## ESTAR <br> INTERVENTION



## Tier 2 Mathematics Intervention

Module: Multiplication \& Division Relationships (MDR)

## Teacher Display Masters



## The Meadows Center

FOR PREVENTING EDUCATIONAL RISK THE UNIVERSITY OF TEXAS AT AUSTIN COLLEGE OF EDUCATION

Mathematics Institute for Learning Disabilities and Difficulties

## www.meadowscenter.org

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1-100 Chart: 2s

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Use the 100s chart to show your work.
Makayla was given a sequence of numbers: 16, 20, 24, 28, 32. She knows that each number cannot be separated into groups of 3 or 5 equally. How could she prove this using the hundreds chart?

100 Chart

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Use your hundreds chart to answer the following questions.
1.) Counting by 3 s , what are the first 6 numbers? $\qquad$
$\qquad$
$\qquad$
$\qquad$ , ${ }^{\prime}$ ,
2.) How many groups of 3 is 30 ? $\qquad$
3.) Write an addition expression to show 9 groups of 3 .
4.) What is the pattern when skip counting by $3 s$ ? $\qquad$

Use the 100s chart to show your work.
Makayla was given a sequence of numbers: 16, 20, 24, 28, 32. She knows that each number cannot be separated into groups of 3 or 5 equally. How could she prove this using the hundreds chart?
answers may vary, but would include shading in the hundreds chart to show the skip counting pattern

100 Chart

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Use your hundreds chart to answer the following questions.
1.) Counting by 3s, what are the first 6 numbers? 3 , 6 , 9 ,

2.) How many groups of 3 is 30 ? 10
3.) Write an addition expression to show 9 groups of 3 .

$$
3+3+3+3+3+3+3+3+3
$$

4.) What is the pattern when skip counting by $3 s$ ? odd, even, odd, even

Use your 100 charts to continue the pattern.
1.) 90 , 100 , $\qquad$ ,

What did you skip count by? $\qquad$
2.) 42,44 , $\qquad$ , 48, $\qquad$
What did you skip count by? $\qquad$
3.) Starting at 5 , skip count by 5 s, what are the first 6 numbers? $\qquad$ ,
$\qquad$ , ${ }^{\prime}$ $\qquad$ , '
4.) Write an addition expression to show 4 groups of 3 .
5.) How many groups of 5 is 45 ? $\qquad$
6.) Is the 7 th group of 5 even or odd? $\qquad$
7.) What does 8 groups of 2 equal? $\qquad$
8.) We were skip counting by 3 s and stopped shading at 39 . Circle the letter of the number that would be shaded next.
A 40
B 42
C 36
D 41

Use your 100 charts to continue the pattern.
1.) $90,100, \underline{110}, \underline{120}$

What did you skip count by? $\quad 10$
2.) $42,44, \underline{46}, 48, \underline{50}$

What did you skip count by? _ 2
3.) Starting at 5 , skip count by 5 s, what are the first 6 numbers? $\qquad$ 5 $10 \cdot 15 \cdot 20 \cdot 25 \cdot 30$
4.) Write an addition expression to show 4 groups of 3 .

$$
3+3+3+3
$$

5.) How many groups of 5 is 45 ? $\qquad$
6.) Is the 7 th group of 5 even or odd? $\qquad$ odd
7.) What does 8 groups of 2 equal? $\qquad$ 16
8.) We were skip counting by 3 s and stopped shading at 39. Circle the letter of the number that would be shaded next.

A 40
B 42
C 36
D 41

Equal groups
Materials needed:

1. 1 number cube

Directions:

1. Roll the number cube to find the number of equal groups.
2. Draw a picture for the equal groups.
3. Roll the number cube to find the number in each group.
4. Draw a picture for the number in each group.
5. Complete the equal-groups sentence.
6. Write a repeated addition equation.
1.) $\qquad$ groups of $\qquad$ equals $\qquad$ .
$\square$
repeated addition: $\qquad$
2.) $\qquad$ groups of $\qquad$ equals $\qquad$ .
$\square$
repeated addition: $\qquad$

3.)___ groups of $\qquad$ equals $\qquad$ .
$\square$
repeated addition:

Helen had 10 beads. She put them in equal groups to make bracelets. She had 2 groups of 3 and 1 group of 4 . Does Helen have all the beads in equal groups?
1.) What is the question asking you to find? $\qquad$
2.) Model Helen's groups.
3.) Are these in equal-groups? $\qquad$
4.) Draw 10 beads in equal groups.
5.) $\qquad$ groups of $\qquad$ equals $\qquad$

Write the repeated addition equation for the equal-groups model or the equal-groups sentence.
6.)

7.)

8.) 3 groups of 8 equals 24 .

Draw an equal groups model for each of the following.
7.) 6 groups of 3 equals 18 .
$\square$
8.) $4+4+4+4+4=20$
$\square$
9.) 4 groups of $3=2$ groups of 6
$\square$

Equal groups
Materials needed:

1. 1 number cube

Directions:

1. Roll the number cube to find the number of equal groups.
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3. Roll the number cube to find the number in each group.
4. Draw a picture for the number in each group.
5. Complete the equal-groups sentence.
6. Write a repeated addition equation.
1.) $\qquad$ groups of $\qquad$ equals $\qquad$ .
answers may vary
repeated addition: $\qquad$
2.) $\qquad$ groups of $\qquad$ equals $\qquad$ .
$\square$
repeated addition: $\qquad$
3.) ____ groups of $\qquad$ equals $\qquad$ .
$\square$
repeated addition:

Helen had 10 beads. She put them in equal groups to make bracelets. She had 2 groups of 3 and 1 group of 4 . Does Helen have all the beads in equal groups?
1.) What is the question asking you to find? $\qquad$
Equal groups
2.) Model Helen's groups.

3.) Are these in equal-groups? $\qquad$ No
4.) Draw 10 beads in equal groups.

5.) $\underline{2}$ groups of $\underline{5}$ equals $\underline{10}$ or 5 groups of 2 equals 10

Write the repeated addition equation for the equal-groups model or the equal-groups sentence.
6.)

$7+7=14$
7.)
 $2+2+2+2+2=10$
8.) 3 groups of 8 equals 24 .

$$
8+8+8=24
$$

Draw an equal groups model for each of the following.
7.) 6 groups of 3 equals 18 .

8.) $4+4+4+4+4=20$

9.) 4 groups of $3=2$ groups of 6

1.) Skip count by 2 s to continue the pattern. 112, 114 , $\qquad$ 118, $\qquad$
2.) Skip count by 5 s to continue the pattern. 235, $\qquad$ , 245, 250, $\qquad$

Complete the equal groups sentence for the equal groups model.
 $\qquad$ groups of $\qquad$ equals $\qquad$ .

Write the repeated addition equation for the equal-groups model or the equal groups sentence.
$\qquad$
5.) 5 groups of 9 equals 45 . $\qquad$

Draw an equal groups model.
6.) 4 groups of 8 equals 32 .
$\square$

Draw an equal groups model.
7.) $2+2+2+2+2+2+2=7+7$
$\square$
8.) Sally has 6 buttons to sew on her sweater. Each button has 4 holes. Draw an equal groups model for Sally's 6 buttons with 4 holes each.
9.) How many button holes are there altogether on the 6 buttons?
1.) Skip count by 2 s to continue the pattern. 112, 114, 116, 118, 120
2.) Skip count by 5 s to continue the pattern. $235, \underline{240}, 245,250, \underline{255}$

Complete the equal groups sentence for the equal groups model.


Write the repeated addition equation for the equal-groups model or the equal groups sentence.
4.)


$$
4+4+4+4=16
$$

5.) 5 groups of 9 equals 45 . $\qquad$ $9+9+9+9+9=45$

Draw an equal groups model.
6.) 4 groups of 8 equals 32 .



Draw an equal groups model.
7.) $2+2+2+2+2+2+2=7+7$

8.) Sally has 6 buttons to sew on her sweater. Each button has 4 holes. Draw an equal groups model for Sally's 6 buttons with 4 holes each.

9.) How many button holes are there altogether on the 6 buttons?

## Module MDR Lesson 3 Modeled Practice

> Julian sees 4 baskets with 3 apples in each basket. He writes the multiplication expression $4 \times 4 \times 4$ to find the total number of apples in all 4 baskets. Is his multiplication expression correct? Why?

Julian sees 4 baskets with 3 apples in each basket. He writes the multiplication expression $4 \times 4 \times 4$ to find the total number of apples in all 4 baskets. Is his multiplication expression correct? Why?


4 groups of 3

$$
3+3+3+3
$$

$4 \times 3$

No, his multiplication expression is wrong. He wrote the repeated addition equation.

Write a repeated addition equation and a multiplication equation for each equal groups model.


Model $1=$ Model 2
Addition:
$\qquad$

Multiplication:
2.)


$$
\text { Model } 1 \text { = Model } 2
$$

Addition:
$\qquad$ $=$ $\qquad$

Multiplication:
$=$ $\qquad$


Model $1=$ Model 2
Addition:

Multiplication:
$=$ $\qquad$

Write a repeated addition equation for each equal-groups sentence.
1.) 3 groups of 6 equals 18 . $\qquad$
2.) 5 groups of 7 equals 35 . $\qquad$

Write a multiplication equation for each equal-groups sentence.
3.) 7 groups of 3 equals 21 . $\qquad$
4.) 8 groups of 4 equals 32 . $\qquad$

Write a multiplication equation for each repeated addition equation.
5.) $3+3+3+3+3=15$ $\qquad$
6.) $6+6+6+6=24$

Write a repeated addition equation and a multiplication equation for each equal groups model.


Model 1 = Model 2
Addition:


Multiplication:

$$
4 \times 5
$$

$\qquad$
2.)


$$
\text { Model } 1 \text { = Model } 2
$$

Addition:

$$
6+6+6=3+3+3+3+3+3
$$

Multiplication:

$$
6 \times 3
$$

$$
=
$$




Model 1 = Model 2
Addition:
$\qquad$
$5+5+5+5+5+5+5$

Multiplication:

$$
5 \times 7=7 \times 5
$$

Write a repeated addition equation for each equal-groups sentence.
1.) 3 groups of 6 equals 18 . $6+6+6=18$
2.) 5 groups of 7 equals 35 . $\qquad$
$7+7+7+7+7=35$

Write a multiplication equation for each equal-groups sentence.
3.) 7 groups of 3 equals 21 . $\qquad$
$7 \times 3=21$
4.) 8 groups of 4 equals 32 .
$8 \times 4=32$

Write a multiplication equation for each repeated addition equation.
5.) $3+3+3+3+3=15$ $3 \times 5=15$
6.) $6+6+6+6=24$ $6 \times 4=24$
1.) Draw an equal groups model for 6 groups of 8 .
2.) Draw an equal groups model for $4+4+4$.

Write a repeated addition equation and a multiplication equation for each equal-groups model.

3 groups of 2 equals 6 .
3.) $\qquad$
addition
4 groups of 9 equals 36 .
5.) $\qquad$
addition
4.) $\qquad$
multiplication
6.) $\qquad$
multiplication

Write a multiplication equation for each repeated addition equation.
7.) $8+8+8=24$
8.) $10+10+10+10+10=50$ $\qquad$
9.) Kyle separated 16 apples into baskets and told the teacher they were in equal groups. Circle the answer that shows the apples in equal groups.

1.) Draw an equal groups model for 6 groups of 8 .

2.) Draw an equal groups model for $4+4+4$.


Write a repeated addition equation and a multiplication equation for each equal-groups model.

3 groups of 2 equals 6 .
3.)

4.) $\frac{3 \times 2=6 \text { or } 2 \times 3=6}{\text { multiplication }}$

4 groups of 9 equals 36 .

6.) $\frac{4 \times 9=36 \text { or } 9 \times 4=36}{\text { multiplication }}$

Write a multiplication equation for each repeated addition equation.
7.) $8+8+8=24$ $\qquad$ $8 \times 3=24$ or $3 \times 8=24$
8.) $10+10+10+10+10=50$
$10 \times 5=50$ or $5 \times 10=50$

9.) Kyle separated 16 apples into baskets and told the teacher they were in equal groups. Circle the answer that shows the apples in equal groups.


$\stackrel{y}{n}-0$ Module MDR
Lesson 4
Modeled Practice \#1 Key


Use the number line to solve.


Fill in the boxes and solve the multiplication problem using the number line.

$8 \times 3=\square$

3.) Jackson is asked to bag up cookies at the bakery where he works. He is told to put 3 cookies in each bag. He has been given 7 bags to fill. How many cookies will Jackson need to fill all 7 bags?

$\ldots$ groups of $\qquad$ equals $\qquad$
$\qquad$ $\times \ldots$ $\qquad$


Fill in the boxes and solve the multiplication problem using the number line.

2.) $\times 1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8$

$8 \times 3=24$

3.) Jackson is asked to bag up cookies at the bakery where he works. He is told to put 3 cookies in each bag. He has been given 7 bags to fill. How many cookies will Jackson need to fill all 7 bags?

$\underline{7}$ groups of 3 equals $\quad 21$
$\underline{7} \times \underline{3}=\underline{21}$
1.) Write the repeated addition equation for the equal-groups model.

2.) Draw the equal groups model for 2 groups of 8 .

Fill in the boxes, solve the multiplication problem using the number line.
3.)

4.) $9 \times 3=$ $\square$
5.) $\square$ groups of $\square$ equals $\square$

Represent the problem on the number line and solve.
6.)

$8 \times 2=$ $\qquad$
$\qquad$ equals
7.) Represent the problem on the number line and solve.

$3 \times 6=$ $\qquad$
___ groups of $\qquad$ equals $\qquad$
8.) Karen was asked to model $2 \times 7$ on the number line. Circle the answer that shows the correct model.


B

c


D

1.) Write the repeated addition equation for the equal-groups model.

2.) Draw the equal groups model for 2 groups of 8 .


Fill in the boxes, solve the multiplication problem using the number line.

4.) $9 \times 3=$ 27
5.) $\square$ groups of 3 equals 27

Represent the problem on the number line and solve.
6.)

$8 \times 2=16$

## Module MDR Lesson 4 Independent Practice Key

7.) Represent the problem on the number line and solve.


3 groups of 6 equals $18 \quad 6$ groups of 3 equals 18
8.) Karen was asked to model $2 \times 7$ on the number line. Circle the answer that shows the correct model.


B


C


D


Use addition or subtraction to find the unknown.
1.)

2.)

3.) Write a story problem using the numbers from 1 of the strip diagrams above.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Use addition or subtraction to find the unknown.
1.)


$$
18+7=25 \quad n=25
$$

2.)


$$
30-24=6
$$

$n=6$
3.) Write a story problem using the numbers from 1 of the strip diagrams above.
answers will vary
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$3 \times 6=?$
$\ldots$ groups of $\qquad$

Module MDR
Lesson 5
Modeled Practice Key

$$
3 \times 6=?
$$

$$
3 \text { groups of } 6
$$



Use the number line and draw a strip diagram to solve.
1.) Over the winter break, Trevor played video games for 4 hours each day. If he played video games for 3 days in a row, how many hours of video games did he play for all 3 days?

3.)

Write multiplication equations for the strip diagrams and solve.


Draw a strip diagram for the given multiplication problems and solve.
4.) $5 \times 4=$ $\qquad$

5.) $6 \times 6=$ $\qquad$
6.) Write a story problem for one of the strip diagram above.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

Use the number line and draw a strip diagram to solve.
1.) Over the winter break, Trevor played video games for 4 hours each day. If he played video games for 3 days in a row, how many hours of video games did he play for all 3 days?


$$
3 \times 4=12
$$

Write multiplication equations for the strip diagrams and solve.

3.)


$$
3 \times 8=24
$$

Draw a strip diagram for the given multiplication problems and solve.

5.) $6 \times 6=\underline{36}$

6.) Write a story problem for one of the strip diagram above. answers will vary
$\qquad$
$\qquad$
$\qquad$
$\qquad$
1.) Write a multiplication sentence for the equal groups sentence.

9 groups of 4 equals 36 $\qquad$
2.) Write a multiplication equation for the repeated addition equation.
$8+8+8+8+8+8+8=56$

Write multiplication equations for the strip diagrams and solve.
3.)

4.)

| $?$ |  |
| :--- | :--- |
| 7 |  |

$\qquad$


Draw a strip diagram for the multiplication problems and solve.
5.) $4 \times 4=$ $\qquad$

7.) $4 \times 8=$ $\qquad$
8.)

9.) Jonah ran 3 miles every day for 1 week. After 1 week, how many miles did Jonah run in all? (Remember: 1 week $=7$ days) Circle the letter of the strip diagram that represents this problem.
A $7 \times 3$
C $7 \times 7$


B $3 \times 3$
D $3 \times 1$

1.) Write a multiplication sentence for the equal groups sentence.

9 groups of 4 equals 36 $9 \times 4=36$
2.) Write a multiplication equation for the repeated addition equation.

$$
8+8+8+8+8+8+8=56 \quad 8 \times 7=56
$$

Write multiplication equations for the strip diagrams and solve.
3.)

$\underline{6} \times \underline{5}=\underline{30}$
4.)

| $?$ |  |
| :---: | :---: |
| 7 | 7 |
|  | $\vdots$ |
|  |  |

Draw a strip diagram for the multiplication problems and solve.
5.) $4 \times 4=\underline{16}$
6.)

7.) $4 \times 8=\underline{32}$
8.)

9.) Jonah ran 3 miles every day for 1 week. After 1 week, how many miles did Jonah run in all? (Remember: 1 week $=7$ days) Circle the letter of the strip diagram that represents this problem.
(A) $7 \times 3$
C $7 \times 7$


B $3 \times 3$



D $3 \times 1$


## Equal groups:

Equal-groups sentence: $\qquad$

Repeated addition equation: $\qquad$

Multiplication equation: $\qquad$

## Array:

How many rows? $\qquad$
How many columns? $\qquad$

Equal-groups sentence: $\qquad$
Repeated addition equation:
Multiplication equation:


## Equal groups:

Equal-groups sentence: 3 groups of 5 equals 15
Repeated addition equation: $5+5+5=15$
Multiplication equation: $\quad 5 \times 3=15$ or $3 \times 5=15$

## Array:

How many rows? 3

How many columns? 5
Equal-groups sentence: 3 groups of 5 equals 15
Repeated addition equation: $5+5+5=15$
Multiplication equation: $3 \times 5=15$ or $5 \times 3=15$
1.) Use dots or circles to draw an array with 7 rows of 6.
2.) Write a multiplication equation for the array you drew.
3.) Write the equal-groups sentence for $5 \times 2=10$.
$\qquad$ groups of $\qquad$ equals $\qquad$
$\qquad$ groups of $\qquad$ equals $\qquad$
4.) Draw an array to model 5 groups of 2 .
5.) Write a repeated addition equation for this array.
6.) What is the multiplication equation for this array?
1.) Use dots or circles to draw an array with 7 rows of 6.

2.) Write a multiplication equation for the array you drew.

$$
7 \times 6=42 \text { or } 6 \times 7=42
$$

3.) Write the equal-groups sentence for $5 \times 2=10$.

| 2 groups of $\frac{5}{2}$ equals $\frac{10}{5}$ groups of 2 equals $\quad 10$ |
| :--- |

4.) Draw an array to model 5 groups of 2 .

5.) Write a repeated addition equation for this array.

| $3+3+3+3=12$ |
| :---: |
| or $4+4+4=12$ |

6.) What is the multiplication equation for this array?

$$
4 \times 3=12 \text { or } 3 \times 4=12
$$

Write a multiplication sentence for the bar models and solve.

2.)


3.) Write a repeated addition equation for this array.

4.) What is the multiplication equation for this array?
$\qquad$
5.) Use dots or circles to draw an array with 4 rows of 6 .
6.) Write a multiplication equation for the array you drew.
$\qquad$
7.) How do equal groups and array models show multiplication?

## Module MDR <br> Lesson 6 Independent Practice

8.) The box of crayons has 3 rows with 6 crayons in each row. Circle the letter of the array and multiplication equation that represents the crayon box.


B

$3 \times 6=18$

$6 \times 1=6$

$3 \times 3=9$

Write a multiplication sentence for the bar models and solve.
1.)



2.)



## Module MDR Lesson 6 Independent Practice Key



$$
\frac{7+7+7=21}{\text { or } 3+3+3+3+3+3+3=21}
$$

4.) What is the multiplication equation for this array?

$$
\begin{gathered}
3 \times 7=21 \\
\hline \text { or } 7 \times 3=21
\end{gathered}
$$

5.) Use dots or circles to draw an array with 4 rows of 6 .

6.) Write a multiplication equation for the array you drew.

$$
4 \times 6=24 \text { or } 6 \times 4=24
$$

7.) How do equal groups and array models show multiplication? Show equal groups, but in a row or column.

8.) The box of crayons has 3 rows with 6 crayons in each row. Circle the letter of the array and multiplication equation that represents the crayon box.

$3 \times 2=6$

$3 \times 6=18$

$6 \times 1=6$

$3 \times 3=9$


columns

$\qquad$


The area of the carpet is


9
columns

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

$\underline{5} \times \underline{9}=\underline{45}$
$\underline{9} \times \underline{5}=45$

The area of the carpet is

Sienna is sewing a quilt. She put the quilt squares in 3 rows of 10 quilt squares. Find the area of the quilt using the tiles.

Write 2 multiplication equations that represent the array.
1.) $\qquad$ $\times$ $\qquad$ $=$
2.) $\qquad$ $\times$ $\qquad$ $=$

The area of the quilt is $\qquad$ square units.

## Area of My Neighborhood

## Directions:

1. Write a multiplication expression.
2. Find the area of each place in the neighborhood.
3. Record your answers here:

Gas Station: $\qquad$ $\times$ $\qquad$ Hospital: $\qquad$ $\times$ $\qquad$ Grocery Store: $\qquad$ $\times$ $\qquad$

$$
A=
$$

$A=$ $\qquad$
$A=$ $\qquad$

Park: $\qquad$ $\times$ $\qquad$ School: $\qquad$ Post Office: $\qquad$ $\times$ $\qquad$
$A=$ $\qquad$

$$
A=
$$

$\qquad$

$$
A=
$$

$\qquad$


Sienna is sewing a quilt. She put the quilt squares in 3 rows of 10 quilt squares. Find the area of the quilt using the tiles.

Write 2 multiplication equations that represent the array.
1.) $3 \times \underline{10}=\underline{30}$
2.) $10 \times \underline{3}=30$

The area of the quilt is 30 square units.

## Area of My Neighborhood

## Directions:

1. Write a multiplication expression.
2. Find the area of each place in the neighborhood.
3. Record your answers here:


Park: $4 \times \underline{2}$
$A=\underline{8}$

School: $\underline{5} \times \underline{7}$ Post Office: $\underline{4} \times \underline{4}$

$$
A=\underline{35} \quad A=\underline{16}
$$



Read and solve. Look at the array below.

1.) Write a repeated addition equation for the array.
2.) Write a multiplication equation for the array. $\qquad$
3.) Write another multiplication equation for the array. $\qquad$
4.) The package of batteries has 6 rows of 2 batteries in each row. Which array and multiplication sentence best represents the batteries.


Look at the shaded area.

5.) How many columns?

How many in each column? $\qquad$
6.) How many rows? $\qquad$

How many in each row? $\qquad$
7.) Write 2 multiplication equations that represent the shaded area.

$\times$ $\qquad$
$\qquad$
8.) Aaron is drawing a model of the kitchen floor. He shaded 8 columns of 3 tiles. Use the grid to show Aaron's drawing of the floor.

|  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

$\qquad$

Read and solve. Look at the array below.

1.) Write a repeated addition equation for the array.

$$
8+8+8+8=32
$$

2.) Write a multiplication equation for the array. $4 \times 8=32$
3.) Write another multiplication equation for the array. $\qquad$
4.) The package of batteries has 6 rows of 2 batteries in each row. Which array and multiplication sentence best represents the batteries.


## Module MDR <br> Lesson 7 <br> Independent Practice Key

Look at the shaded area.

5.) How many columns? $\qquad$

How many in each column? $\qquad$
6.) How many rows? $\qquad$ 4

How many in each row? $\qquad$
7.) Write 2 multiplication equations that represent the shaded area.

$$
4 \times 6=24 \quad 6 \times 4=24
$$

8.) Aaron is drawing a model of the kitchen floor. He shaded 8 rows of 3 tiles. Use the grid to show Aaron's drawing of the floor.


What is the area of the kitchen floor? $\qquad$ square units

Number line:

$3 \times 8=$ $\qquad$
Array model:
Repeated addition equation:


Area Model:

|  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

Multiplication equation:


The area is $\qquad$ square units.

## Module MDR <br> Lesson 8 <br> Modeled Practice \#1 Key

Number line:


$$
3 \times 8=24
$$

Array model:
Repeated addition equation:


Area Model:

|  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

Multiplication equation:

$$
2 \times \frac{8}{8} \times \frac{16}{2}=16
$$

The area is $\qquad$ 16 square units.

Karina earned \$7 a week for doing her chores. She did her chores for 4 weeks. How much money did Kristina earn?

Use the number line to solve.

1.) Write the repeated addition equation.
2.) Write 2 multiplication equations.
3.) Kristina earned \$ $\qquad$ .

Read the problem:

$$
7 \times 6
$$

## Write a repeated addition equation.

Draw an array using circles.

Shade the area in the grid.

|  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |

Solve the problem:

$$
7 \times 6=
$$

$\qquad$

Karina earned \$7 a week for doing her chores. She did her chores for 4 weeks. How much money did Kristina earn?

Use the number line to solve.

1.) Write the repeated addition equation.
$\frac{7+7+7+7=28}{\text { or } 4+4+4+4+4+4+4=28}$
2.) Write 2 multiplication equations.

$$
7 \times 4=28
$$

$$
4 \times 7=28
$$

3.) Kristina earned \$ $\qquad$ 28 .

Read the problem:

$$
7 \times 6
$$

Write a repeated addition equation.

$$
7+7+7+7+7+7
$$

$$
\text { or } 4+4+4+4+4+4+4=28
$$

Draw an array using circles.


Shade the array in the grid.


Solve the problem:

$$
7 \times 6=42
$$

1.) Use dots or circles to draw an array with 5 rows of 2.
2.) Write the repeated addition equation.
3.) Write 2 multiplication equations for the array.
4.) Look at the array below.


Which expression best represents the array?
A $3 \times 5$
B $6 \times 2$
C $6 \times 3$
D $7 \times 3$
5.) Look at the shaded area.


Write 2 multiplication equations that represent the shaded area.
6.) What is the shaded area? $\qquad$ square units
7.) Matthew is building a dog house. What is the area of the dog house in his drawing?


The area of the dog house is $\qquad$ square units.
8.) Which multiplication equations can be used to find the area of the dog house?
A $5 \times 5$
B $5 \times 6$
C $5 \times 7$
D $6 \times 4$
1.) Use dots or circles to draw an array with 5 rows of 2.

2.) Write the repeated addition equation.

$$
2+2+2+2+2=10 \text { or } 5+5=10
$$

3.) Write 2 multiplication equations for the array.

$$
2 \times 5=10
$$

$$
5 \times 2=10
$$

4.) Look at the array below.


Which expression best represents the array?
A $3 \times 5$
B $6 \times 2$
(C) $6 \times 3$
D $7 \times 3$
5.) Look at the shaded area.


Write 2 multiplication equations that represent the shaded area.

$$
2 \times 9=18 \quad 9 \times 2=18
$$

6.) What is the shaded area? 18 square units
7.) Matthew is building a dog house. What is the area of the dog house in his drawing?


The area of the dog house is $\qquad$ square units.
8.) Which multiplication equations can be used to find the area of the dog house?
A $5 \times 5$
(B) $5 \times 6$
C $5 \times 7$
D $6 \times 4$

Solve each problem using the multiplication table. Circle the product for each problem.

## 1.) $9 \times 6=$ <br> $\qquad$

2.)
$\begin{array}{r} \\ \times 7 \\ \hline\end{array}$
3.) $\begin{array}{r}7 \\ \times 3 \\ \hline\end{array}$
4.) $8 \times 4=$ $\qquad$
5.) $6 \times 7=$ $\qquad$ 6.) $\begin{array}{r}2 \\ \times 9 \\ \hline\end{array}$

Use the multiplication table to list the multiples.
7.) List the multiples of 7 to 70 . $\qquad$
8.) List the multiples of 3 to 30 . $\qquad$
9.) The Cowboys scored 6 touchdowns during the football game on Sunday. Each touchdown earned the team 7 points. What is the score after 6 touchdowns? Write the problem and use your multiplication table to solve.

## Connect Four

## Materials needed:

1. 2 number cubes
2. 2 different colored counters
3. Multiplication chart

Directions:

1. Roll a number cube to see who goes first.
2. Player 1 rolls both number cubes to create a multiplication problem.
3. Place your counter on the product.
4. Player 2 repeats the same steps.
5. The first player to get 4 in a row wins.
6. Once a square is marked, it cannot be used again. Use your knowledge of the Commutative Property of Multiplication to find a square that is not marked.

Solve each problem using the multiplication table. Circle the product for each problem.
1.) $9 \times 6=\underline{54}$
2.) $\begin{array}{r}8 \\ \times 7 \\ \hline 56\end{array}$
3.) $\begin{array}{r}7 \\ \times 3 \\ \hline 21\end{array}$
4.) $8 \times 4=\underline{32}$
5.) $6 \times 7=\underline{42}$
6.) $\begin{array}{r}2 \\ \times 9 \\ \hline 18\end{array}$

Use the multiplication table to list the multiples.
7.) List the multiples of 7 to 70 . $7,14,21,28,35,42,49,56,63,70$
8.) List the multiples of 3 to 30. $3,6,9,12,15,18,21,24,27,30$
9.) The Cowboys scored 6 touchdowns during the football game on Sunday. Each touchdown earned the team 7 points. What is the score after 6 touchdowns? Write the problem and use your multiplication table to solve.

$$
6 \times 7=42
$$

## Connect Four

## Materials needed:

1. 2 number cubes
2. 2 different colored counters
3. Multiplication chart

Directions:

1. Roll a number cube to see who goes first.
2. Player 1 rolls both number cubes to create a multiplication problem.
3. Place your counter on the product.
4. Player 2 repeats the same steps.
5. The first player to get 4 in a row wins.
6. Once a square is marked, it cannot be used again. Use your knowledge of the Commutative Property of Multiplication to find a square that is not marked.

Read and solve.
1.) Write a multiplication equation using the area model below.

2.) Write a multiplication equation using the bar model.


Use the words "factor" and "product" to fill in the blanks.
3.) $\qquad$ $\times$ $\qquad$ = $\qquad$

Solve the multiplication problems using the multiplication table.
4.) $\begin{array}{r}4 \\ \times 7 \\ \hline\end{array}$
5.) $\begin{array}{r}6 \\ \times 6 \\ \hline\end{array}$
6.) $9 \times 8=$ $\qquad$ 7.) $3 \times 8=$ $\qquad$
8.) $\begin{array}{r}7 \\ \times 7 \\ \hline\end{array}$
9.) $8 \times 8=$ $\qquad$

Choose the best answer.
10.) During the football game on Friday, the Tigers scored 8 field goals. Each field goal is worth 3 points. How many points did the tigers earn for the field goals?
A $8 \times 3=24$
C $3 \times 8=42$
B $8 \times 7=56$
D $8 \times 3=12$

Read and solve.
1.) Write a multiplication equation using the area model below.


$$
4 \times 3=12 \text { or } 3 \times 4=12
$$

2.) Write a multiplication equation using the bar model.


$$
4 \times 3=12 \text { or } 3 \times 4=12
$$

Use the words "factor" and "product" to fill in the blanks.
3.) factor $\times \ldots$ factor $=\ldots$ product


Solve the multiplication problems using the multiplication table.
4.) $\begin{array}{r}4 \\ \times 7 \\ \hline 28\end{array}$
5.) $\begin{array}{r}6 \\ \times 6 \\ \hline 36\end{array}$
6.) $9 \times 8=\underline{72}$
7.) $3 \times 8=\underline{24}$
8.) $\begin{array}{r}7 \\ \times 7 \\ \hline 49\end{array}$
9.) $8 \times 8=\underline{64}$

Choose the best answer.
10.) During the football game on Friday, the Tigers scored 8 field goals. Each field goal is worth 3 points. How many points did the tigers earn for the field goals?
(A) $8 \times 3=24$
C $3 \times 8=42$
B $8 \times 7=56$
D $8 \times 3=12$

## Equal Share: Breaking quantities apart so that everyone gets the same amount.

Equal Share: Breaking quantities apart so that
everyone gets the same amount. equals ___ shared equally with ___ $\quad$ students
per student with ___ leftover.

## Answers will vary depending on the size of the group

Use counters to solve.
1.) 4 friends found a treasure chest with 21 coins in it. How many coins did each friend get after the friends shared the coins equally?
$\qquad$ shared equally with $\qquad$ friends equals $\qquad$ per friend with $\qquad$ leftover.
2.) 6 pirates found a lost treasure of gold. So no one would get hurt, the pirates decided to share the 28 pieces of gold equally. How many pieces of gold did each pirate get?
$\qquad$ shared equally with $\qquad$ pirates equals $\qquad$ per pirate with $\qquad$ leftover.

## Equal Share Charades

## Materials needed:

1. Equal Share Charade Cards

## Directions:

1. Player 1 picks a charade card.
2. Using counters, Player 1 "acts out" the problem.
3. Player $\mathbf{2}$ watches carefully to try to figure it out what problem player 1 is solving.
4. Player 2 records their guess in the equal groups sentence below.
5. If player 2 is correct, then the players switch roles.
6. If player 2 is incorrect, player 1 has 1 more chance to act out the problem.
1.) $\qquad$ shared equally with $\qquad$ friends equals $\qquad$ per friend with $\qquad$ leftover.
2.) $\qquad$ shared equally with $\qquad$ friends equals $\qquad$ per friend with $\qquad$ leftover.
3.) $\qquad$ shared equally with $\qquad$ friends equals $\qquad$ per friend
with $\qquad$ leftover.

Use counters to solve.
1.) 4 friends found a treasure chest with 21 coins in it. How many coins did each friend get after the friends shared the coins equally?

21 shared equally with 4_ friends equals 5 per friend with _1 leftover.
2.) 6 pirates found a lost treasure of gold. So no one would get hurt, the pirates decided to share the 28 pieces of gold equally. How many pieces of gold did each pirate get?

28 shared equally with $\qquad$ pirates equals $\qquad$ 4 per pirate with 4 leftover.

## Equal Share Charades

## Materials needed:

1. Equal Share Charade Cards

## Directions:

1. Player 1 picks a charade card.
2. Using counters, Player 1 "acts out" the problem.
3. Player $\mathbf{2}$ watches carefully to try to figure it out what problem player 1 is solving.
4. Player 2 records their guess in the equal groups sentence below.
5. If player 2 is correct, then the players switch roles.
6. If player 2 is incorrect, player 1 has 1 more chance to act out the problem.

## Answers will vary

1.) $\qquad$ shared equally with $\qquad$ friends equals $\qquad$ per friend with $\qquad$ leftover.
2.) $\qquad$ shared equally with $\qquad$ friends equals $\qquad$ per friend with $\qquad$ leftover.
3.) $\qquad$ shared equally with $\qquad$ friends equals $\qquad$ per friend
with $\qquad$ leftover.

Use the multiplication table to solve.
1.) $\begin{array}{r}6 \\ \times \quad 8 \\ \hline\end{array}$
2.) $\begin{array}{r}7 \\ \times \quad 9 \\ \hline\end{array}$
3.) $\begin{array}{r}4 \\ \times \quad 6 \\ \hline\end{array}$
4.) Circle the factors in the multiplication sentence.

$$
5 \times 7=35
$$

Use counters to solve.
5.) 5 students equally shared 14 pencils. How many pencils did each student get? ( 1 point per space)
$\qquad$ shared equally with $\qquad$ students equals $\qquad$ per student with $\qquad$ leftover.
6.) 2 rats were given 12 pieces of cheese. To the scientist's amazement, the rats shared the cheese equally. How many pieces of cheese did each rat eat? (1 point per space)
$\qquad$ shared equally with $\qquad$ rats equals $\qquad$ per rat with
$\qquad$ leftover.

Circle the best answer.
7.) 4 friends found 18 silver coins. Which way shows the friends sharing equally?

A 18 shared equally with 4 friends equals 3 per friend with 6 leftover.
B 18 shared equally with 4 friends equals 4 per friend with 2 leftover.
C 4 shared equally with 18 friends equals 4 per friend with 2 leftover.
D 18 shared equally with 4 friends equals 5 per friend with 0 leftover.

Module MDR
Lesson 10
Independent Practice Key
Use the multiplication table to solve.
1.) $\begin{array}{r}6 \\ \times 8 \\ \hline 48\end{array}$
2.) $\begin{array}{r}7 \\ \times \quad 9 \\ \hline 63\end{array}$
3.) $\begin{array}{r}4 \\ \times 6 \\ \hline 24\end{array}$
4.) Circle the factors in the multiplication sentence.

$$
\text { (5) } \times 7=35
$$

Use counters to solve.
5.) 5 students equally shared 14 pencils. How many pencils did each student get? (1 point per space)

14 shared equally with 5 students equals 2 per student with 4 leftover.
6.) 2 rats were given 12 pieces of cheese. To the scientist's amazement, the rats shared the cheese equally. How many pieces of cheese did each rat eat? (1 point per space)
$\square$ shared equally with $\qquad$ rats equals $\qquad$ per rat with
$\square$ leftover.

Circle the best answer.
7.) 4 friends found 18 silver coins. Which way shows the friends sharing equally?

A 18 shared equally with 4 friends equals 3 per friend with 6 leftover.
B) 18 shared equally with 4 friends equals 4 per friend with 2 leftover.

C 4 shared equally with 18 friends equals 4 per friend with 2 leftover.
D 18 shared equally with 4 friends equals 5 per friend with 0 leftover.

## Module MDR Lesson 11 <br> Modeled Practice Sheet

## Equal Share


divided equally into
groups
equals ___ with ___ leftover.

## Equal Share



Use counters to solve the division problem. Draw dots in the strip diagram to represent the counters.
1.) 16 divided equally into 4 groups equals $\qquad$ .

2.) Isabella made treats for her teachers as a thank you. She made 28 treats. She has 7 teachers she wants to give treats to. If she gives each teacher the same amount, how many will each teacher receive?

28 divided equally into 7 groups equals $\qquad$ .

3.) 24 divided equally into 6 groups equals $\qquad$ .
$\square$

Is this reasonable? Look at each problem and decide if it is reasonable. Write yes or no on the line and explain why or why not. Draw a strip diagram or use counters if needed.
4.) 36 divided equally into 4 groups equals 19 . $\qquad$
5.) $\mathbf{1 8}$ divided equally into 9 groups equals 2 . $\qquad$

Use counters to solve the division problem. Draw dots in the strip diagram to represent the counters.
1.) 16 divided equally into 4 groups equals $\qquad$ 4 .

2.) Isabella made treats for her teachers as a thank you. She made 28 treats. She has 7 teachers she wants to give treats to. If she gives each teacher the same amount, how many will each teacher receive?

28 divided equally into 7 groups equals $\qquad$ 4

3.) 24 divided equally into 6 groups equals $\qquad$ 4


Is this reasonable? Look at each problem and decide if it is reasonable. Write yes or no on the line and explain why or why not. Draw a strip diagram or use counters if needed.
4.) 36 divided equally into 4 groups equals 19. No Answers for why or why not will vary
5.) $\mathbf{1 8}$ divided equally into 9 groups equals 2. Yes Answers for why or why not will vary

Use the multiplication table to solve.

## 1.) <br> $\begin{array}{r}3 \\ \times \quad 8 \\ \hline\end{array}$

2.)
$\begin{array}{r}4 \\ \times 7 \\ \hline\end{array}$
3.) $\begin{array}{r}6 \\ \times \quad 5 \\ \hline\end{array}$

Use counters to solve the division problem. Draw dots in the strip diagram to represent the counters.
4.) 12 divided equally into 2 groups equals $\qquad$ .

| 12 |  |
| :--- | :--- |
| $?$ |  |

5.) 9 divided equally into 3 groups equals $\qquad$ .

6.) 10 divided equally into 5 groups equals $\qquad$ .
$\square$

## Module MDR Lesson 11 Independent Practice

Choose the most reasonable answer.
7.) Carlos has 11 stickers. He wants to give his 2 younger brothers the same amount. How many stickers should his brothers each receive?
A 22 stickers each
B 13 stickers each
C 9 stickers each
D 5 stickers each

Use the multiplication table to solve.
1.)
$\begin{array}{r}3 \\ \times \quad 8 \\ \hline 24\end{array}$
2.)
$\begin{array}{r}4 \\ \times 7 \\ \hline 28\end{array}$
3.)
$\begin{array}{r}6 \\ \times \quad 5 \\ \hline 30\end{array}$

Use counters to solve the division problem. Draw dots in the strip diagram to represent the counters.
4.) 12 divided equally into 2 groups equals $\qquad$ 6 .

5.) 9 divided equally into 3 groups equals $\qquad$ .

6.) 10 divided equally into 5 groups equals 2



Choose the most reasonable answer.
7.) Carlos has 11 stickers. He wants to give his 2 younger brothers the same amount. How many stickers should his brothers each receive?
A 22 stickers each
B 13 stickers each
C 9 stickers each
D 5 stickers each

Ms. Louis has 20 students in her class. She is planning a group project for her class and wants each group to have 4 students. How many groups will she be able to break her class into? Will there be any students leftover?

Divide 20 counters into groups of 1 .
1.) How many groups do you have? $\qquad$

Divide 20 counters into groups of 2 .
2.) How many groups do you have? $\qquad$
3.) How many are leftover? $\qquad$

Use \#2 and \#3 to complete the division sentence.
4.) $\qquad$ divided into equal groups of 2 equals $\qquad$ with leftover.

Divide 20 counters into groups of 4.
5.) Draw a picture using the strip diagram above of the equal group.
6.) How many groups do you have? $\qquad$
7.) How many are leftover? $\qquad$

Use \#5 to complete the division sentence.
8.) $\qquad$ divided into equal groups of $\qquad$ equals $\qquad$ with _ leftover.

Answer the following questions using the information you gathered on the first practice sheet.
1.) Division is related to repeated $\qquad$ as multiplication is related to repeated $\qquad$ .
2.) Explain how division and subtration are related.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
3.) What happens to the number of groups when more counters are in each group? $\qquad$
$\qquad$
4.) How does the amount being divided compare to the answer, the number of groups made?
$\qquad$
5.) In your own words, explain division or describe an example of division.
$\qquad$
$\qquad$
$\qquad$

Ms. Louis has 20 students in her class. She is planning a group project for her class and wants each group to have 4 students. How many groups will she be able to break her class into? Will there be any students leftover?

Divide 20 counters into groups of 1 .
1.) How many groups do you have?

20

Divide 20 counters into groups of 2 .
2.) How many groups do you have? 10
3.) How many are leftover? $\qquad$

Use \#2 and \#3 to complete the division sentence.
4.) 20 divided into equal groups of 2 equals
 leftover.


Divide 20 counters into groups of 4 .
5.) Draw a picture using the strip diagram above of the equal group.
6.) How many groups do you have? $\qquad$ 5
7.) How many are leftover? $\qquad$

Use \#5 to complete the division sentence.
8.) $\frac{20}{0}$ divided into equal groups of $\frac{4}{0}$ equals eqtover.

Answer the following questions using the information you gathered from Practice Sheet \#1.
1.) Division is related to repeated subtraction as multiplication is related to repeated addition
2.) Explain how division and subtration are related.

Answers will vary, but should include the subtraction of equal sized groups
3.) What happens to the number of groups when more counters are in each group? Does not change the number of groups
4.) How does the amount being divided compare to the answer, the number of groups made? the amount being divided is more than the number of groups
5.) In your own words, explain division or describe an example of division.

## Answers will vary

$\qquad$

Module MDR
Lesson 12
Independent Practice
Use the strip diagram to complete the division sentence.

$\qquad$ divided equally into 3 groups equals $\qquad$ .
2.) 6 students equally shared 13 pencils.
$\qquad$ shared equally with $\qquad$ students equals $\qquad$ per student with $\qquad$ leftover.
3.) When you divide the whole into more groups, what happens to the amount in each group?

A The amount in each group is less.
B The amount in each group is more.
C The amount in each group doesn' $\dagger$ change.
D The amount in each group only changes the whole.

Divide 10 counters into groups of 3 .
4.) Draw a picture of the equal group.
$\square$
5.) How many groups do you have? $\qquad$
6.) How many are leftover? $\qquad$
7.) Division is related to repeated $\qquad$ .

Module MDR
Lesson 12
Independent Practice Key
Use the strip diagram to complete the division sentence.


## 15

 divided equally into 3 groups equals $\qquad$ .2.) 6 students equally shared 13 pencils.
 student with 1 leftover.
3.) When you divide the whole into more groups, what happens to the amount in each group?
(A) The amount in each group is less.

B The amount in each group is more.
C The amount in each group doesn' $\dagger$ change.
D The amount in each group only changes the whole.

Divide 10 counters into groups of 3 .
4.) Draw a picture of the equal group.

| 10 |  |  |
| :---: | :---: | :---: |
| 3 | 3 | 3 |

5.) How many groups do you have? 3
6.) How many are leftover? $\qquad$
7.) Division is related to repeated $\qquad$
subtraction

## Module MDR <br> Lesson 13 <br> Engaged Practice

$4 \times 9$
$\square$
part = $\qquad$

Repeated addition equation: $\qquad$

Multiplication equation: $\qquad$
$4 \times 9$

| 36 |  |  |  |
| :---: | :---: | :---: | :---: |
| 9 | 9 | 9 | 9 |

$$
\text { part = } \quad 9 \quad \text { or 4; answer will vary depending on the }
$$

Repeated addition equation: $\frac{9+9+9+9=36}{\text { Or } 4+4+4+4+4+4+4+4+4=36}$
Multiplication equation:

$$
\frac{4 \times 9=36}{\text { or } 9 \times 4=36}
$$










Use the strip diagram and repeated subtraction to solve the division problem.


Read and solve.
1.) Jalen has 56 baseball cards. His dad bought him plastic pages to keep his cards in so the cards would not get bent. Each page holds 8 cards. How many pages will Jalen need in order to protect all of his baseball cards?


Use the strip diagram to complete the equal-groups division sentence.
2.)

$\qquad$ divided into groups of $\qquad$ equals $\qquad$ equal groups.

Use the strip diagram to complete the equal-groups division sentence.

$\qquad$ divided into groups of $\qquad$ equals $\qquad$ equal groups.

Use the strip diagram and repeated subtraction to solve the division problem.


## Answers will vary depending on problem given to students

: Workspace
$:$

Read and solve.
1.) Jalen has 56 baseball cards. His dad bought him plastic pages to keep his cards in so the cards would not get bent. Each page holds 8 cards. How many pages will Jalen need in order to protect all of his baseball cards?


Use the strip diagram to complete the equal-groups division sentence.
2.)


42 divided into groups of 6 equals 7 equal groups.


Use the strip diagram to complete the equal-groups division sentence.


64 divided into groups of 8 equals 8 equal groups.

Read each problem and solve.
1.) Divide 36 into groups of 8 .
$\qquad$ divided into equal groups of $\qquad$ equals $\qquad$ with
$\qquad$ leftover.

Draw dots to solve the division problem.
$\square$
12 divided equally into 4 groups equals $\qquad$ .

Use the strip diagram and repeated subtraction to solve.
3.) Jarren had 36 bottles in his bottle collection. He decided to put them in groups of 4 . How many groups of 4 was Jarren able to make?

$\qquad$ groups
4.) 25 divided into groups of 5 equals how many groups?
$\square$

Use the strip diagram to complete the sentence.
5.)

$\qquad$ divided into groups of 3 equals $\qquad$ equal groups.
6.)

divided into groups of 7 equals $\qquad$ equal

Choose the correct strip diagram.
7.) 45 divided into groups of 9 equals 5 equal groups.
A

| 45 |  |  |
| :--- | :--- | :--- |
| 15 | 15 | 15 |

C

| 45 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 9 | 9 | 9 | 9 | 9 |  |

B

| 45 |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |

D

| 45 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 5 | 5 | 5 | 5 | 5 |  |

## Module MDR Lesson 13 Independent Practice Key

Read each problem and solve.
1.) Divide 36 into groups of 8 .

36divided into equal groups of $\qquad$ equals $\qquad$ with
4 leftover.

Draw dots to solve the division problem.

| 12 |  |  |  |
| :---: | :---: | :---: | :---: |
| - - | - - | - - | - - |

12 divided equally into 4 groups equals $\qquad$ .

Use the strip diagram and repeated subtraction to solve.
3.) Jarren had 36 bottles in his bottle collection. He decided to put them in groups of 4 . How many groups of 4 was Jarren able to make?


## Module MDR Lesson 13 Independent Practice Key

4.) 25 divided into groups of 5 equals how many groups?


Use the strip diagram to complete the sentence.
5.)

| 24 |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |

24 divided into groups of 3 equals 8 equal groups.
6.)


63 divided into groups of 7 equals $\qquad$ equal groups.


Choose the correct strip diagram.
7.) 45 divided into groups of 9 equals 5 equal groups.

A | 45 |  |  |
| :---: | :---: | :---: |
| 15 | 15 | 15 |

(C)

| 45 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 9 | 9 | 9 | 9 | 9 |  |

B

| 45 |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |

D

| 45 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 5 | 5 | 5 | 5 | 5 |  |


groups of $\qquad$ equals $\qquad$

Write the multiplication equation for the array.

$$
\varlimsup_{\text {Factor }} \times \overline{\text { Factor }}^{=}
$$

Write the division equation from the multiplication equation.

$$
\varlimsup_{\text {Dividend }} \div \varlimsup_{\text {Divisor }}=
$$


groups of
 equals $\qquad$ 36

Write the multiplication equation for the array.


Factor Factor Product

Write the division equation from the multiplication equation.

$$
\frac{36}{\text { Dividend }} \div \frac{6}{\text { Divisor }}=\frac{6}{\text { Quotient }}
$$




Multiplication equations:



Use the strip diagram to complete the sentence.
1.)

$\qquad$ divided into groups of 9 equals $\qquad$ equal groups.

Use the strip diagram and repeated subtraction solve.
2.) Divide 56 into groups of 7 .

$\qquad$ groups


Write the 4 equations for the number family.

3.)
4.) $\qquad$
5.) $\qquad$
6.) $\qquad$

Complete the number family triangle from the given number sentences.

$$
5 \times 7=35
$$

$$
35 \div 5=7
$$



Write another multiplication equation for this fact family.
8.) $\qquad$ $\times$ $\qquad$
$\qquad$

Write another division equation for this fact family.
9.) $\qquad$ $\div$ $\qquad$
$\qquad$

Use the strip diagram to complete the sentence.
1.)

| 72 |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |

72 divided into groups of 9 equals 8 equal groups.

Use the strip diagram and repeated subtraction solve.
2.) Divide 56 into groups of 7 .

| 56 |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |

8 groups

## Module MDR Lesson 14 Independent Practice Key

Write the 4 equations for the number family.

3.)
$6 \times 8=48$
4.) $\qquad$
5.) $\qquad$
6.)
$48 \div 8=6$

Complete the number family triangle from the given number sentences.

$$
5 \times 7=35
$$

$$
35 \div 5=7
$$



Write another multiplication equation for this fact family.
8.) $7 \times \underline{5}=3$

Write another division equation for this fact family.
9.) $35 \div 7=$

There are 12 desks and 1 pencil on each desk. How many pencils are there?

## ___ equal groups of <br> $\qquad$



There are $\qquad$ pencils.

Write your own problem using the Identity Property.

Write the corresponding multiplication equation.

Write 2 division equations in this number family.

There are 12 desks and 1 pencil on each desk. How many pencils are there?

12 equal groups of $\quad 1$
$12 \times 1$


There are _12_pencils.

Write your own problem using the Identity Property.

## answers will vary

Write the corresponding multiplication equation.

Write 2 division equations in this number family.
1.) Draw an equal-groups model using dots or circles to solve $9 \times 0$.
$\qquad$ equal groups of $\qquad$

Write the repeated addition equation.

Solve $9 \times 10=$ $\qquad$
2.) Destiny has 15 folders with 1 worksheet in each folder. How many worksheets are there?

Write the multiplication sentence. $\qquad$

Use the number line to solve.


Destiny has $\qquad$ worksheets.

Multiplication Table

| $X$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |  |  |  |

1.) Draw an equal-groups model using dots or circles to solve $9 \times 0$.

$\underline{9}$ equal groups of $\qquad$

Write the repeated addition equation.

$$
0+0+0+0+0+0+0+0+0+0
$$

Solve $9 \times 0=$ $\qquad$
2.) Destiny has 15 folders with 1 worksheet in each folder. How many worksheets are there?

Write the multiplication sentence. $15 \times 1$

Use the number line to solve.
$\times 1$


Destiny has $\qquad$ worksheets.

Multiplication Table

| $X$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |  |  |  |  |

Write the number family equations using 32,8 , and 4 .
1.) $\qquad$ $\times$ $\qquad$ $=$
2.) $\qquad$ $\times$ $\qquad$
$\qquad$
3.) $\qquad$ $\div ـ$ $\qquad$ 4.) $\qquad$ $\div$ $\qquad$ $=$
5.) Which array best represents $6 \times 6$ ?

D
$\begin{array}{ll}\bullet & \bullet \\ \bullet & \bullet \\ \bullet & \bullet \\ \bullet & \bullet \\ \bullet & \bullet\end{array}$
6.) Which equation does not belong to the number family?
A $7 \times 8=56$
B $7 \div 56=7$
C $56 \div 8=7$
D $8 \times 7=56$
7.) $\qquad$ $\times 9=0$
8.) $\qquad$ $=10 \times 1$
9.) Write your own problem using the Zero Property of Multiplication.
10.) Write the corresponding multiplication equation from problem 9.
11.) Write your own problem using the Identity Property of Multiplication.
12.) Write 2 division equations from the number family in number 11 .

Write the number family equations using 32,8 , and 4 .
1.) $8 \times \underline{4}=32$
2.) $4 \times 8=32$
3.)

4.) $32 \div 8=4$
5.) Which array best represents $6 \times 6$ ?

D
$\begin{array}{ll}\bullet & \bullet \\ \bullet & \bullet \\ \bullet & \bullet \\ \bullet & \bullet \\ \bullet & \bullet\end{array}$
6.) Which equation does not belong to the number family?
A $7 \times 8=56$
(B) $7 \div 56=7$
C $56 \div 8=7$
D $8 \times 7=56$
7.) $\underline{O} \times 9=0$
8.) $10=10 \times 1$
9.) Write your own problem using the Zero Property of Multiplication.
answers will vary
10.) Write the corresponding multiplication equation from problem 9.
answers will vary
11.) Write your own problem using the Identity Property of Multiplication. answers will vary
12.) Write 2 division equations from the number family in number 11. answers will vary


Write the multiplication equation for the area model. $]^{\times}=$

The area is ___ square units.

Write the corresponding multiplication equation for the area model.

$$
]_{1} \times \ldots
$$

$5 \times 3=$ $\qquad$
$8 \times 5=$ $\qquad$
$10 \times 2=$ $\qquad$


Write the corresponding multiplication equation.

$$
\ldots \ldots
$$

## Write the 2 division equations.

$10 \times 3=$ $\qquad$
$7 \times 10=$ $\qquad$


Write the multiplication equation for the area model.
$\underline{5} \times \underline{7}=35$

The area is 35 square units.

Write the corresponding multiplication equation for the area model.

$$
5 \times 7=35
$$

```
\[
5 \times 3=15
\]
```

$$
8 \times 5=40
$$

## $10 \times 2=\underline{20}$



Write the corresponding multiplication equation.

$$
2 \times 10=20
$$

Write the 2 division equations.

$$
20 \div 10=2
$$

$$
20 \div 2=10
$$

$10 \times 3=30$

$$
7 \times 10=\underline{70}
$$

1.) Draw an array that represents $11 \times 2$ and solve.
2.) Look at the area model below.


Write the multiplication equation to find the area of the shaded model and solve. $\qquad$
3.)


Write the multiplication equation to find the total amount of money and solve. $\qquad$

1．）Draw an array that represents $11 \times 2$ and solve．

2．）Look at the area model below．


Write the multiplication equation to find the area of the shaded model and solve． $\qquad$

3．）


Write the multiplication equation to find the total amount of money and
solve．

Fill in the blank for each problem.
1.) $\_=12 \times 1$
2.) $\ldots$ _ $\times 48=0$
3.) $0 \times 25=$ $\qquad$
5.) Write the multiplication and division equations using 70,10 , and 7.
$\qquad$
$\qquad$
$\qquad$
6.) Look at the shaded area model below.


Which expression can be used to find the area of the shaded model?
A $4 \times 6$
B $5 \times 7$
C $5 \times 5$
D $4 \times 5$
7.) Anna has 8 ten-dollar bills. How much money does Anna have? Write a multiplication equation and solve.

Anna has \$ $\qquad$ .
8.) Which of the following makes the number sentence true?

$$
2 \times \square=24
$$

A 12
B 11
C 10
D 13
9.) $\ldots \quad \times 5=50$
10.) $45=9 x$ $\qquad$
11.) $9 \times \ldots=18$

Module MDR
Lesson 16
Independent Practice Key
Fill in the blank for each problem.
1.) $\underline{\underline{12}=12 \times 1}$
2.) $\underline{O} \times 48=0$
3.) $0 \times 25=0$
4.) $\underline{99}=99 \times 1$
5.) Write the multiplication and division equations using 70,10 , and 7.

$$
10 \times 7=70
$$

$7 \times 10=70$

$$
70 \div 10=7
$$

$$
70 \div 7=10
$$

6.) Look at the shaded area model below.


Which expression can be used to find the area of the shaded model?
A $4 \times 6$
B $5 \times 7$
C $5 \times 5$
(D) $4 \times 5$
7.) Anna has 8 ten-dollar bills. How much money does Anna have? Write a multiplication equation and solve.

$$
8 \times 10=80 \text { or } 10 \times 8=80
$$

Anna has \$ 80 .

## Module MDR <br> Lesson 16 Independent Practice Key

8.) Which of the following makes the number sentence true?

$$
2 \times \square=24
$$

(A) 12

B 11
C 10
D 13
9.) $10 \times 5=50$
10.) $45=9 \times 5$
11.) $9 \times \underline{2}=18$


## Module MDR <br> Lesson 17 <br> Modeled Practice \#2

## $9 \times 6$

Step 1.) Think of 9 as $10-1$.
Step 2.) Multiply 10 and the
Step 2.) Multiply 10 and the
other factor.
Step 3.) Subtract the other
Step 2.) Multiply 10 and the
other factor.
Step 3.) Subtract the other factor.

$$
ـ^{\times}=
$$ so $9 \times 6=$ $\qquad$



$$
\begin{aligned}
\times & = \\
\times \ldots & = \\
\ldots & = \\
\div & \div \\
\div & =
\end{aligned}
$$

## Module MDR <br> Lesson 17 <br> Modeled Practice \#1 Key

$$
\begin{aligned}
& 9 \times 4 \\
& (\underline{10}-\underline{1}) \times \underline{4} \\
& (10 \times 4)-(1 \times 4) \\
& 40-4=36 \\
& \text { so } 9 \times 4=\underline{36} \\
& 4 \times \underline{9}=36 \\
& 36 \div 9 \\
& 36 \div 4=9
\end{aligned}
$$

## Module MDR Lesson 17 Modeled Practice \#2 Key

## $9 \times 6$

Step 1.) Think of 9 as $10-1$.

$$
10 \times \underline{6}=60
$$

Step 2.) Multiply 10 and the other factor.
Step 3.) Subtract the other factor.

$$
\text { so } 9 \times 6=54
$$



$$
\begin{aligned}
& \frac{6}{9} \times \frac{9}{6}=\frac{54}{54} \\
& 2 \times 6=6 \\
& 54 \div 6=9 \\
& 54 \div 9=6
\end{aligned}
$$

Fill in the blanks.

| Word Bank |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| multiply | step | factor | subtract | $10-1$ |

Make Ten Subtract the Factor Strategy:
Step 1.) Think of 9 as $\qquad$ .

Step 2.) $\qquad$ 10 and the other $\qquad$ .

Step 3.) $\qquad$ the other factor.

Use the Make Ten Subtract the Factor Strategy to solve.
1.)

2.)
$9 \times 9$

$]^{\div} \div$


4.) $8 \times 9$


Solve using the Make Ten Subtract the Factor and 1 other way.
5.) Mrs. King puts her class into teams. Each team has 4 students. There are 9 different teams. How many students are in Mrs. King's class?

Fill in the blanks.

| Word Bank |  |  |  |  |
| :--- | ---: | :---: | :---: | :---: |
| multiply | step | factor | subtract | $10-1$ |

Make Ten Subtract the Factor Strategy:
Step 1.) Think of 9 as $\qquad$ .

Step 2.) ___multi ply_10 and the other_ factor_. Step 3.) subtract the other factor.

Use the Make Ten Subtract the Factor Strategy to solve.
1.)
$7 \times 9$
2.)
$9 \times 9$
$7 \times \underline{10}=70$
$\underline{9} \times 10=\underline{90}$
$\begin{aligned} & -\frac{7}{7} \\ 7 \times 9 & =\frac{63}{63} \\ \frac{9}{63} \div \frac{7}{63} \div \frac{9}{7} & =\frac{7}{9}\end{aligned}$

3.) $9 \times 3$
$\begin{aligned} \frac{10}{2} \times \frac{3}{} & =\frac{30}{3} \\ 9 \times 3 & =\frac{27}{27} \\ \frac{3}{27} \div \frac{9}{27} \div \frac{9}{3} & =\frac{3}{9}\end{aligned}$
4.) $8 \times 9$


$$
8 \times 9=72
$$

$$
\frac{9}{\frac{72}{72} \div \frac{8}{9} \div \frac{72}{8}=\frac{7}{9}}
$$

Solve using the Make Ten Subtract the Factor and 1 other way.
5.) Mrs. King puts her class into teams. Each team has 4 students. There are 9 different teams. How many students are in Mrs. King's class?

$$
\begin{aligned}
& 4 \times 9 \\
& 4 \times 10=40 \\
&-4 \\
& 4 \times 9=36 \\
& 9 \times 4=36 \\
& 36 \div 4=9 \\
& 36 \div 9=4
\end{aligned}
$$

Solve each problem.
1.) $0 \times 4=$ $\qquad$
2.)


4.) $2 \times 6=$ $\qquad$

6.) $54 \div 6=$

8.) $72 \div-=9$
9.) Draw a line to Match the step number of the Make Ten Subtract the factor.

$$
\begin{array}{ll}
\text { Think of } 9 \text { as } 10-1 . & \text { Step } 3 \\
\text { Multiply } 10 \text { and the } \\
\text { other factor. } \\
\text { Subtract the other } & \text { Step } 1 \\
\text { factor. }
\end{array}
$$

10.) Kaylee wrote that $9 \times 9=90$. What step did Kaylee forget to do in solving $9 \times 9$ ?

A None, that is the correct answer.
B She forgot to subtract the factor.
C She didn't think of 9 as 10-1.
D She didn'† multiply 9 to 10 .


Solve each problem.
1.) $0 \times 4=\underline{0}$
2.) $\begin{array}{r}8 \\ \times \quad 5 \\ \hline 40\end{array}$
3.) 5
$\begin{array}{r}\times 6 \\ \hline 30\end{array}$
4.) $2 \times 6=\underline{12}$
5.) $9 \times 6$

$9 \times 6=54$
6.) $54 \div 6=\underline{9}$
8.) $72 \div 9=8$
9.) Draw a line to Match the step number of the Make Ten Subtract the factor.


## Module MDR Lesson 17 Independent Practice Key

10.) Kaylee wrote that $9 \times 9=90$. What step did Kaylee forget to do in solving $9 \times 9$ ?

A None, that is the correct answer.
B She forgot to subtract the factor.
C She didn't think of 9 as 10-1.
D She didn'† multiply 9 to 10.


Number family: $\qquad$ , $\underline{\square}$

$$
\begin{aligned}
\times & = \\
\square & = \\
\square & =
\end{aligned}
$$

$$
\begin{gathered}
6 \times 6 \\
(\square) \times(\square) \\
=\square=\square \\
=6 \times \square
\end{gathered}
$$

Number family:

$$
]^{\div} \quad=
$$



Number family: $48, ~ 8, ~ 6$

$$
\begin{aligned}
& 8 \times 6=48 \\
& 48 \div \frac{6}{48} \div 8=8 \\
& \hline
\end{aligned}
$$

## Module MDR <br> Lesson 18 <br> Modeled Practice \#2 Key

$$
\begin{aligned}
& 6 \times 6 \\
& (1) \times 6)+(5 \times 6) \\
& \underline{6}+\underline{30}=\underline{36} \\
& 36=6 \times 6 \\
& \text { Number family: } 36, \ldots \\
& 36 \div 6=5
\end{aligned}
$$

Step 1.) Break apart 6 into $\qquad$ and $\qquad$
Draw a line to show how to break apart 6


Step 2.) Multiply 1 and 5 by the other factor.

$$
\begin{gathered}
6 \times 3 \\
(1 \times \quad)+(5 \times \ldots)
\end{gathered}
$$

Step 3.) Add the products.

$$
\begin{gathered}
6 \times 3 \\
(1 \times 3)+(5 \times 3) \\
- \\
6 \times 3=
\end{gathered}
$$

Read and solve.
1.) The basketballs were organized on shelves in the gym. Each shelf held 4 balls. There were 6 total shelves. How many basketballs were in the gym?

2.) Jill was excited for vacation. She packed 6 boxes of towels for her family. Each box had 7 towels. How many towels did she pack?

3.) Match the fact with the strategy or property by drawing a line.
$8 \times 0$
$12 \times 10$
$7 \times 9$
$7 \times 2$
$10 \times 8$
$4 \times 5$
$6 \times 3$

Step 1.) Break apart 6 into $\qquad$ and 5

Draw a line to show how to break apart 6


Step 2.) Multiply 1 and 5 by the other factor.

$$
\begin{gathered}
6 \times 3 \\
(1 \times 3)+(5 \times 3)
\end{gathered}
$$

Step 3.) Add the products.

$$
\begin{gathered}
6 \times 3 \\
(1 \times 3)+(5 \times 3) \\
\frac{3}{6 \times 3}+\frac{15}{18}
\end{gathered}
$$



Read and solve.
1.) The basketballs were organized on shelves in the gym. Each shelf held 4 balls. There were 6 total shelves. How many basketballs were in the gym?

(5)

$$
\left.\times \frac{4}{\underline{20})+(\underline{4}} \times \underline{24} \times \underline{4}\right)
$$


2.) Jill was excited for vacation. She packed 6 boxes of towels for her family. Each box had 7 towels. How many towels did she pack?

3.) Match the fact with the strategy or property by drawing a line.


Solve each problem.
1.) $\begin{array}{r}9 \\ \times 9 \\ \hline\end{array}$
2.) $\begin{array}{r}3 \\ \times 10 \\ \hline\end{array}$
3.) $5 \times 6=$ $\qquad$ 4.)
5.) $6 \times 8$

6.) $3 \times 6$

7.) $6 \times 4$

8.) $7 \times 6$

9.) Marcus sold 6 pies at the fundraiser. Each pie costs $\$ 6$. How much money did Marcus make?
A $\$ 30$
B $\$ 32$
C $\$ 12$
D $\$ 36$


Solve each problem.
1.) $\begin{array}{r}9 \\ \times 9 \\ \hline 81\end{array}$
3.) $5 \times 6=\underline{30}$
5.) $6 \times 8$

$$
\begin{gathered}
(\boxed{5} \times 8)+(\boxed{1} \times 8) \\
\frac{40}{48}
\end{gathered}
$$

7.) $6 \times 4$


$$
\frac{20}{24}+\frac{4}{24}
$$

2.) $\begin{array}{r}3 \\ \times 10 \\ \hline 30\end{array}$
4.) $14=2 \times 7$
6.) $3 \times 6$

$\underline{15}+\underline{3}$ 18
8.) $7 \times 6$

$\underline{35}+\underline{7}$ 42
9.) Marcus sold 6 pies at the fundraiser. Each pie costs $\$ 6$. How much money did Marcus make?
A $\$ 30$
B $\$ 32$
C $\$ 12$
(D) $\$ 36$

STOP

## Module MDR



Number family: $\qquad$ , $\qquad$
$\qquad$


Number family: $\qquad$ ,


## Module MDR <br> Lesson 19



$$
\underline{28}=4 \times 7
$$

Number family: $28, \ldots$



Number family: $\underline{56}, \underline{7}, \underline{8}$

$$
56 \div 8=7
$$

## 4s

Step 1.) Double the other factor.

$$
\text { Circle the other factor. } 4 \times 8
$$

Step 2.) Double it again.
Write the doubles fact. $\qquad$

What is the sum?

So $4 \times 8$

## 8 s

Step 1.) Double the other factor.

Circle the other factor.
$8 \times 3$

Write the doubles facts.


Write the doubles
fact.

What is the sum?

So $8 \times 3$

Read each problem and solve.
1.) Matthew has 4 friends and wants to give each friend 3 notebooks. How many notebooks does Matthew need in all?

2.) New art materials come in 8 boxes of 8 brushes. How many brushes will the art class have?

3.)

$4 \times 8=$ $\qquad$
4.) $8 \times 7$


## As

Step 1.) Double the other factor.

$$
\text { Circle the other factor. } 4 \times 8
$$

Step 2.) Double it again.
Write the doubles fact. $\quad 16+\underline{16}$ What is the sum? 32

$$
\text { So } 4 \times 8
$$

32

## Bs

Step 1.) Double the other factor.

Circle the other factor. $8 \times(3)$
Step 2.) Double it again.
$\begin{aligned} & \text { Write the doubles } \\ & \text { facts. }\end{aligned} \longrightarrow+\underline{6}+\underline{6}+\underline{6}$
$\begin{array}{r}\text { Write the doubles } \\ \text { fact. }\end{array} \underline{12}+\underline{12}$
Step 3.) Double it last time.
What is the sum?
24

So $8 \times 3$
24

Read each problem and solve.
1.) Matthew has 4 friends and wants to give each friend 3 notebooks. How many notebooks does Matthew need in all?


$$
\underline{12}=4 \times 3
$$

2.) New art materials come in 8 boxes of 8 brushes. How many brushes will the art class have?

3.)

$$
16+16
$$

$4 \times 8=32$
4.) $8 \times 7$


Solve each problem.
1.)
2.) $9 \times 4=$
3.) $\begin{array}{r}5 \\ \times \quad 2 \\ \hline\end{array}$
9.) Circle the letter that shows Courtney correctly solved $4 \times 8$.

A $4 \times 8=12$
B $8+8=16$ so $4 \times 8=16$
C $16+16=32$ so $4 \times 8=32$
D $4+4+4+4=16$ so $4 \times 8=16$
5.)

4.) $12 \times 1=$ $\qquad$
6.) $7 \times 4=$ $\square$

8.)


## Module MDR Lesson 19 Independent Practice Key

Solve each problem.
1.) $18=6 \times 3$
3.) 5
$\begin{array}{r}5 \\ \times 2 \\ \hline 10\end{array}$
4.) $12 \times 1=\underline{12}$
6.) $7 \times 4=28$

$$
\begin{gathered}
\frac{14}{28}+\frac{14}{28}
\end{gathered}
$$

5.)

$$
24
$$

2.) $9 \times 4=36$
-
8.)

9.) Circle the letter that shows Courtney correctly solved $4 \times 8$.

A $4 \times 8=12$
B $8+8=16$, so $4 \times 8=16$
C) $16+16=32$, so $4 \times 8=32$

D $4+4+4+4=16$, so $4 \times 8=16$

# Module MDR <br> Lesson 20 



Number family: $\qquad$ $\underline{\longrightarrow}$



Number family: $\qquad$ - $\qquad$


## $7 \times 3$



$$
\underline{21}=7 \times 3
$$

Number family: $21, \underline{3}, \underline{7}$

$$
\begin{aligned}
& 21 \div 3 \\
& 21 \div 7=3
\end{aligned}
$$



Number family: $\underline{49}, \underline{7}, \underline{7}$

$$
\underline{49} \div \underline{7}=\underline{7}
$$

## 7s <br> $$
7 \times 4
$$

Step 1.) Break apart 7 into 5 and 2.


Step 2.) Multiply 5 and 2 by the other factor.

$$
]^{+}
$$

Step 3.) Add the products.

$$
\ldots=7 \times 4
$$



Read each problem and solve.
1.) Tomas has 7 jars. Each jar contains 7 insects. How many insects are there?

2.) Sofia earns $\$ 8$ a day for pet sitting. She worked a total of 7 days. How much money did Sophia earn?

\$ $\qquad$

## 7s <br> $$
7 \times 4
$$

Step 1.) Break apart 7 into 5 and 2.

$$
(5) \times 4)+(5) \times 4)
$$

Step 2.) Multiply 5 and 2 by the other factor.

$$
\underline{20}+\underline{8}
$$

Step 3.) Add the products.

$$
\underline{28}=7 \times 4
$$

$$
\begin{gathered}
6 \times 7 \\
\left(\sqrt[5]{6} \times \frac{6}{30}+\left(\sqrt{2} \times \frac{6}{32}\right)\right. \\
\frac{42}{3}=6 \times 7
\end{gathered}
$$

Read each problem and solve.
1.) Tomas has 7 jars. Each jar contains 7 insects. How many insects are there?

$$
\begin{gathered}
\left.7 \times \frac{7}{7} \times \frac{7}{5}\right)+\left(\sqrt{2} \times \sqrt[7]{35}+\frac{14}{49}\right. \text { insects }
\end{gathered}
$$

2.) Sofia earns $\$ 8$ a day for pet sitting. She worked a total of 7 days. How much money did Sophia earn?

$$
\begin{gathered}
\frac{8}{2} \times 7 \\
\left(\sqrt{5} \times \frac{8}{40}+(\sqrt{2} \times \sqrt{8})\right. \\
\$ \underline{56}
\end{gathered}
$$

1.)
2.)
3.) $\begin{array}{r}9 \\ \times \quad 6 \\ \hline\end{array}$
4.) $8 \times 7=\square$
5.) $4 \times 8=\square$

$4 \times 8=$ $\qquad$
6.) $3 \times 7$

7.) Joshua sold 7 of his baseball cards for $\$ 4$ each. How much money did Joshua get for his baseball cards?
A \$35
B \$11
C $\$ 28$
D $\$ 21$
8.) $4 \times 7$


$$
\begin{aligned}
& { }^{+} \\
& =4 \times 7
\end{aligned}
$$

9.) $7 \times 7$


$$
\begin{aligned}
& ـ^{+} \\
& =7 \times 7
\end{aligned}
$$

1.) $\underline{40}=10 \times 4$
2.)
$\begin{array}{r}6 \\ \times 6 \\ \hline 36\end{array}$
3.) $\begin{array}{r}9 \\ \times \quad 6 \\ \hline 54\end{array}$
4.) $8 \times 7=56$
5.) $4 \times 8=32$

$16+16$
$4 \times 8=\underline{32}$

$$
8 \times 7=56
$$

6.) $3 \times 7$

$$
\begin{gathered}
\left(\sqrt[5]{5} \times \frac{3}{15}+\left(\sqrt{2} \times \frac{3}{21}=3 \times 7\right.\right.
\end{gathered}
$$

7.) Joshua sold 7 of his baseball cards for $\$ 4$ each. How much money did Joshua get for his baseball cards?
A $\$ 35$
B \$11
(C) $\$ 28$
D \$21
8.) $4 \times 7$

$$
\begin{gathered}
\left(\sqrt[5]{4} \times \frac{4}{20}+\left(\sqrt{2}+\frac{8}{28}=4 \times 7\right.\right.
\end{gathered}
$$

9.) $7 \times 7$

$$
\begin{gathered}
\left(\sqrt[5]{5} \times \frac{7}{35}\right)+\left(\sqrt{2} \times \frac{74}{\frac{49}{4}}=7 \times 7\right.
\end{gathered}
$$

