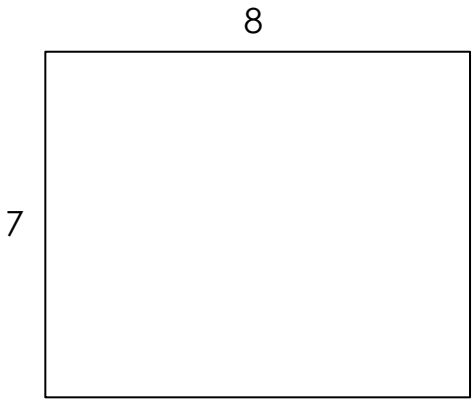
He sketches a rectangle with side lengths of 7 and 8 to help him think about how he could break it apart to make it easier to solve.

a. Show one way Jack could break his rectangle apart.



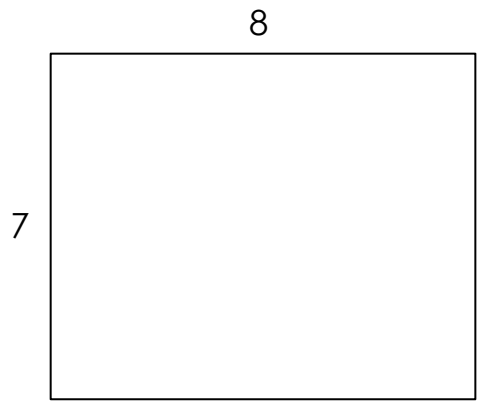
Record number models to show how he can use pieces to solve 7 X 8.

b. Show another way Jack could break his rectangle apart.



Record number models to show how he can use the pieces to solve 7 X 8.

c. Suppose Jack wants to break his rectangle into 3 parts.
Show one way he could do this.



Record number models to show how he can use the pieces to solve 7 X 8.

Name: _____ Date: _____

EVERYDAY MATHEMATICS—3rd Grade
Unit 5 Open Response Review
Using Multiplication Facts Strategies

Sydney is learning how to use more efficient strategies for multiplication.
She learned about adding or subtracting a group, doubling, and near squares.

She used the adding-a-group strategy to solve 6 X 9 = ?. She explained:

> "I will use the helper fact 5 X 9. I know that 5 X 9 =45.
> I can add one more group of 9 to 45 to get 54.
> I now have 6 groups of 9, so I know 6 X 9 = 54."

1) Use a picture to show how Sydney solved the problem
Explain how your picture matches Sydney's explanation.

Unit 5 Open Response Review (continued)

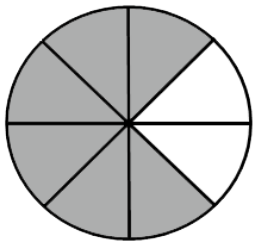
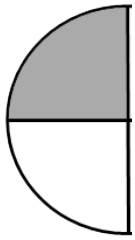
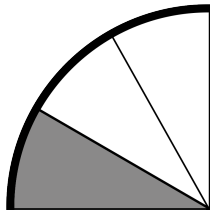
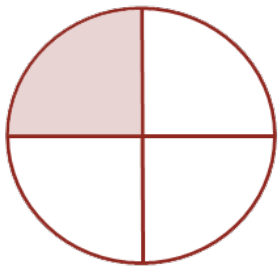
2) Choose at least one other efficient multiplication strategy, such as doubling or near squares, to solve 6 X 9 = ?.
Use pictures and words to show how you solved the problem.

(*Hint:* What helper fact can you use?)

Name: *ANSWER KEY* Date: _____

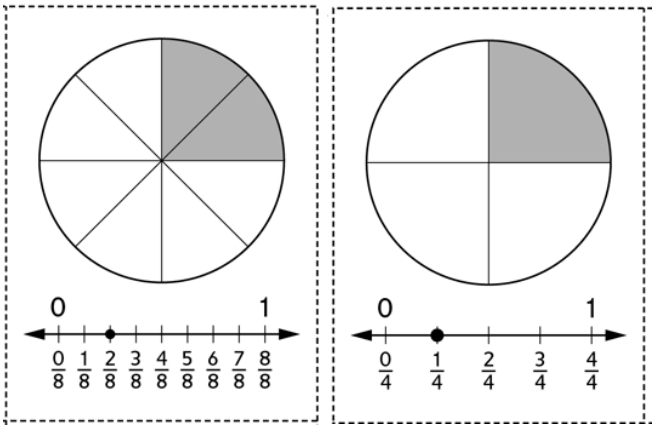
EVERYDAY MATHEMATICS—3rd Grade
Unit 5 Review: Fractions and Multiplication Strategies

1) Use your fraction circle pieces to complete the table.

Picture	Words	Number
Example: The whole is the red piece. 	six-eighths	$\frac{6}{8}$
The whole is the pink piece. 	one-half	$\frac{1}{2}$
The whole is the light blue piece. 	one-third	$\frac{1}{3}$
The whole is the red piece. 	one-fourth	$\frac{1}{4}$

Unit 5 Review (continued) *ANSWER KEY*

2) Drew turns over these two cards during a game of *Fraction Memory*.



He thinks he found a pair of equivalent fractions.

a. Do you agree?
Explain your thinking.

Possible answer: Yes. The shaded area of each circle on the cards is the same size.

b. Use your fraction cards to find a different pair of equivalent fractions.
Record your two fractions on the lines below.

$\frac{1}{3} = \frac{2}{6}$ Answers will vary.

3) Complete the table of 3s multiplication facts below.

Fact	Product
1 X 3	3
2 X 3	6
3 X 3	9
4 X 3	12

What patterns do you notice in the products?

Possible answer: The product switches between even and odd. The products increase by 3 each time.

Unit 5 Review (continued) *ANSWER KEY*

4) For each fact below:

- Record a helper fact.
- Use your helper fact and either add or subtract a group
- Use words, numbers, or pictures to show your thinking.
- Write the product.

a. 4 X 6 = ?

Possible answer:

Helper fact: 3 X 6 = 18

How I can use the helper fact:

Possible answer: I start with 18 and add 1 group of 6 to get 18 + 6 = 24.

4 X 6 = 24

b. 8 X 4 = ?

Possible answer:

Helper fact: 8 X 5 = 40

How I can use the helper fact:

Possible answer: I know 8 X 5 is 40. I took away 1 group of 8 to get 32.

8 X 4 = 32

5) Mason is playing a round of *Salute!* The dealer says 18. His partner has a 9 on his forehead.

a. What number does Mason have? 2

b. Write a multiplication number sentence and a division number sentence for this problem.

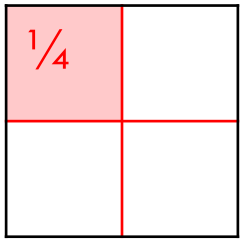
9 X 2 = 18 18 ÷ 9 = 2

c. How do your number sentences show the same *Salute!* round?

Possible answer: I can think multiplication and ask, "9 times what number is 18?" I can also think division and ask, "How many groups of 9 are in 18?" I get the same answer both ways.

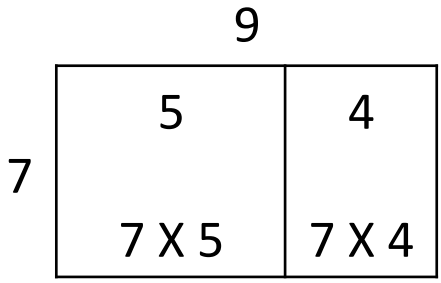
Unit 5 Review (continued) *ANSWER KEY*

6) Divide the square below into 4 equal-size parts. Shade and label one part with a fraction.



7) Owen is trying to solve 7 X 9.

He sketches a rectangle to help him think about how to break apart the numbers so that the fact is easier to solve. Here is his sketch:



Use numbers or words to explain how Owen can use his sketch to solve 7 X 9.

Possible answer: Owen's rectangle is in two pieces. The first rectangle shows 7 X 5 = 35. The second rectangle shows 7 X 4 = 28. So the total is 35 + 28 = 63.

7 X 9 = 63

8) Ava and Olivia are working together to solve 8 X 9.

Ava says: "I think 8 X 8 will work as our helper fact."

Olivia says: "I think 9 X 9 will work as our helper fact."

With whom do you agree? Explain.

Possible answer: I agree with Ava because she can add a group of 8 to 8 X 8 to solve 8 X 9 because of the turn-around rule. I agree with Olivia because she can subtract a group of 9 to get the answer to 8 X 9. I agree with both Ava and Olivia because 8 X 9 is a near-squares fact for 8 X 8 and 9 X 9, so they can either add or subtract a group to get the answer.

Name: *ANSWER KEY* Date: _____

EVERYDAY MATHEMATICS—3rd Grade
Unit 5 Challenge Review

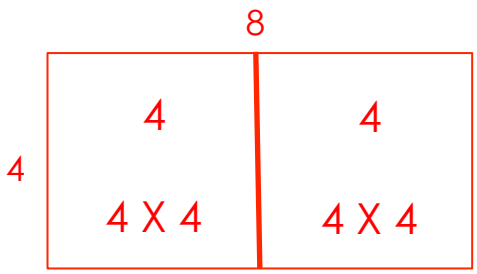
1) Explain two different ways you could use doubling to solve 8 X 4 = ?.
You may draw rectangles to help.

Answers will vary. Possible number models and explanations:

a. One way:

Helper fact: 4 X 4 = 16

How I did it:

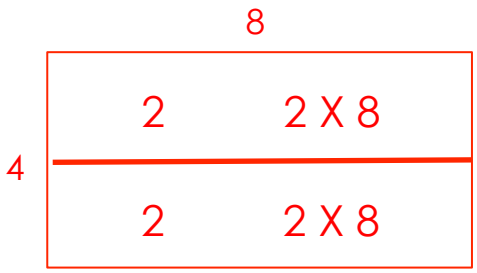


I started with 4 X 4 = 16 and doubled it. 16 + 16 = 32, so 8 X 4 = 32.

b. Another way:

Helper fact: 8 X 2 = 16

How I did it:



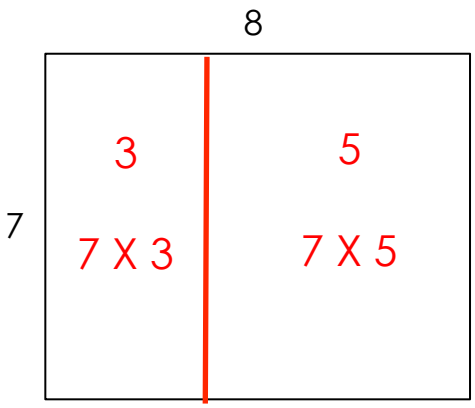
I started with 8 X 2 = 16 and doubled it. 16 + 16 = 32, so 8 X 4 = 32.

Unit 5 Challenge Review (continued) *ANSWER KEY*

2) Jack is trying to solve 7 X 8 = ?. Answers will vary. Possible answers:

He sketches a rectangle with side lengths of 7 and 8 to help him think about how he could break it apart to make it easier to solve.

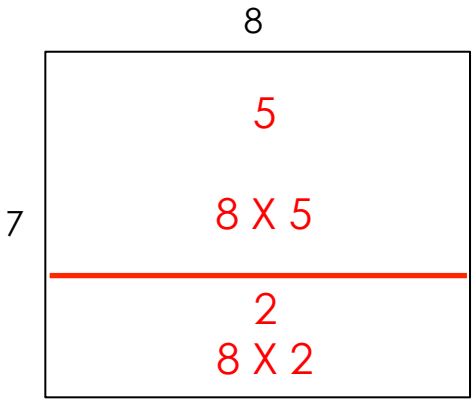
a. Show one way Jack could break his rectangle apart.



Record number models to show how he can use pieces to solve 7 X 8.

7 X 3 = 21, 7 X 5 = 35, 21 + 35 = 56

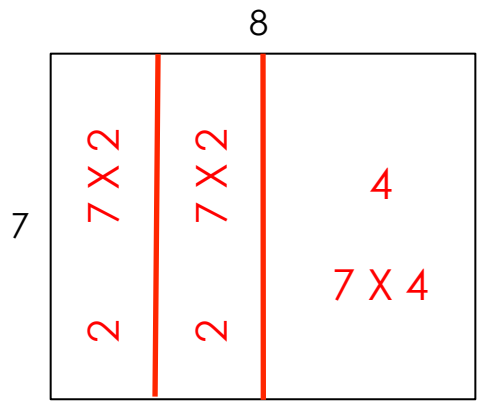
b. Show another way Jack could break his rectangle apart.



Record number models to show how he can use the pieces to solve 7 X 8.

8 X 5 = 40, 8 X 2 = 16, 40 + 16 = 56

c. Suppose Jack wants to break his rectangle into 3 parts. Show one way he could do this.



Record number models to show how he can use the pieces to solve 7 X 8.

7 X 2 = 14, 7 X 2 = 14, 7 X 4 = 28, 14 + 14 + 28 = 56

Name: *ANSWER KEY* Date: _____

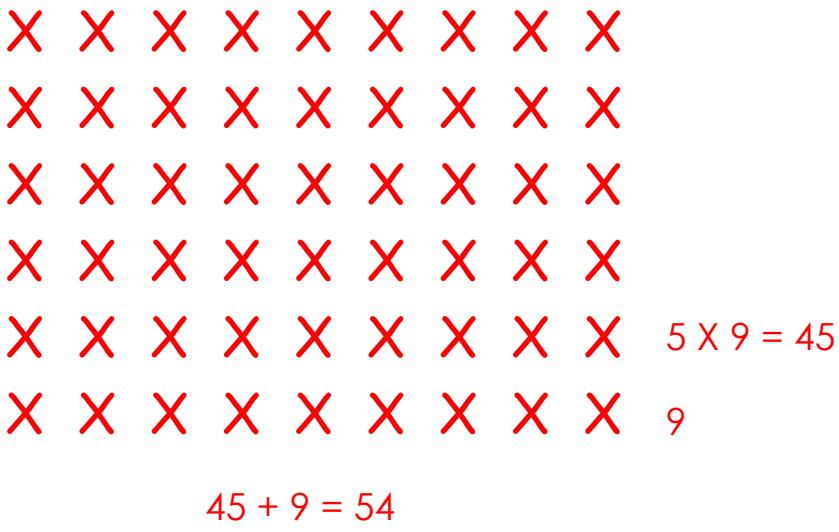
EVERYDAY MATHEMATICS—3rd Grade
Unit 5 Open Response Review
Using Multiplication Facts Strategies

Sydney is learning how to use more efficient strategies for multiplication.
She learned about adding or subtracting a group, doubling, and near squares.

She used the adding-a-group strategy to solve 6 X 9 = ?. She explained:

> "I will use the helper fact 5 X 9. I know that 5 X 9 =45.
> I can add one more group of 9 to 45 to get 54.
> I now have 6 groups of 9, so I know 6 X 9 = 54."

1) Use a picture to show how Sydney solved the problem
Explain how your picture matches Sydney's explanation.



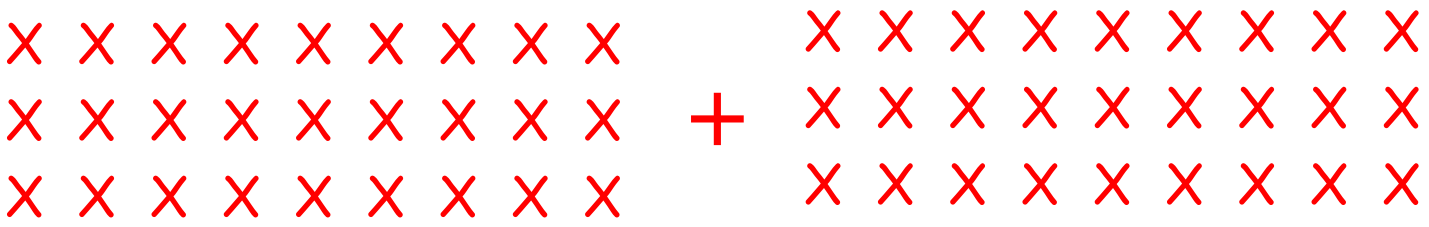
Possible answer: I drew an array to show that I know 5 X 9 = 45, like Sydney. Then I added one more row of 9 to the array because Sydney added one more group of 9. Now my array shows that 6 groups of 9 equals 54, like Sydney said.

Unit 5 Open Response Review (continued) *ANSWER KEY*

2) Choose at least one other efficient multiplication strategy, such as doubling or near squares, to solve 6 X 9 = ?.
Use pictures and words to show how you solved the problem.

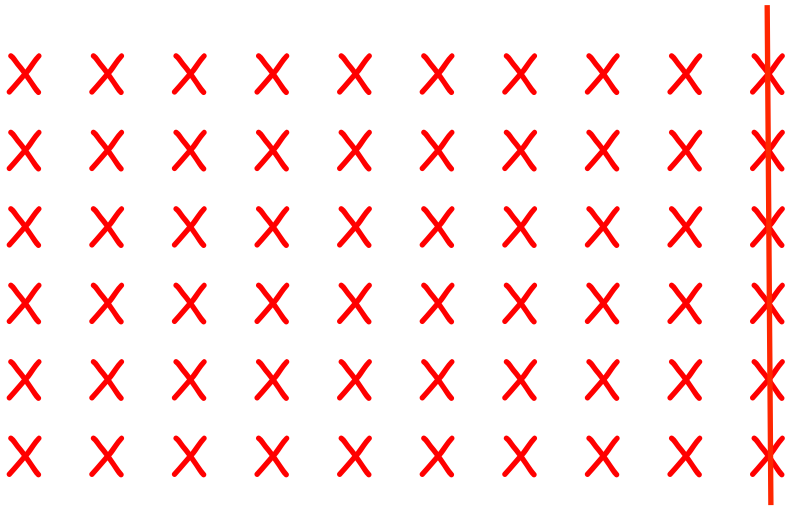
(*Hint:* What helper fact can you use?)

Answers will vary.



3 X 9 = 27 + 3 X 9 = 27

Possible answer: I knew 3 X 9 = 27, so I doubled the product. 27 + 27 is 54, so I know 6 X 9 = 54.



6 X 10 = 60 60 – 6 = 54

Possible answer: I know 6 X 10 is 60, so I took away one group of 6. 60 – 6 = 54.