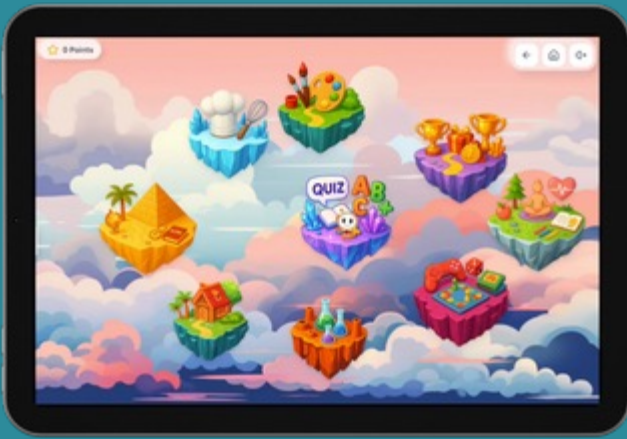


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Tremendous Twos - Year 3

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TREMENDOUS

TWOS FACT FAMILIES

TWO TIMES	TURNAROUND	DIVIDE BY 2	RELATED DIVISION
$2 \times 1 = 2$	$1 \times 2 = 2$	$2 \div 2 = 1$	$2 \div 1 = 2$
$2 \times 2 = 4$	$2 \times 2 = 4$	$4 \div 2 = 2$	$4 \div 2 = 2$
$2 \times 3 = 6$	$3 \times 2 = 6$	$6 \div 2 = 3$	$6 \div 3 = 2$
$2 \times 4 = 8$	$4 \times 2 = 8$	$8 \div 2 = 4$	$8 \div 4 = 2$
$2 \times 5 = 10$	$5 \times 2 = 10$	$10 \div 2 = 5$	$10 \div 5 = 2$
$2 \times 6 = 12$	$6 \times 2 = 12$	$12 \div 2 = 6$	$12 \div 6 = 2$
$2 \times 7 = 14$	$7 \times 2 = 14$	$14 \div 2 = 7$	$14 \div 7 = 2$
$2 \times 8 = 16$	$8 \times 2 = 16$	$16 \div 2 = 8$	$16 \div 8 = 2$
$2 \times 9 = 18$	$9 \times 2 = 18$	$18 \div 2 = 9$	$18 \div 9 = 2$
$2 \times 10 = 20$	$10 \times 2 = 20$	$20 \div 2 = 10$	$20 \div 10 = 2$

STRATEGIES FOR THE TWOS

1. SKIP COUNT BY 2

0, 2, 4, 6, 8, 10, 12



Add 2 each time.

2. DOUBLE

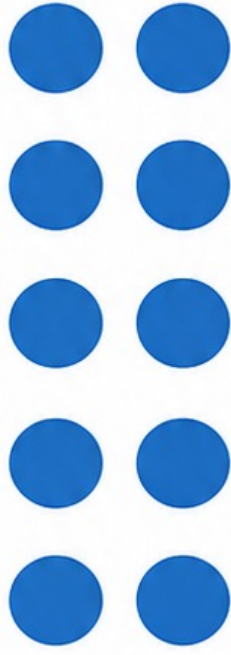
$$2 \times 7 = 14$$

$$7 + 7 = 14$$

3. REPEATED ADDITION

$$2 \times 4 = 2 + 2 + 2 + 2 = 8$$

4. ARRAYS



$$2 \times 5 = 10$$

5. HALVE FOR DIVISION

$$16 \div 2 = 8$$

Half of 16 is 8.

TWOS FACT FLIPBOOK - MULTIPLICATION

1 $2 \times 1 = \underline{\quad}$

2

6 $2 \times 6 = \underline{\quad}$

12

2 $2 \times 2 = \underline{\quad}$

4

7 $2 \times 7 = \underline{\quad}$

14

3 $2 \times 3 = \underline{\quad}$

6

8 $2 \times 8 = \underline{\quad}$

16

4 $2 \times 4 = \underline{\quad}$

8

9 $2 \times 9 = \underline{\quad}$

18

5 $2 \times 5 = \underline{\quad}$

10

10 $2 \times 10 = \underline{\quad}$

20

--- DASHED LINE = FOLD

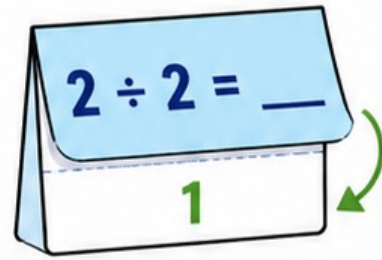
— SOLID LINE = CUT

÷ TWOS FACT FLIPBOOK - DIVISION =



HOW TO MAKE YOUR FLIPBOOK:

- 1 Cut along the solid outer and between the two columns.
- 2 Fold each flap along the dashed line.
- 3 Lift the flap to see the answer!



1 $2 \div 2 = \underline{\quad}$

1

2 $4 \div 2 = \underline{\quad}$

2

3 $6 \div 2 = \underline{\quad}$

3

4 $8 \div 2 = \underline{\quad}$

4

5 $10 \div 2 = \underline{\quad}$

5

6 $12 \div 2 = \underline{\quad}$

6

7 $14 \div 2 = \underline{\quad}$

7

8 $16 \div 2 = \underline{\quad}$

8

9 $18 \div 2 = \underline{\quad}$

9

10 $20 \div 2 = \underline{\quad}$

10

----- DASHED LINE = FOLD

————— SOLID LINE = CUT

SORT THE TWOS STRATEGIES

Cut out the cards and match each fact to a strategy that helps you solve it.

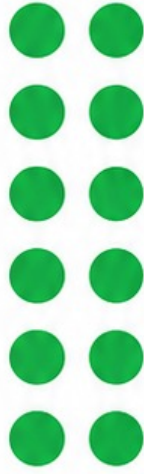
SKIP COUNTING



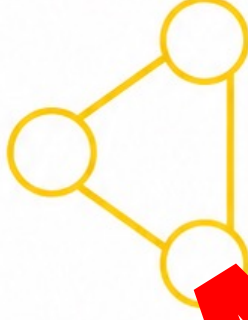
DOUBLE



ARRAY



FACT FAMILY



STRATEGY SORT CARDS

Count
0, 2, 4,
6, —

Count
6, 8, 10,
—

Start at 10.
Add 2
twice.

What
comes after
14 when
counting
by 2?

Double 3

Double 5

Double 7

Double 9

Show
2 rows
of 4

Show
6 rows
of 2

Show
2 columns
of 5

Show
8 groups
of 2

2×6
and
 $12 \div 2$

2×9
and
 $18 \div 9$

7×2
and
 $14 \div 7$

5×2
and
 $10 \div 2$



ROLL, DOUBLE AND HALVE

2-4 players. Roll a die and move. Solve the space and explain your strategy. First to FINISH wins.



ROLL, DOUBLE AND HALVE - CHALLENGE CARDS

Solve 2×6 .

Solve 9×2 .

Solve $16 \div 2$.

Solve $18 \div 9$.

Double 7.

Half of 10.

There are 2 shoes in each pair. How many shoes in 6 pairs?

Share 14 counters equally between 2 children.

Two teams have 8 players each. How many players?

Make 5 equal groups of 2.

Which fact proves $12 \div 2 = 6$?

Write the fact family for 2, 8 and 16.

Explain how doubling helps with 2×9 .

Show 7×2 as an array.

Count by 2 from 4 to 16.

Find the missing number:
 $2 \times \underline{\quad} = 14$.

True or false:
 $10 \div 2 = 4$.
Explain.

Create a twos fact with answer 20.

SKIP, DOUBLE AND MULTIPLY

Name: _____

A. Skip count by 2

0		4		8		12		16		20		24
---	--	---	--	---	--	----	--	----	--	----	--	----

B. Complete the doubles

$1 + 1 = \square$

$4 + 4 = \square$

$2 + 2 = \square$

$5 + 5 = \square$

$3 + 3 = \square$

$6 + 6 = \square$

C. Multiply by 2

$2 \times 1 = 2$

$2 \times 2 = \square$

$2 \times 3 = \square$

$2 \times 6 = \square$

$2 \times 4 = \square$

$2 \times 7 = \square$

$2 \times 5 = \square$

SKIP, DOUBLE AND MULTIPLY

Name: ANSWERS

A. Skip count by 2

0	2	4	6	8	10	12	14	16	18	20	22	24
---	---	---	---	---	----	----	----	----	----	----	----	----

B. Complete the doubles

$1 + 1 = \boxed{2}$

$4 + 4 = \boxed{8}$

$2 + 2 = \boxed{4}$

$5 + 5 = \boxed{10}$

$3 + 3 = \boxed{6}$

$6 + 6 = \boxed{12}$

C. Multiply by 2

$2 \times 1 = 2$

$2 \times 2 = \boxed{4}$

$2 \times 3 = \boxed{6}$

$2 \times 6 = \boxed{12}$

$2 \times 4 = \boxed{8}$

$2 \times 7 = \boxed{14}$

$2 \times 5 = \boxed{10}$

SKIP, DOUBLE AND MULTIPLY – CHALLENGE

Name: _____

A. Find the missing number

1. $2 \times \boxed{} = 8$

2. $\boxed{} \times 2 = 12$

3. $2 \times \boxed{} = 18$

4. $\boxed{} \times 2 = 20$

5. $14 \div 2 = \boxed{}$

6. $16 \div \boxed{} = 8$

B. Compare and explain

1. Which is greater: 2×7 or 2×5 ? How do you know?

2. True or false: $2 \times 8 = 8 \times 2$. Explain.

3. How are 2×6 and 2×7 related?

4. Mia says $18 \div 2 = 8$. Explain her mistake.

C. Two strategies

Show two different ways to solve 2×9 .

Strategy 1

Strategy 2

SKIP, DOUBLE AND MULTIPLY – CHALLENGE

Name: **ANSWERS**

A. Find the missing number

1. $2 \times \boxed{4} = 8$

2. $\boxed{6} \times 2 = 12$

3. $2 \times \boxed{9} = 18$

4. $\boxed{10} \times 2 = 20$

5. $14 \div 2 = \boxed{7}$

6. $16 \div \boxed{2} = 8$

B. Compare and explain

1. Which is greater: 2×7 or 2×5 ? How do you know?

2×7 is greater: $14 > 10$.

2. True or false: $2 \times 8 = 8 \times 2$. Explain.

True. Both facts equal 16.

3. How are 2×6 and 2×7 related?

2×7 is 2 more than 2×6 .

4. Mia says $18 \div 2 = 8$. Explain her mistake.

$18 \div 2 = 9$ because $2 \times 9 = 18$.

C. Two strategies

Show two different ways to solve 2×9 .

Strategy 1

Double 9: $9 + 9 = 18$.

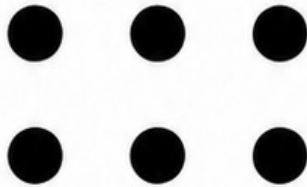
Strategy 2

Skip count nine twos to 18.

Name: _____

ARRAYS AND EQUAL GROUPS

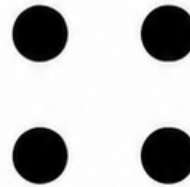
1.



Repeated addition: $3 + 3 = 6$

Multiplication: $2 \times 3 = 6$

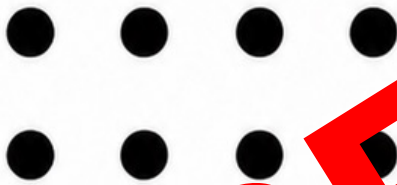
2.



Repeated addition: _____

Multiplication: _____

3.



Repeated addition: _____

Multiplication: _____

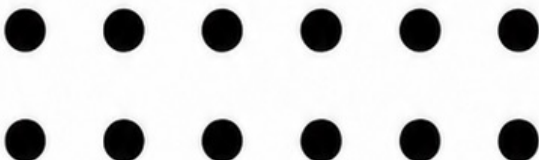
4.



Repeated addition: _____

Multiplication: _____

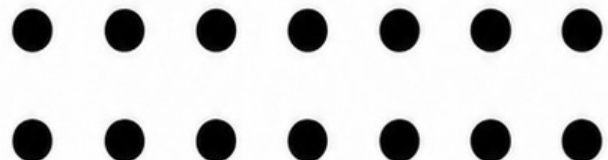
5.



Repeated addition: _____

Multiplication: _____

6.



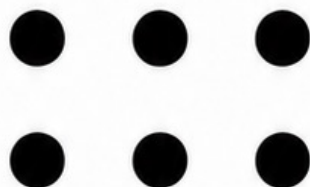
Repeated addition: _____

Multiplication: _____

Name: ANSWERS

ARRAYS AND EQUAL GROUPS

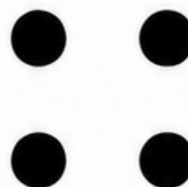
1.



Repeated addition: $3 + 3 = 6$

Multiplication: $2 \times 3 = 6$

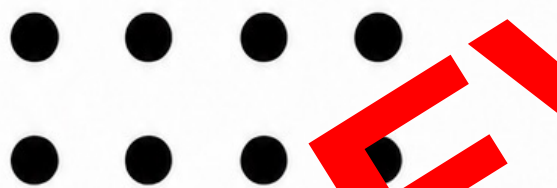
2.



Repeated addition: $2 + 2 = 4$

Multiplication: $2 \times 2 = 4$

3.



Repeated addition: $4 + 4 = 8$

Multiplication: $2 \times 4 = 8$

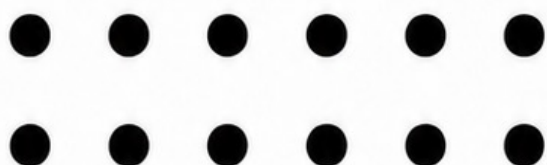
4.



Repeated addition: $2 + 2 + 2 + 2 + 2 = 10$

Multiplication: $5 \times 2 = 10$

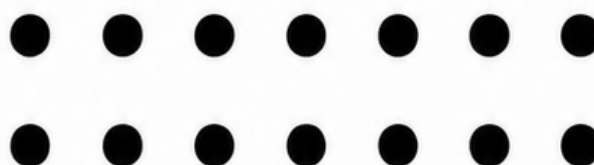
5.



Repeated addition: $6 + 6 = 12$

Multiplication: $2 \times 6 = 12$

6.



Repeated addition: $7 + 7 = 14$

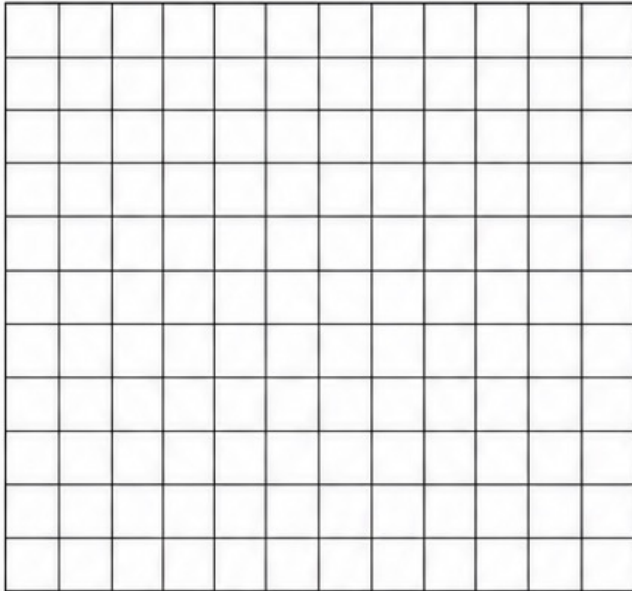
Multiplication: $2 \times 7 = 14$

BUILD AND EXPLAIN ARRAYS

Name: _____

A. 2×4

Draw the array.



B. 6×2

Draw the array.



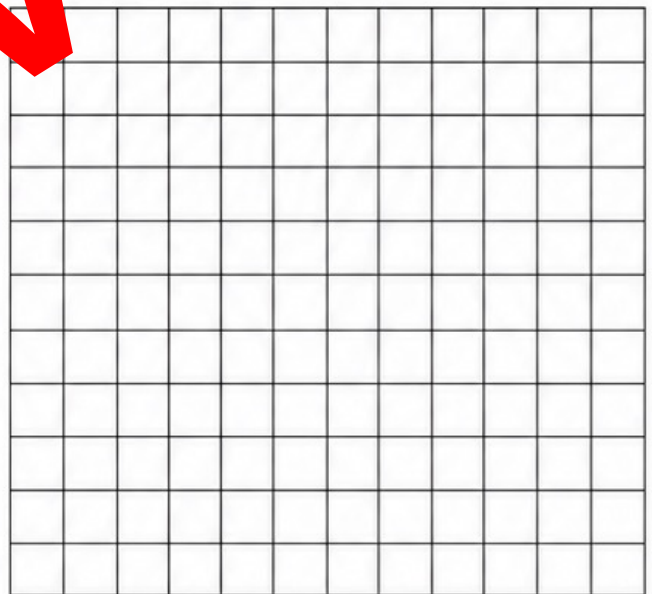
C. 2×9

Draw the array.



D. 8×3

Draw the array.



TURNAROUND FACTS

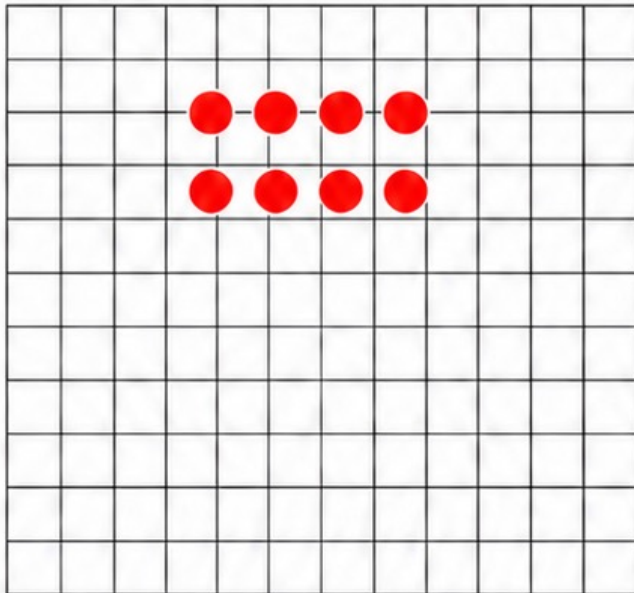
Choose one pair of turnaround facts. Explain how the same array shows both facts.

BUILD AND EXPLAIN ARRAYS

Name: ANSWERS

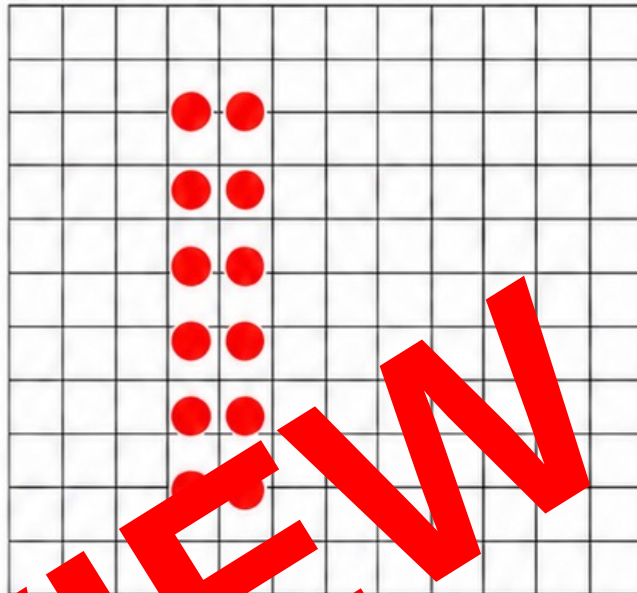
A. 2×4

Draw the array.



B. 6×2

Draw the array.



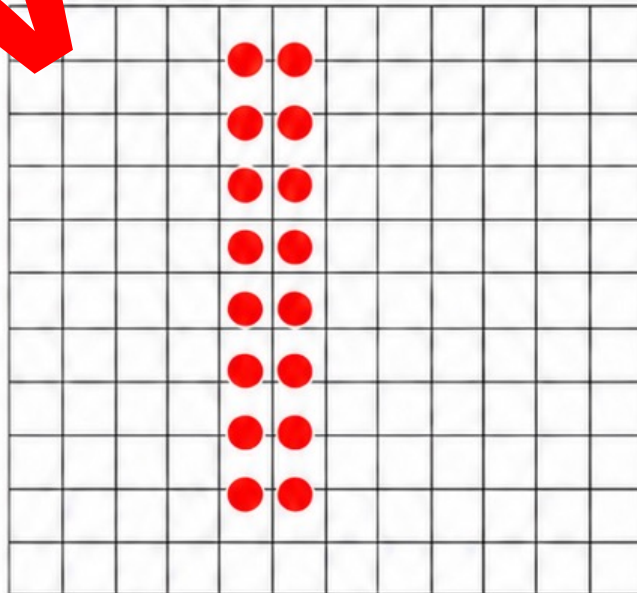
C. 2×9

Draw the array.



D. 8×2

Draw the array.



TURNAROUND FACTS

Choose one pair of turnaround facts. Explain how the same array shows both facts.

For example, 2×4 and 4×2 use the same 8 dots. Turning the array swaps rows and columns, but the total stays 8.

TURNAROUND FACTS

Name: _____

Complete each pair. Notice what stays the same.

1. $2 \times 2 =$

$2 \times 2 =$

2. $2 \times 3 =$

$3 \times 2 =$

3. $2 \times 4 =$

$4 \times 2 =$

4. $2 \times 5 =$

$5 \times 2 =$

5. $2 \times 6 =$

$6 \times 2 =$

6. $2 \times 7 =$

$7 \times 2 =$

7. $2 \times 8 =$

$8 \times 2 =$

8. $2 \times 9 =$

$9 \times 2 =$

What stays the same when the factors turn around?

TURNAROUND FACTS

Name: ANSWERS

Complete each pair. Notice what stays the same.

1. $2 \times 2 =$ 4

$2 \times 2 =$ 4

2. $2 \times 3 =$ 6

$3 \times 2 =$ 6

3. $2 \times 4 =$ 8

$4 \times 2 =$ 8

4. $2 \times 5 =$ 10

$5 \times 2 =$ 10

5. $2 \times 6 =$ 12

$6 \times 2 =$ 12

6. $2 \times 7 =$ 14

$7 \times 2 =$ 14

7. $2 \times 8 =$ 16

$8 \times 2 =$ 16

8. $2 \times 9 =$ 18

$9 \times 2 =$ 18

What stays the same when the factors turn around?

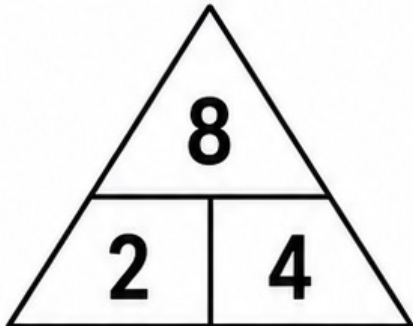
The product stays the same. The factors change order, but the total does not change.

FACT FAMILY CONNECTIONS

Name: _____

Write two multiplication facts and two division facts for each family.

①



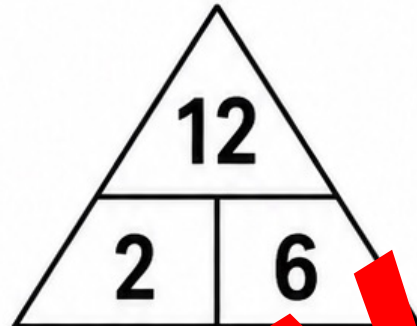
$$2 \times 4 = 8$$

$$4 \times 2 = 8$$

$$8 \div 2 = 4$$

$$8 \div 4 = 2$$

②

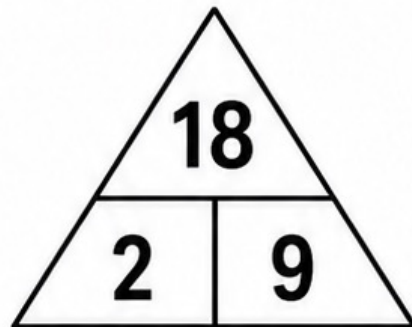


x

x

÷

④



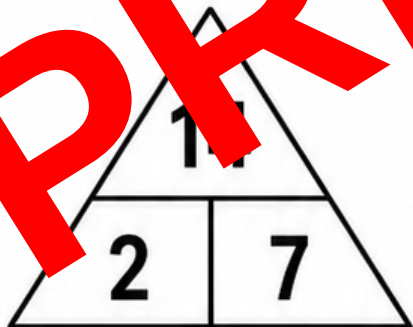
x

x

÷

÷

③



x

x

÷

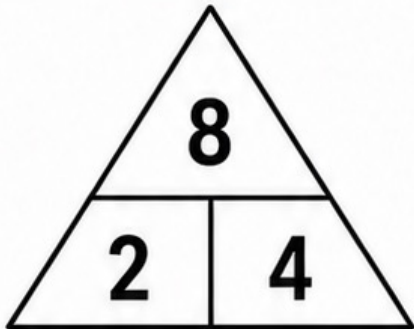
÷

FACT FAMILY CONNECTIONS

Name: ANSWERS

Write two multiplication facts and two division facts for each family.

①



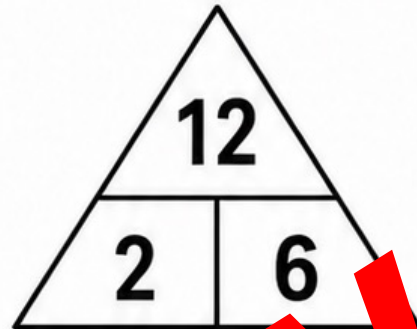
$$2 \times 4 = 8$$

$$4 \times 2 = 8$$

$$8 \div 2 = 4$$

$$8 \div 4 = 2$$

②



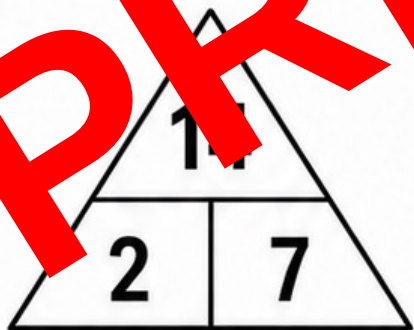
$$2 \times 6 = 12$$

$$6 \times 2 = 12$$

$$12 \div 2 = 6$$

$$12 \div 6 = 2$$

③



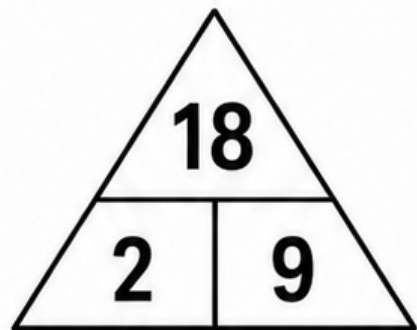
$$2 \times 7 = 14$$

$$7 \times 2 = 14$$

$$14 \div 2 = 7$$

$$14 \div 7 = 2$$

④



$$2 \times 9 = 18$$

$$9 \times 2 = 18$$

$$18 \div 2 = 9$$

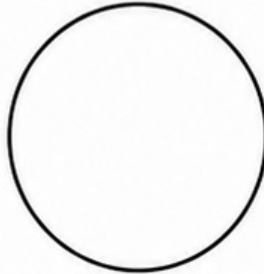
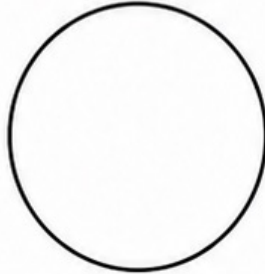
$$18 \div 9 = 2$$

Name: _____

SHARE AND HALVE

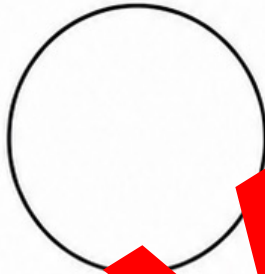
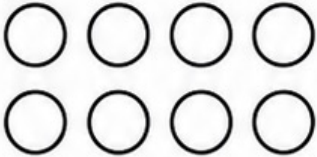
Share each set equally between 2 groups. Draw the counters in the group circles, then complete the division sentence.

1.



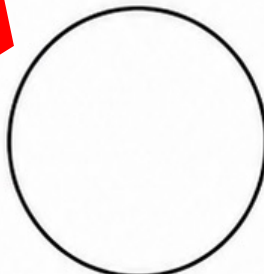
$4 \div 2 = \underline{\quad}$

2.



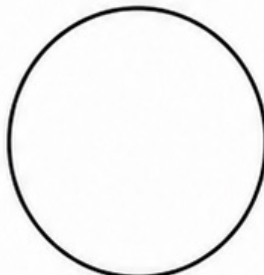
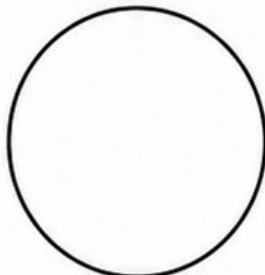
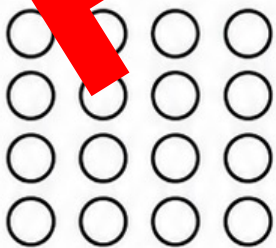
$8 \div 2 = \underline{\quad}$

3.



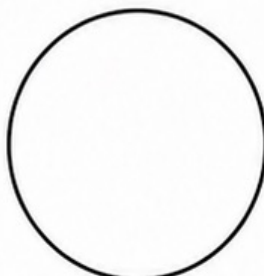
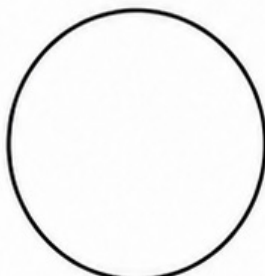
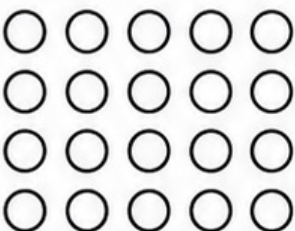
$12 \div 2 = \underline{\quad}$

4.



$16 \div 2 = \underline{\quad}$

5.



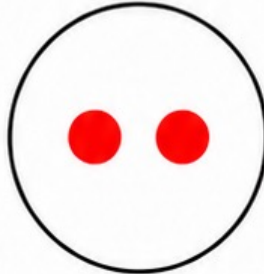
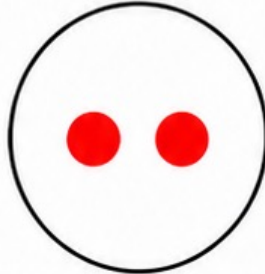
$20 \div 2 = \underline{\quad}$

Name: **ANSWERS**

SHARE AND HALVE

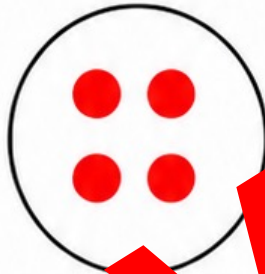
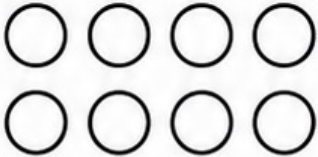
Share each set equally between 2 groups. Draw the counters in the group circles, then complete the division sentence.

1.



$$4 \div 2 = 2$$

2.



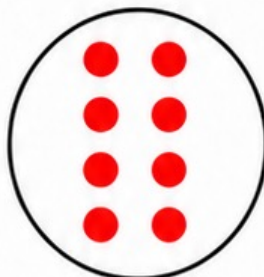
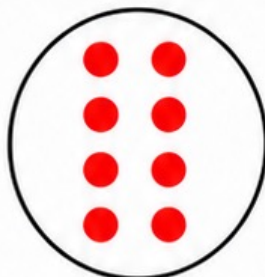
$$8 \div 2 = 4$$

3.



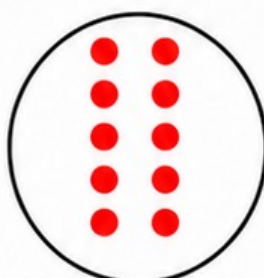
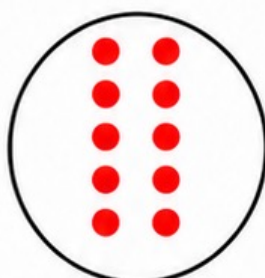
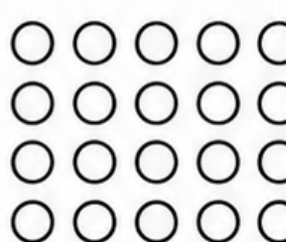
$$12 \div 2 = 6$$

4.



$$16 \div 2 = 8$$

5.



$$20 \div 2 = 10$$

DIVISION WITH TWOS

Name: _____

A. Solve

1. $14 \div 2 =$

5. $16 \div 2 =$

2. $18 \div 9 =$

6. $8 \div 4 =$

3. $20 \div 2 =$

7. $10 \div 5 =$

4. $12 \div 6 =$

8. $6 \div 2 =$

B. Prove with multiplication

Write the multiplication fact that proves each answer.

1. $14 \div 2 = 7$ because _____

2. $18 \div 9 = 2$ because _____

3. $20 \div 2 = 10$ because _____

4. $12 \div 6 = 2$ because _____

DIVISION WITH TWOS

Name: ANSWERS

A. Solve

1. $14 \div 2 =$

7

5. $16 \div 2 =$

8

2. $18 \div 9 =$

2

6. $8 \div 4 =$

2

3. $20 \div 2 =$

10

7. $10 \div 5 =$

2

4. $12 \div 6 =$

2

8. $6 \div 2 =$

3

B. Prove with multiplication

Write the multiplication fact that proves each answer.

1. $14 \div 2 = 7$ because $2 \times 7 = 14$

2. $18 \div 9 = 2$ because $9 \times 2 = 18$

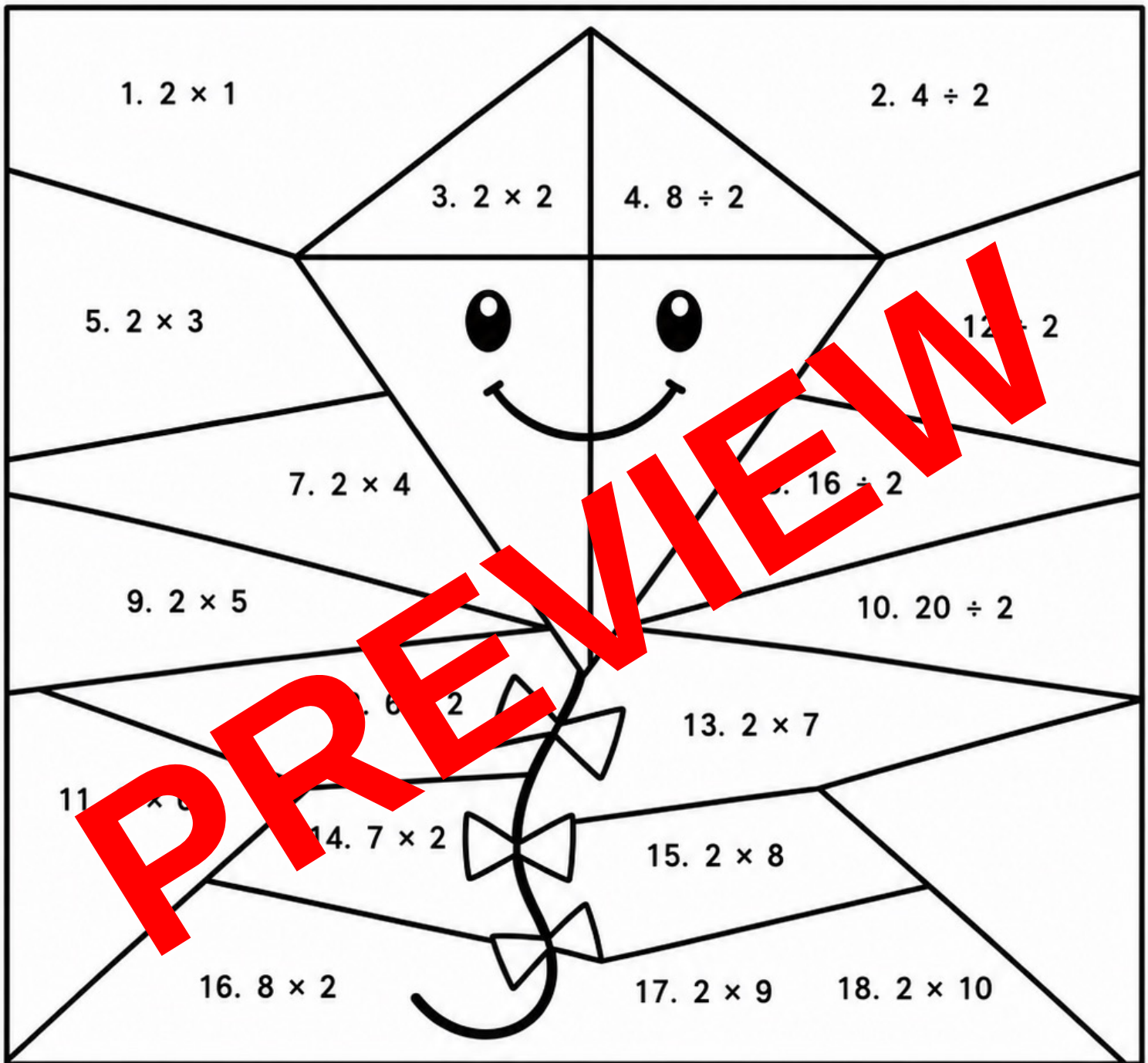
3. $20 \div 2 = 10$ because $2 \times 10 = 20$

4. $12 \div 6 = 2$ because $6 \times 2 = 12$

TWOS MYSTERY PICTURE

Name: _____

Solve each fact. Use the answer key to shade each region.



ANSWER KEY

2 = dots 	4 = horizontal lines 	6 = vertical lines 	8 = diagonal lines 	10 = crosshatch
12 = waves 	14 = checker 	16 = zigzag 	18 = circles 	20 = solid black

TWOS MYSTERY PICTURE

Name: ANSWERS

Solve each fact. Use the answer key to shade each region.



ANSWER KEY

2 = dots 	4 = horizontal lines 	6 = vertical lines 	8 = diagonal lines 	10 = crosshatch
12 = waves 	14 = checker 	16 = zigzag 	18 = circles 	20 = solid black

MIXED TWOS FLUENCY

Name: _____

Solve each fact.

1. $2 \times 1 =$

8. $2 \times 8 =$

15. $10 \div 2 =$

2. $2 \times 2 =$

9. $2 \times 9 =$

16. $12 \div 2 =$

3. $2 \times 3 =$

10. $2 \times 10 =$

17. $14 \div 2 =$

4. $2 \times 4 =$

11. $2 \div 2 =$

18. $16 \div 2 =$

5. $2 \times 5 =$

12. $4 \div 2 =$

19. $18 \div 2 =$

6. $2 \times 6 =$

13. $6 \div 2 =$

20. $20 \div 2 =$

7. $2 \times 7 =$

14. $8 \div 2 =$

I checked using:

Skip count

☐

Double

☐

Array

☐

Fact family

☐

MIXED TWOS FLUENCY

Name: ANSWERS

Solve each fact.

1. $2 \times 1 =$ 2

8. $2 \times 8 =$ 16

15. $10 \div 2 =$ 5

2. $2 \times 2 =$ 4

9. $2 \times 9 =$ 18

16. $12 \div 2 =$ 6

3. $2 \times 3 =$ 6

10. $2 \times 10 =$ 20

17. $14 \div 2 =$ 7

4. $2 \times 4 =$ 8

11. $2 \div 2 =$ 1

18. $16 \div 2 =$ 8

5. $2 \times 5 =$ 10

12. $4 \div 2 =$ 2

19. $18 \div 2 =$ 9

6. $2 \times 6 =$ 12

13. $6 \div 2 =$ 3

20. $20 \div 2 =$ 10

7. $2 \times 7 =$ 14

14. $8 \div 2 =$ 4

I checked using:

Skip count

☐

Double

☐

Array

☐

Fact family

☐

TWOS FLUENCY CHALLENGE

Name: _____

A. Find the missing number

1. $2 \times \square = 6$

2. $\square \times 2 = 16$

3. $14 \div 2 = \square$

4. $18 \div \square = 9$

5. $\square \div 2 = 5$

6. $2 \times \square = 20$

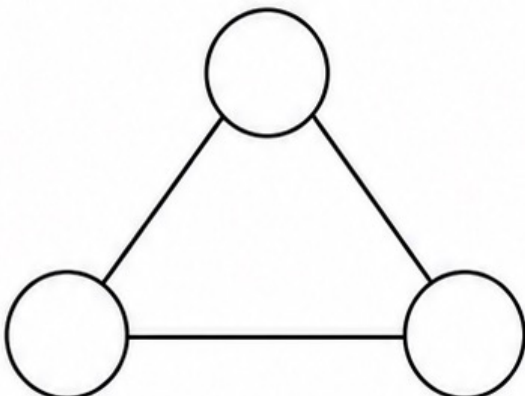
7. $12 \div \square = 6$

8. $\square \div 2 = 6$

B. True or false? Correct the false facts

	TRUE	FALSE	Correction:
1. $2 \times 7 = 14$	☐	☐	_____
2. $9 \times 2 = 16$	☐	☐	_____
3. $12 \div 2 = 5$	☐	☐	_____
4. $2 \times 5 = 2 \times 2$	☐	☐	_____
5. $10 \div 2 = 10$	☐	☐	_____
6. $18 \div 9 = 3$	☐	☐	_____

C. Create a fact family



$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
 $\underline{\hspace{2cm}} \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

TWOS FLUENCY CHALLENGE

Name: ANSWERS

A. Find the missing number

1. $2 \times \boxed{3} = 6$

2. $\boxed{8} \times 2 = 16$

3. $14 \div 2 = \boxed{7}$

4. $18 \div \boxed{2} = 9$

5. $\boxed{10} \div 2 = 5$

6. $2 \times \boxed{10} = 20$

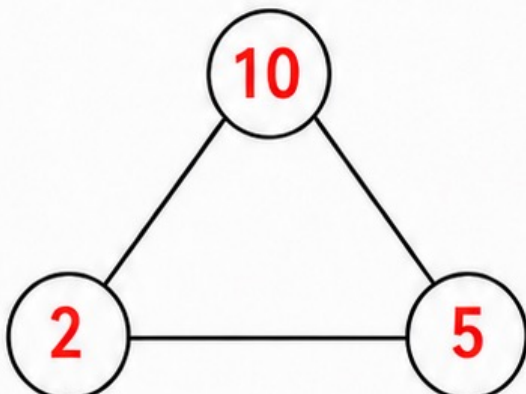
7. $12 \div \boxed{2} = 6$

8. $\boxed{4} \times 2 = 8$

B. True or false? Correct the false facts

	TRUE	FALSE	Correction:
1. $2 \times 7 = 14$	☒	☐	
2. $9 \times 2 = 16$	☐	☒	$9 \times 2 = 18$
3. $12 \div 2 = 5$	☐	☒	$12 \div 2 = 6$
4. $2 \times 9 = 2 \times 2$	☒	☐	
5. $10 \div 2 = 10$	☒	☐	
6. $18 \div 9 = 3$	☐	☒	$18 \div 9 = 2$

C. Create a fact family



$$\begin{array}{rcl} \underline{2} & \times & \underline{5} = \underline{10} \\ \underline{5} & \times & \underline{2} = \underline{10} \\ \underline{10} & \div & \underline{2} = \underline{5} \\ \underline{10} & \div & \underline{5} = \underline{2} \end{array}$$

TWOS IN EVERYDAY PROBLEMS

Name: _____

Write a number sentence, show your working and answer each problem.

1. Zara sets out 6 pairs of thongs for a relay. How many thongs are there altogether?

Number sentence:

Working:

Answer: _____

2. Eight cricket teams each receive 2 practice bats. How many bats are needed?

Number sentence:

Working:

Answer: _____

3. Fourteen sausages are shared equally between 2 trays. How many sausages go on each tray?

Number sentence:

Working:

Answer: _____

4. A class makes 8 gift bags with 2 stickers in each bag. How many stickers are used?

Number sentence:

Working:

Answer: _____

5. Twenty cones are placed equally in 2 rows. How many cones are in each row?

Number sentence:

Working:

Answer: _____

6. Twelve children form pairs for a game. How many pairs are made?

Number sentence:

Working:

Answer: _____

PREVIEW

TWOS IN EVERYDAY PROBLEMS

Name: ANSWERS

Write a number sentence, show your working and answer each problem.

1. Zara sets out 6 pairs of thongs for a relay. How many thongs are there altogether?

Number sentence:

$$6 \times 2 = 12$$

Working:

$$\text{Double 6: } 6 + 6 = 12$$

Answer: 12 thongs

2. Eight cricket teams each receive 2 practice bats. How many bats are needed?

Number sentence:

$$8 \times 2 = 16$$

Working:

$$\text{Double 8: } 8 + 8 = 16$$

Answer: 16 bats

3. Fourteen sausages are shared equally between 2 trays. How many sausages go on each tray?

Number sentence:

$$14 \div 2 = 7$$

Working:

$$\text{Half of 14 is 7}$$

Answer: 7 sausages

4. The class made 9 gift bags with 2 stickers in each bag. How many stickers are used?

Number sentence:

$$9 \times 2 = 18$$

Working:

$$\text{Double 9: } 9 + 9 = 18$$

Answer: 18 stickers

5. Twenty cones are placed equally in 2 rows. How many cones are in each row?

Number sentence:

$$20 \div 2 = 10$$

Working:

$$\text{Half of 20 is 10}$$

Answer: 10 cones

6. Twelve children form pairs for a game. How many pairs are made?

Number sentence:

$$12 \div 2 = 6$$

Working:

$$\text{Half of 12 is 6}$$

Answer: 6 pairs

CHOOSE, SOLVE AND EXPLAIN

Name: _____

Choose multiplication or division. Show a strategy and explain your thinking.

1. A stall packs 2 juice boxes in each crate. It fills 7 crates, then fills 2 more crates. How many juice boxes are packed?

Operation: _____

Number sentence: _____

Strategy and explanation: _____

2. There are 16 tickets. Two tickets make one pair. How many pairs can be made?

Operation: _____

Number sentence: _____

Strategy and explanation: _____

3. Amir says 6×2 and 2×6 have different totals because the array turns around. Is he correct? Explain using an array.

Operation: _____

Number sentence: _____

Strategy and explanation: _____

4. A teacher shares 20 counters equally between 2 teams. How many counters does each team receive? Name a multiplication fact that checks your answer.

Operation: _____

Number sentence: _____

Strategy and explanation: _____

CHOOSE, SOLVE AND EXPLAIN

Name: ANSWERS

Choose multiplication or division. Show a strategy and explain your thinking.

1. A stall packs 2 juice boxes in each crate. It fills 7 crates, then fills 2 more crates. How many juice boxes are packed?

Operation: Multiplication

Number sentence: $(7 + 2) \times 2 = 9 \times 2 = 18$

Strategy and explanation: Seven crates hold 14. Two more hold 4.
Altogether, $14 + 4 = 18$ juice boxes.

2. There are 16 tickets. Two tickets make one pair. How many pairs can be made?

Operation: Division

Number sentence: $16 \div 2 = 8$

Strategy and explanation: Half of 16 is 8, so 8 pairs can be made.

3. Amir says 6×2 and 2×6 have different totals because the array turns around. Is he correct? Explain using an array.

Operation: Multiplication

Number sentence: $6 \times 2 = 12$ and $2 \times 6 = 12$

Strategy and explanation: Amir is not correct.

Turning the array swaps rows and columns,
but the same 12 dots remain.

●	●	●	●	●	●
●	●	●	●	●	●

4. A teacher shares 20 counters equally between 2 teams. How many counters does each team receive?

Name a multiplication fact that checks your answer.

Operation: Division

Number sentence: $20 \div 2 = 10$

Strategy and explanation: Each team receives 10 counters.
Check: $2 \times 10 = 20$.

TWOS AT THE SCHOOL FAIR – ASSESSMENT

Name: _____

Date: _____

Show what you know about multiplication and division with twos.

1. Complete the sequence: 2, 4, __, 8, __, 12 [2 marks]

2. Complete the doubles: $4 + 4 =$ __; $7 + 7 =$ __; $9 + 9 =$ __ [3 marks]

3. Draw an array for 2×6 and write the product. [2 marks]

Product: _____

4. Solve. [4 marks]

$2 \times 8 =$ _____ $14 \div 2 =$ _____ $14 \div 7 =$ _____ $12 \div 2 =$ _____

5. The fair packs 2 tickets in each of 7 envelopes. [2 marks]
How many tickets are packed?

Number sentence: _____

Answer: _____

6. Twenty prizes are shared equally between 2 stalls. [2 marks]
How many prizes does each stall receive?

Number sentence: _____

Answer: _____

TOTAL: ____ / 15

TWOS AT THE SCHOOL FAIR – ASSESSMENT

Name: ANSWERS

Date: _____

Show what you know about multiplication and division with twos.

1. Complete the sequence: 2, 4, 6, 8, 10, 12 [2 marks]

2. Complete the doubles: $4 + 4 = \underline{8}$; $7 + 7 = \underline{14}$; $9 + 9 = \underline{18}$ [3 marks]

3. Draw an array for 2×6 and write the product. [2 marks]

•	•	•	•	•	•
•	•	•	•	•	•

Product: 12

4. Solve. [4 marks]

$2 \times 8 = \underline{16}$ $16 \div 2 = \underline{8}$ $14 \div 7 = \underline{2}$ $12 \div 2 = \underline{6}$

5. The fair packs 2 tickets in each of 7 envelopes.
How many tickets are packed? [2 marks]

Number sentence: $2 \times 7 = 14$

Answer: 14 tickets

6. Twenty prizes are shared equally between 2 stalls.
How many prizes does each stall receive? [2 marks]

Number sentence: $20 \div 2 = 10$

Answer: 10 prizes

TOTAL: 15 / 15

TWOS AT THE SCHOOL FAIR – REASONING

Name: _____

1. The ticket stall places 2 tickets on each strip. [2 marks]
There are 9 strips. How many tickets?

Number sentence: _____

Answer: _____

2. Sixteen prizes are shared equally between 2 boxes. [2 marks]
How many prizes in each box?

Number sentence: _____

Answer: _____

3. Seven pairs of sunglasses are on display. [2 marks]
How many sunglasses?

Number sentence: _____

Answer: _____

4. Twenty tokens are packed in groups of 2. [2 marks]
How many groups are there?

Number sentence: _____

Answer: _____

5. Use 2, 7 and 14 to write two multiplication facts and two division facts. [4 marks]

_____ = _____ _____ = _____

_____ = _____ _____ = _____

6. Explain why 2×8 and 8×2 have the same product. [3 marks]
Name a strategy that proves your answer.

TOTAL: ____ / 15

TWOS AT THE SCHOOL FAIR – REASONING

Name: ANSWERS

1. The ticket stall places 2 tickets on each strip. [2 marks]
There are 9 strips. How many tickets?

Number sentence: $9 \times 2 = 18$

Answer: 18 tickets

2. Sixteen prizes are shared equally between 2 boxes. [2 marks]
How many prizes in each box?

Number sentence: $16 \div 2 = 8$

Answer: 8 prizes

3. Seven pairs of sunglasses are on display. [2 marks]
How many sunglasses?

Number sentence: $7 \times 2 = 14$

Answer: 14 sunglasses

4. Twenty tokens are packed in groups of 2. [2 marks]
How many groups are there?

Number sentence: $20 \div 2 = 10$

Answer: 10 groups

5. Use 2, 7 and 14 to write two multiplication facts and two division facts. [4 marks]

$2 \times 7 = 14$ $14 \div 2 = 7$

$7 \times 2 = 14$ $14 \div 7 = 2$

6. Explain why 2×8 and 8×2 have the same product. [3 marks]
Name a strategy that proves your answer.

Both facts have product 16. Turning the array
swaps rows and columns, but the total stays the same.
Double 8 proves it.

TOTAL: 15 / 15

TREMENDOUS TWOS RUBRIC

Student: _____

Date: _____

Teacher: _____

CRITERIA	BEGINNING	DEVELOPING	ACHIEVING	CONFIDENT	EXCEEDING
Fact recall	Needs substantial support to recall two facts; emerging understanding. ☐	Recalls two facts with partial accuracy; needs prompts. ☐	Accurately recalls two facts to 20; applies in simple situations. ☐	Fluently recalls two facts to 20 independently; answers confidently. ☐	Applies two facts flexibly; justifies using patterns beyond 20. ☐
Models and representations	Uses concrete materials with substantial support; models are emerging. ☐	Uses models with partial accuracy; needs prompts to represent ideas. ☐	Chooses and uses appropriate models and representations accurately. ☐	Independently selects and uses models clearly to solve problems. ☐	Chooses representations flexibly; connects models and explains relationships. ☐
Multiplication-division connections	Understands connections with substantial support; relationships emerging. ☐	Identifies some related multiplication and division facts with prompts. ☐	Understands and uses related multiplication and division facts accurately. ☐	Fluently uses connections between multiplication and division independently. ☐	Generalises connections across contexts; justifies with clear explanations. ☐
Strategy choice	Uses strategies with substantial support; choices are limited. ☐	Uses some strategies with partial success; needs prompts. ☐	Chooses and applies appropriate strategies to solve problems. ☐	Independently selects efficient strategies and checks answers. ☐	Selects and adapts strategies flexibly; explains why effective. ☐
Reasoning and communication	Explains ideas with substantial support; reasoning is emerging. ☐	Explains ideas with partial accuracy; needs prompts. ☐	Clearly explains thinking using correct vocabulary and simple reasoning. ☐	Explains reasoning independently using mathematical vocabulary. ☐	Provides detailed justifications and generalisations beyond familiar examples. ☐

Tremendous Twos



Learning Goal

- By the end of the unit, you will:
- recall the multiplication facts
 - solve them with groups, arrays and doubles
 - connect multiplication with division
 - explain an efficient strategy



Equal Groups

Multiplication describes equal groups.

3 groups of 2 is $2 + 2 + 2$.

$$3 \times 2 = 6$$

1 group stays the same.



Repeated Addition

Four groups of 2:

$$2 + 2 + 2 + 2 = 8$$

$$4 \times 2 = 8$$

Both number sentences describe the same total.



Skip Counting

Count at 0 and add each time:

0, 2, 4, 6, 8, 10, 12, ...

Each jump shows one more group of 2.



The Even-Number Pattern

Products of 2 end in 2, 4, 6 or 8.
They are even numbers.
With every item can have a partner.



Doubling

Multiplying by 2 is the same as doubling.

$$7 \times 2 = 7 + 7 = 14$$

Knowing doubles can solve a two's fact quickly.



Choose a Strategy

- try on
 - skip count in twos
 - build equal groups
 - use a known double
- Choose the method you can explain clearly.



Arrays

An array has equal rows and columns.

2 rows of 4 dots make 8 dots.

$$2 \times 4 = 8$$



Read an Array Two Ways

2 rows of 5 = 10

5 rows of 2 = 10

They turn, but the total stays 10.



Turnaround Facts

$$2 \times 2 = 4$$

$$8 \times 2 = 16$$

Changing the order of factors does not change the product.
These are turnaround facts.



Build the Facts: 0 to 5 Group

$$0 \times 2 = 0 \quad 1 \times 2 = 2$$

$$2 \times 2 = 4 \quad 3 \times 2 = 6$$

$$4 \times 2 = 8 \quad 5 \times 2 = 10$$

Notice: each product is 2 more.



Build the Facts: 6 to 10 Groups

$$6 \times 2 = 12 \quad 7 \times 2 = 14$$

$$8 \times 2 = 16 \quad 9 \times 2 = 18$$

$$10 \times 2 = 20$$

Double the facts or continue the pattern.



Quick Multiplication Check

Say the product, and name your strategy:

$$2 \times 4 \quad 7 \times 9$$

$$10 \times 2 \quad 2 \times 6$$

Check: 14, 18, 20, 12.



Division Means Sharing Equally

12 counters are shared equally between 2 students.

Each student receives 6.

$$12 \div 2 = 6$$

Division can share a total into equal groups.



Division Can Make Equal Groups

How many groups of 2 can be made from 14?

Count pairs: 7 groups.

$$14 \div 2 = 7$$



Halving

Dividing an even number by 2 finds one half.

$$18 \div 2$$

Think: What number doubled makes 18?



Arrays Show Division

An array of 12 dots has 2 equal rows.

$12 \div 2 = 6$ dots in each row.

We also show $12 \div 6 = 2$ rows.



Inverse Operations

Multiplication and division undo each other.

$$2 \times 8 = 16$$

$$16 \div 2 = 8$$

$$16 \div 8 = 2$$



Fact Families

Use 2, 6 and 12:

$$2 \times 6 = 12 \quad 6 \times 2 = 12$$

$$12 \div 2 = 6 \quad 12 \div 6 = 2$$

All four facts use the same three numbers.



Choose a Division Strategy

to solve $20 \div 2$:

- $10 \div 2 = 5$
- build 10 tens
- use $2 \times 10 = 20$

Choose the strategy that is quickest and clear.



School-Fair Ticket Pairs

School-fair tickets come in pairs.

Seven pairs were sold.

$$7 \times 2 = 14 \text{ tickets}$$

If 14 tickets are paired, $14 \div 2 = 7$ pairs.



Explain Your Reasoning

Arithmetic could be 2, 4, 6, 8, 10, 12.

Mia doubles $6 \times 2 = 12$.

Both solve 6×2 .

Which method would you use? Why?



Mixed Practice

Solve

$$2 \times 3 = ? \quad 9 \div ? = ?$$

$$14 \div 2 = ? \quad 2 \times ? = 10$$

$$2 \times ? = 16$$

Answers: 6, 18, 7, 10, 8.

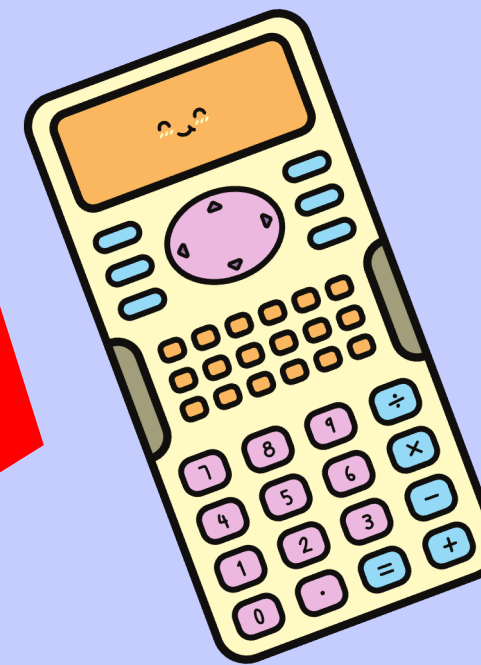
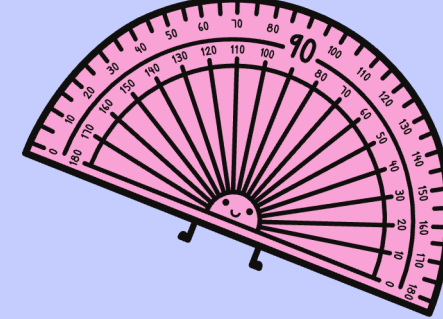
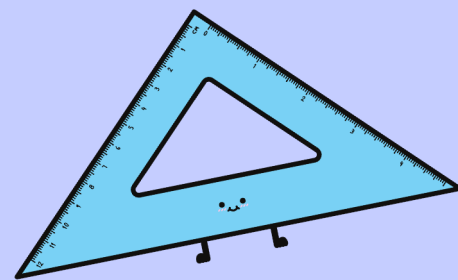
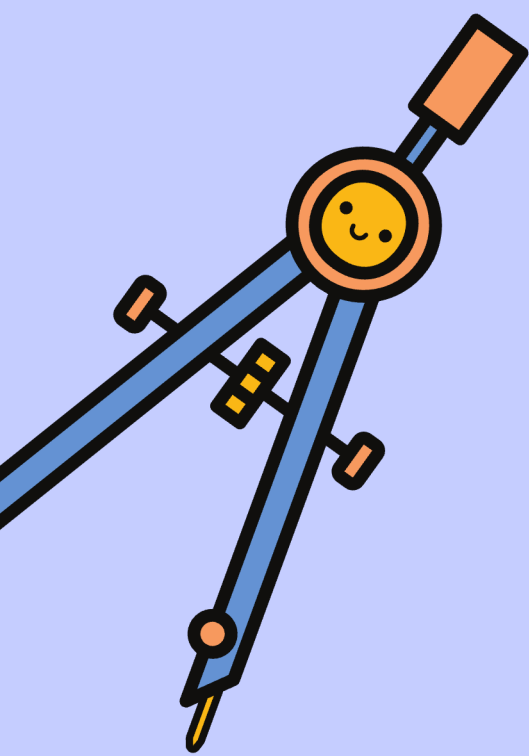


Exit Check

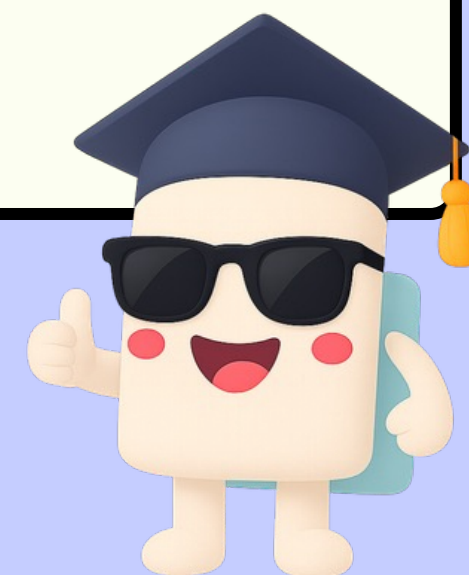
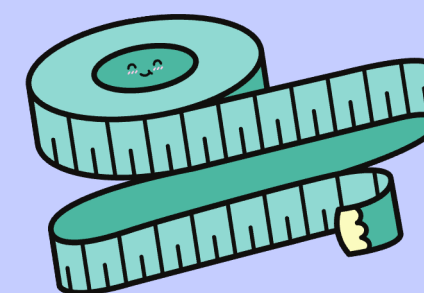
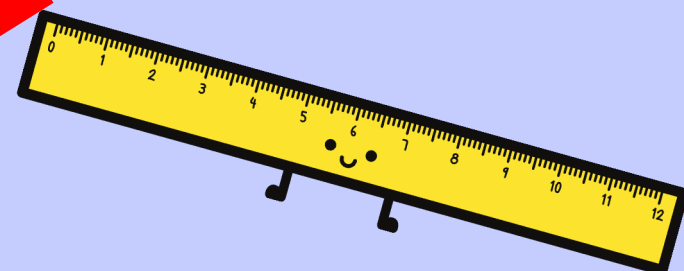
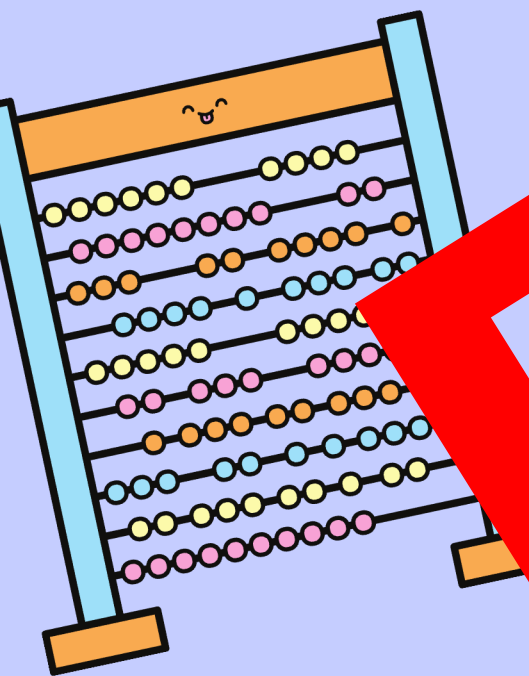
Before you finish:

1. Write a multiplication fact.
2. Draw an array of equal groups.
3. Write a related division fact.
4. Explain your strategy to a partner.





Well Done!



Tremendous Twos Quiz



Question 1

What comes next when counting by 2?

8, 10, 12

A. 13

B. 14

C. 15

D. 16



Answer 1

Add 2 each time.



Question 2

True or false?

$$2 \times 7 = 14$$



Answer 2

ven groups of 2 total 14.



Question 3

Double 5

What is the answer?



Answer 3

$$9 + 9 = 18$$



Question 4

An array has 2 rows of 5 dots.
How many dots are there?

A. 7 B. 8 C. 10 D. 12



Answer 4

$$2 \times 5 = 10$$



Question 5

Example:
 $16 \div 2 = ?$



Answer 5

Half of 16 is 8.



Question 6

True or false?

$$18 \div 9 = 2$$



Answer 6

$$9 \times 2 = 18.$$



Question 7

Which fact belongs to the family for 2, 6 and 12?

A. $12 \div 2 = 6$

B. $12 \div 4 = 3$

C. $6 + 2 = 8$

D. $12 - 6 = 6$



Answer 7

A. $12 \div 2 =$

es the numbers 2, 6 and 12.



Question 8

8 pairs of wristbands are prepared.
How many wristbands are there altogether?



Answer 8

12 wheels

$$6 \times 2 = 12$$



Question 9

Which number sentence matches 2 equal groups of 8?

- A. $2 + 8 = 10$
- B. $8 - 2 = 6$
- C. $2 \times 8 = 16$
- D. $8 \div 2 = 4$



Answer 9

C. $2 \times 8 =$

equal groups of 8 total 16.



Question 10

True or false?

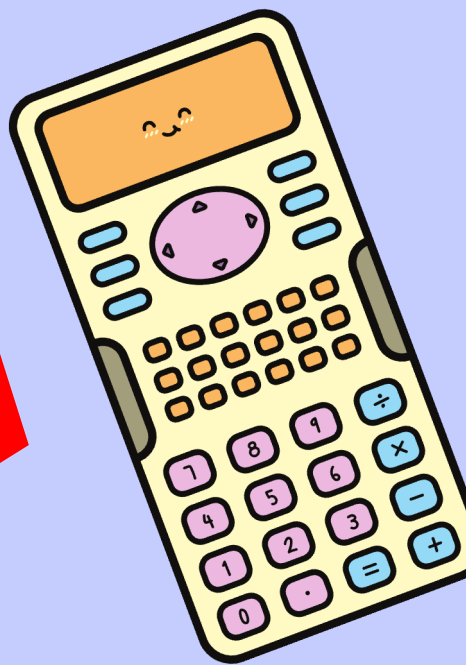
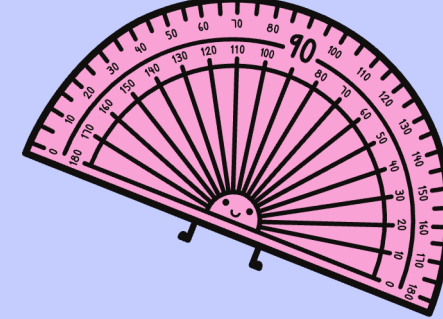
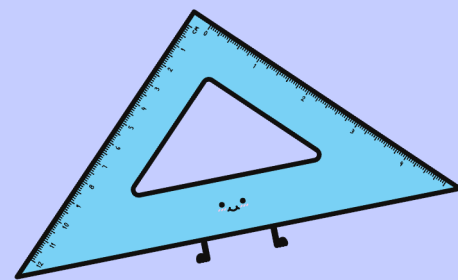
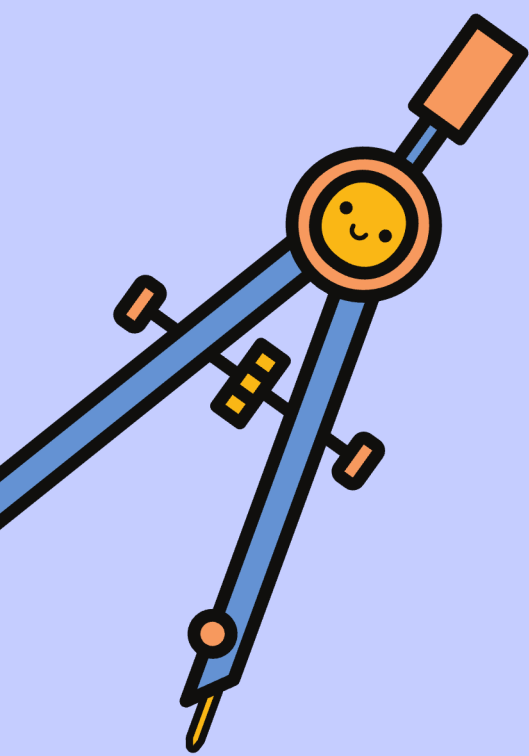
$$20 \div 2 = 10$$



Answer 10

One half of 20 is 10.





Well Done!

