Division Using Partitioning - Year 2

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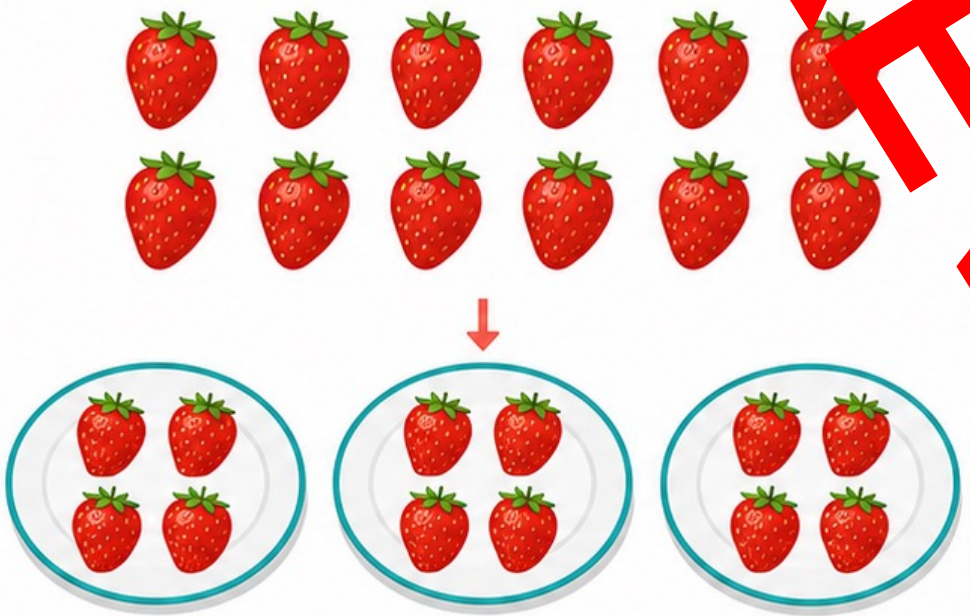
Two Ways to Divide

SHARING

How many in each group?



12 ÷ 3 = 4

GROUPING

How many groups?

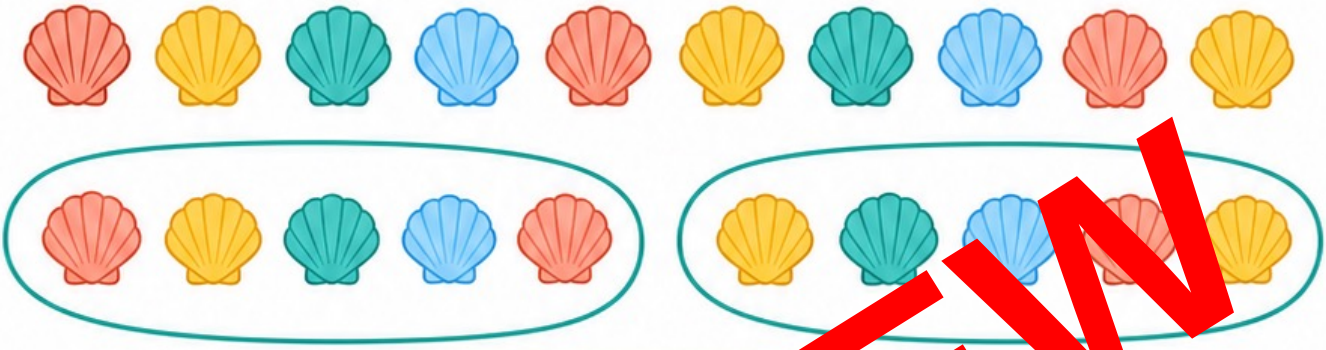
12 ÷ 3 = 4

★ Equal groups have the same number in every group. ★

Share or Group?

1 SHARING

The number of groups is known. Find how many are in each group.

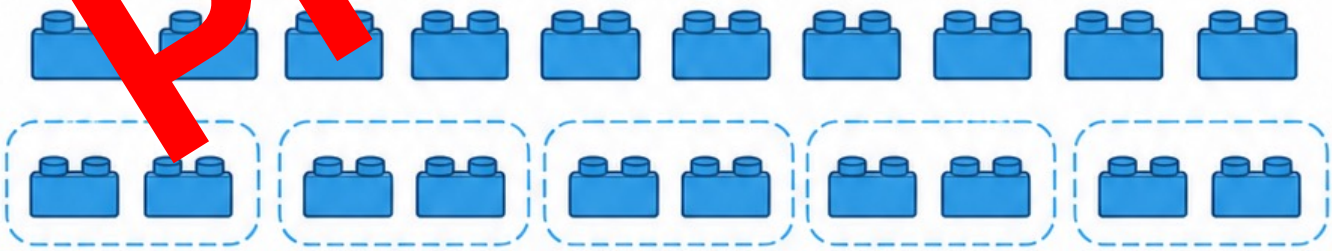


$10 \div 2 = 5$

Two equal groups make two equal parts of the collection.

2 GROUPING

The group size is known. Find how many groups can be made.



$10 \div 2 = 5$ groups

- Read the story.
- Choose a model.
- Make equal groups.
- Write the fact.
- Explain the answer.

Fair-Share Picnic Mat

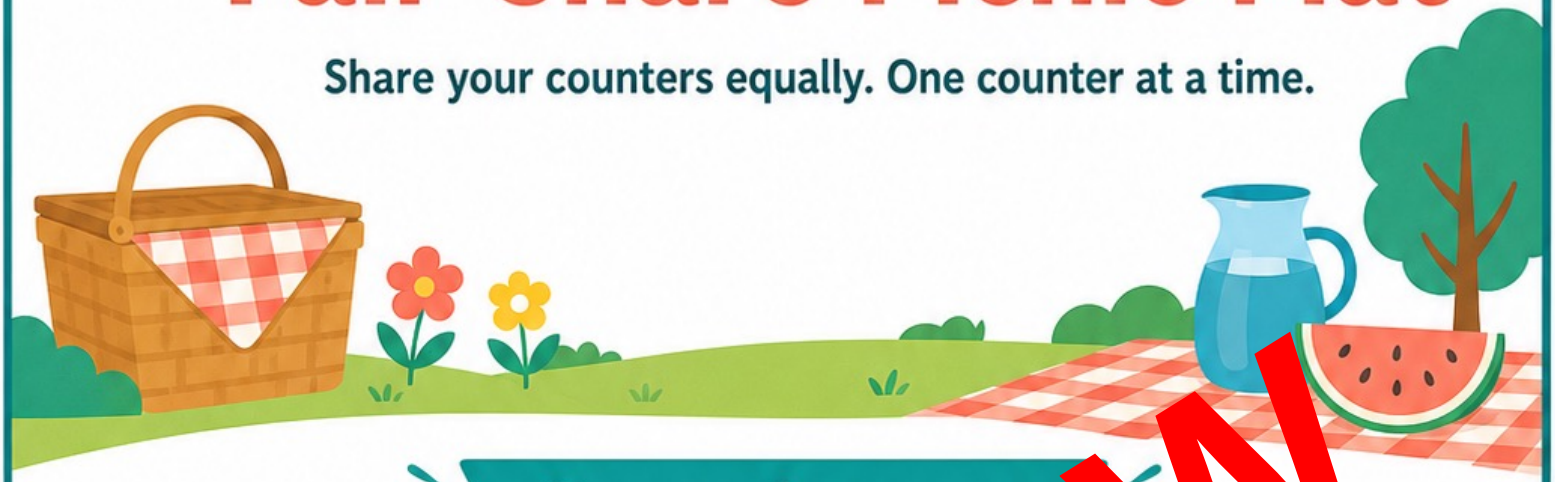
Share your counters equally. One counter at a time.

2 equal groups

Total counters:	Each group gets:	Division fact:

Fair-Share Picnic Mat

Share your counters equally. One counter at a time.



3 equal groups

Total counters:	Each group gets:	Division fact:

Fair-Share Picnic Mat

Share your counters equally. One counter at a time.

4 equal groups

Total counters:

Each group gets:

Division fact:

Fair-Share Picnic Recording Sheet

Name: _____ Date: _____

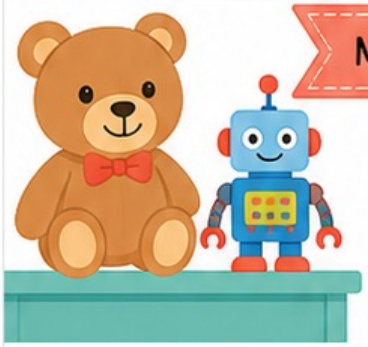
1	Total		Draw your equal groups
	Number of groups		
	Each group gets		
	Division fact		
2	Total		Draw your equal groups
	Number of groups		
	Each group gets		
	Division fact		
3	Total		Draw your equal groups
	Number of groups		
	Each group gets		
	Division fact		
4	Total		Draw your equal groups
	Number of groups		
	Each group gets		
	Division fact		

How did you make sure every group was equal?

_____

_____

Toy Shop Packing Mat



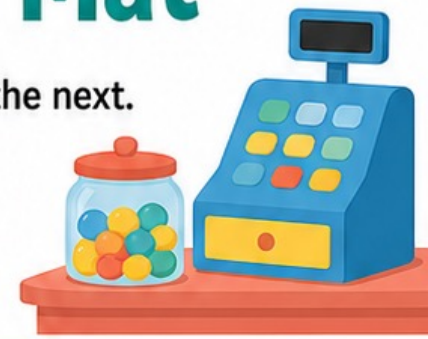
Make equal packs. Fill one pack before you start the next.

Groups of 2

Total toys:	Group size:	Number of groups:

Toy Shop Packing Mat

Make equal packs. Fill one pack before you start the next.



Groups of 5

Total toys: _____

Group size: _____

Number of groups: _____

Toy Shop Packing Mat

Make equal packs. Fill one pack before you start the next.

Groups of 10

Total toys:

Group size:

Number of groups:

Toy Shop Packing Recording Sheet

Name: _____ Date: _____

1	Total toys	Toys in each pack	Number of packs	Division fact
Model				

2	Total toys	Toys in each pack	Number of packs	ision fact
Model				

3	Total toys	ys in each pac	Number of packs	Division fact
Model				

4	Total toys	Toys in each pack	Number of packs	Division fact
Model				

What did you know first: the number of groups or the group size?

_____

_____

Division Delivery

RULES

Roll. Move. Draw a card. Solve the division challenge. If you can explain your model, stay on the space.

KEY

- Share
- Group
- Draw
- Explain

Division Delivery Cards

8 shared among 2

12 shared among 3

15 shared among 5

16 shared among 4

10 in groups of 2

12 in groups of 4

15 in groups of 3

20 in groups of 5

Draw 18 ÷ 3

Draw 24 ÷ 4

Explain 14 ÷ 2

Explain 30 ÷ 5

Division Delivery Recording Sheet

Year 2

Name: _____ Date: _____

Card	Model	Division fact	Answer in words
1.			
2.			
3.			
4.			
5.			
6.			

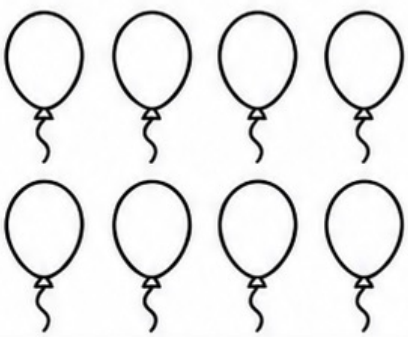
Circle one: SHARING / GROUPING

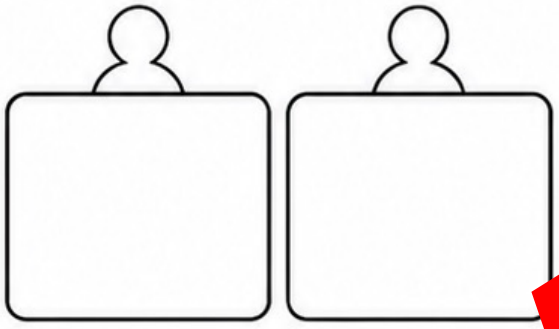
Name: _____ Date: _____

Share It Fairly

Draw the objects into equal groups. Complete each fact.

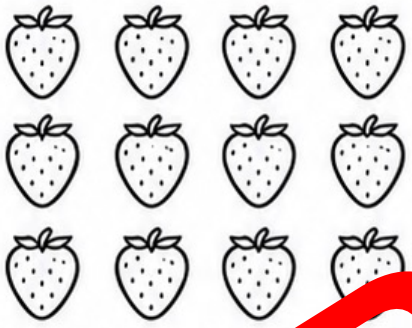
1. 8 balloons shared among 2 children





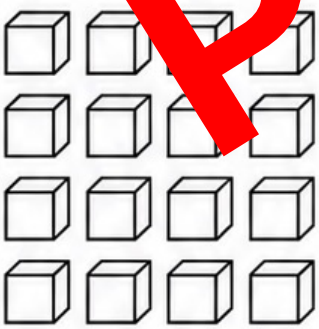
8 ÷ 2 = ___

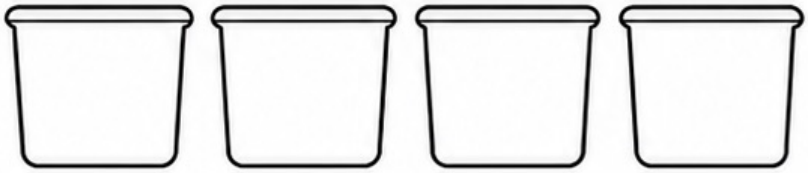
2. 12 strawberries shared among 3 plates



12 ÷ 3 = ___

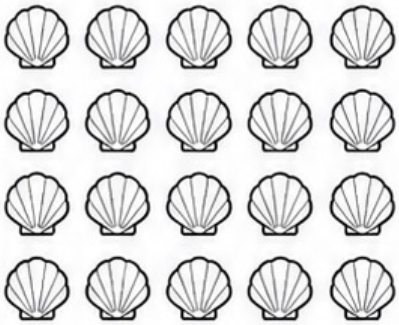
3. 16 [illegible] shared among 4 tubs

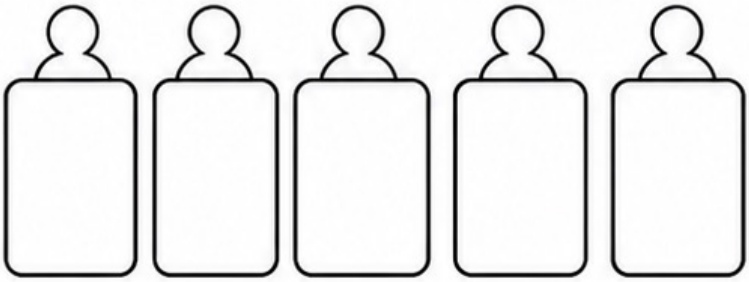




16 ÷ 4 = ___

4. 20 shells shared among 5 children





20 ÷ 5 = ___

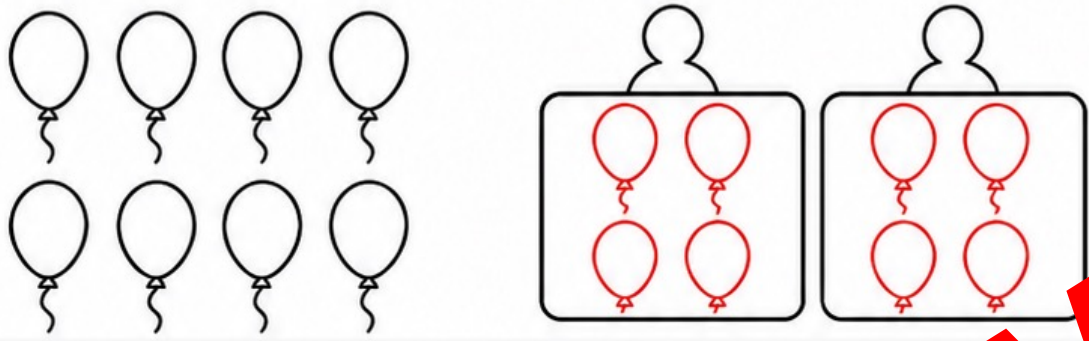
ANSWERS

Date: _____

Share It Fairly

Draw the objects into equal groups. Complete each fact.

1. 8 balloons shared among 2 children

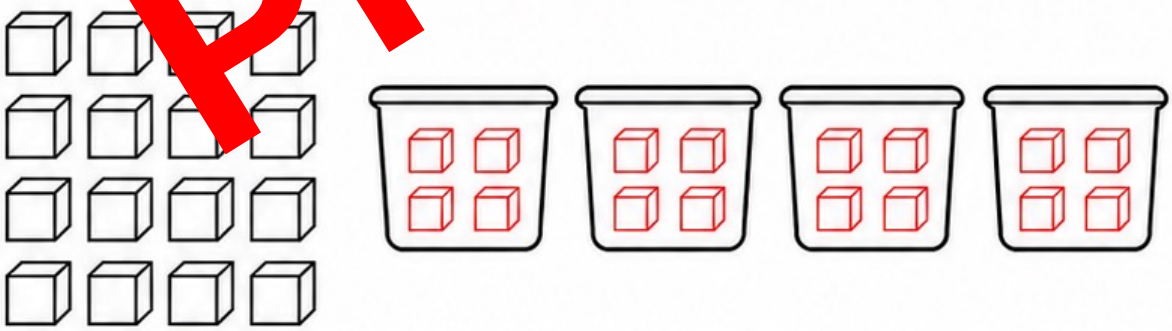


8 ÷ 2 = 4

2. 12 strawberries shared among 3 plates

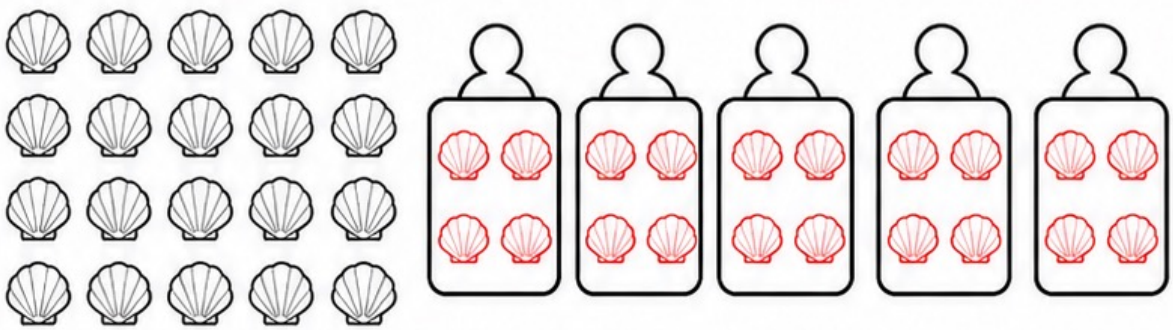
12 ÷ 3 = 4

3. 16 [illegible] among 4 tubs



16 ÷ 4 = 4

4. 20 shells shared among 5 children



20 ÷ 5 = 4

Make Equal Groups

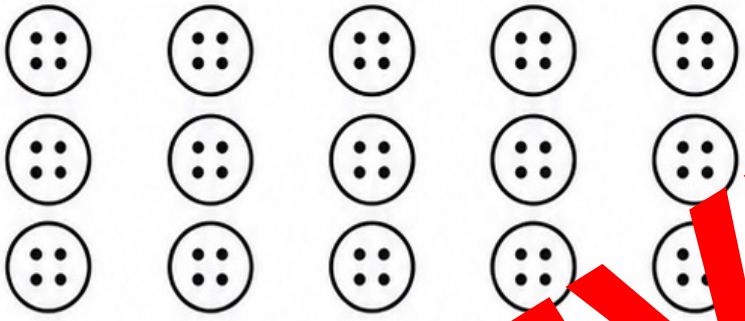
Name: _____ Date: _____

Circle equal groups. Count how many groups you made.

1. 10 stars in groups of 2

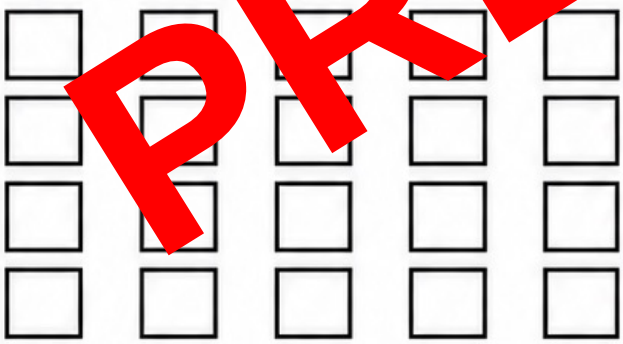
10 ÷ 2 = ___ groups

2. 15 buttons in groups of 3



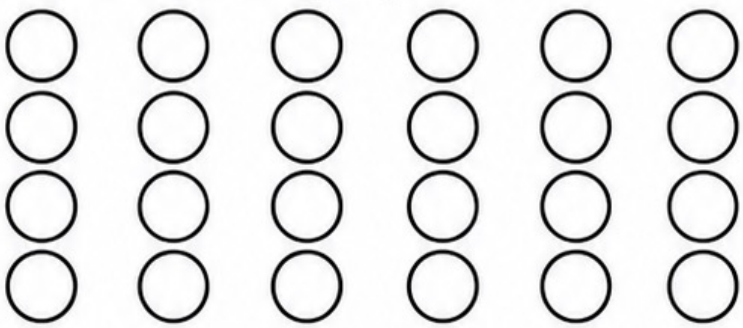
15 ÷ 3 = ___ groups

3. 20 tiles in groups of 5



20 ÷ 5 = ___ groups

4. 24 counters in groups of 4



24 ÷ 4 = ___ groups

Make Equal Groups

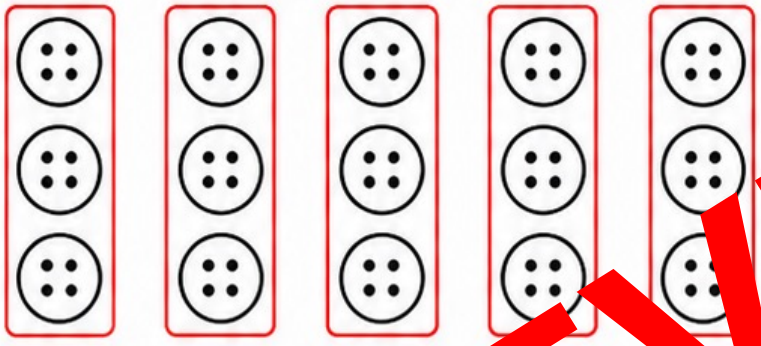
ANSWERS _____ Date: _____

Circle equal groups. Count how many groups you made.

1. 10 stars in groups of 2

10 ÷ 2 = 5 groups

2. 15 buttons in groups of 3

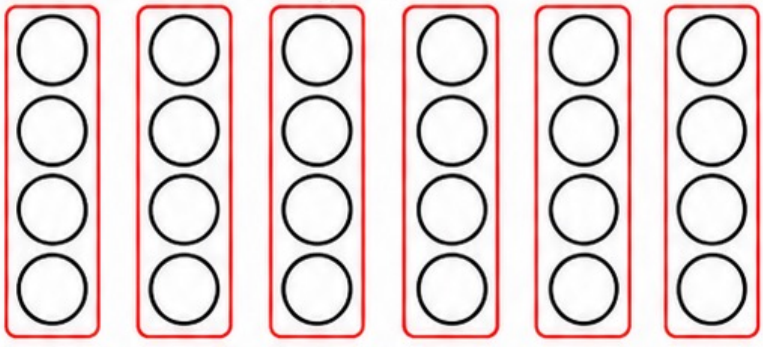


15 ÷ 3 = 5 groups

3. 20 tiles in gr[illegible]ps o[illegible]

20 ÷ 5 = 4 groups

4. 24 counters in groups of 4



24 ÷ 4 = 6 groups

Draw, Divide and Record

Page 1 – Sharing

Name: _____ **Date:** _____

Draw equal groups, then write the division fact.

1. Share 14 counters among 2 groups.

_____ ÷ _____ = _____ Each group has _____.

2. Share 18 counters among 3 groups.

_____ ÷ _____ = _____ Each group has _____.

3. Share 24 counters among 4 groups.

_____ ÷ _____ = _____ Each group has _____.

Draw, Divide and Record

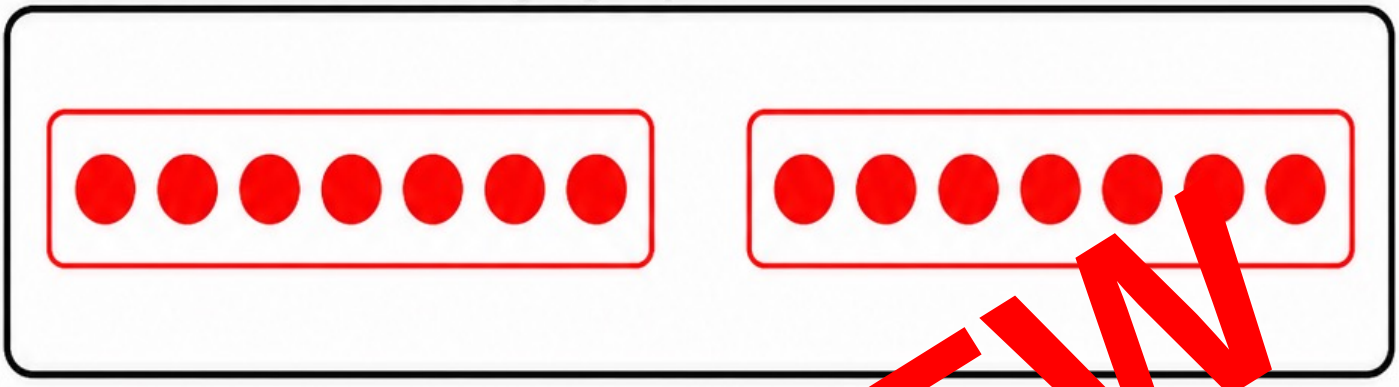
Page 1 – Sharing

ANSWERS

Date: _____

Draw equal groups, then write the division fact.

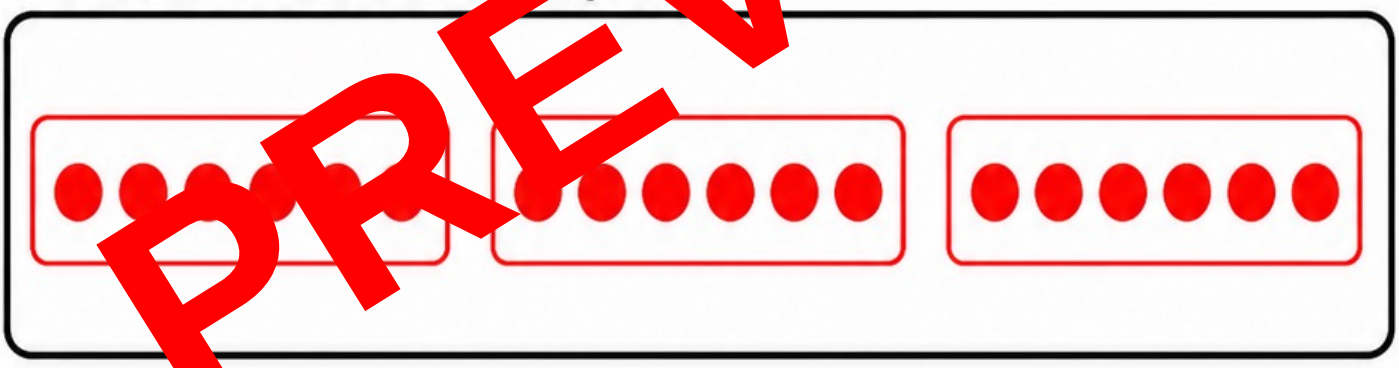
1. Share 14 counters among 2 groups.



14 ÷ 2 = 7

Each group has 7 .

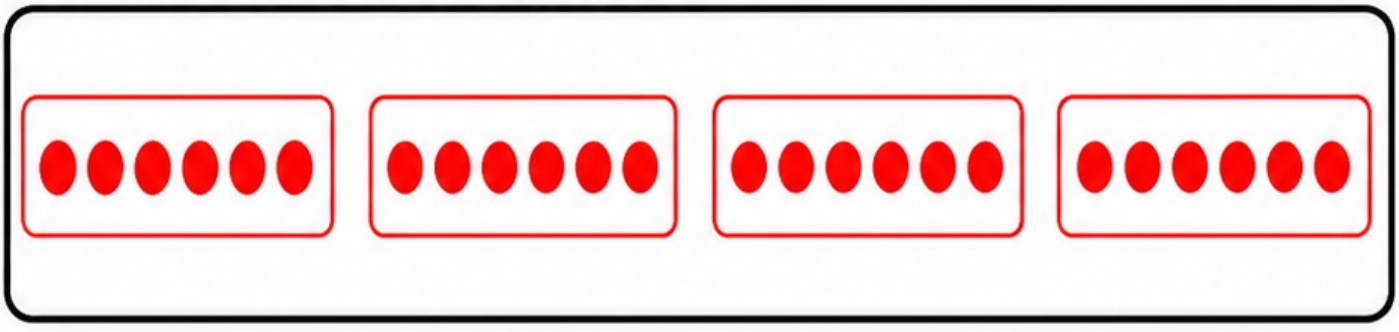
2. Share 18 counters among 3 groups.



18 ÷ 3 = 6

Each group has 6 .

3. Share 24 counters among 4 groups.



24 ÷ 4 = 6

Each group has 6 .

Draw, Divide and Record

Page 2 — Grouping

Name: _____ **Date:** _____

Draw groups of the given size, then write the division fact.

1. Make groups of 2 from 16 counters.

____ ÷ ____ = ____ groups

2. Make groups of 3 from 21 counters.

____ ÷ ____ = ____ groups

3. Make groups of 5 from 25 counters.

____ ÷ ____ = ____ groups

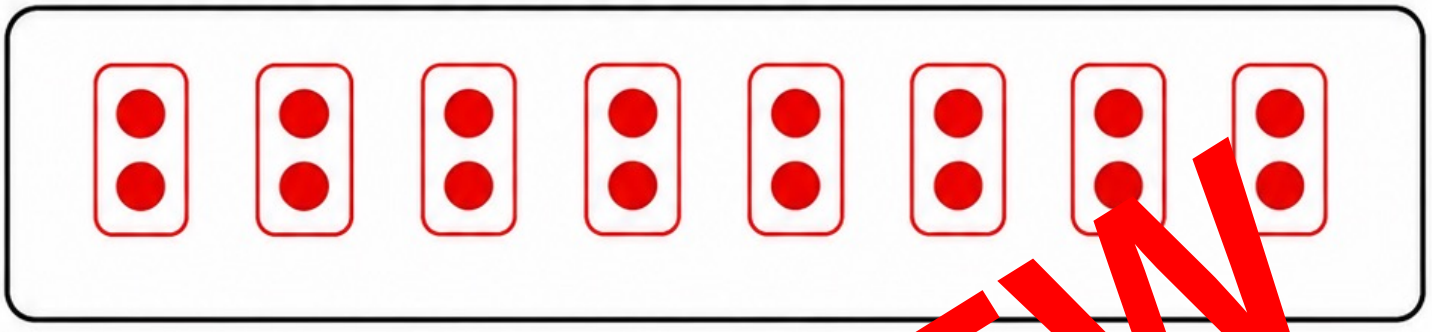
Draw, Divide and Record

Page 2 — Grouping

ANSWERS _____ **Date:** _____

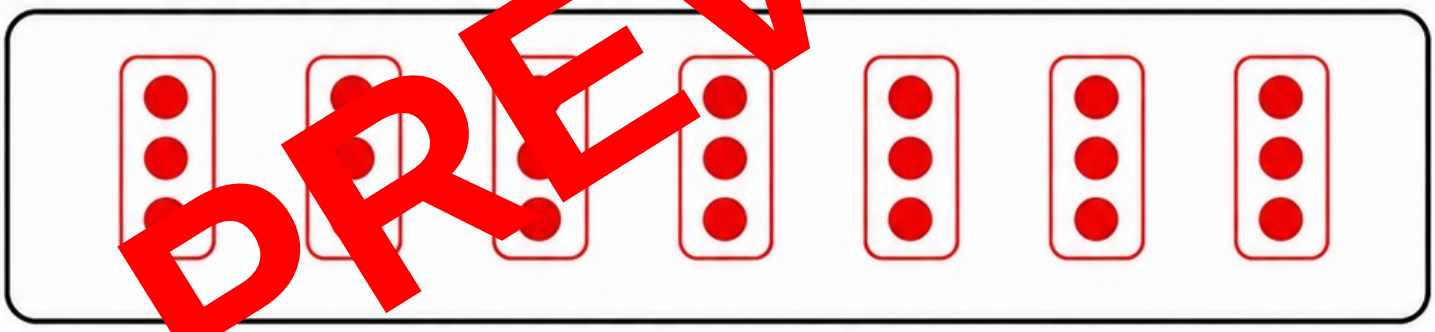
Draw groups of the given size, then write the division fact.

1. Make groups of 2 from 16 counters.



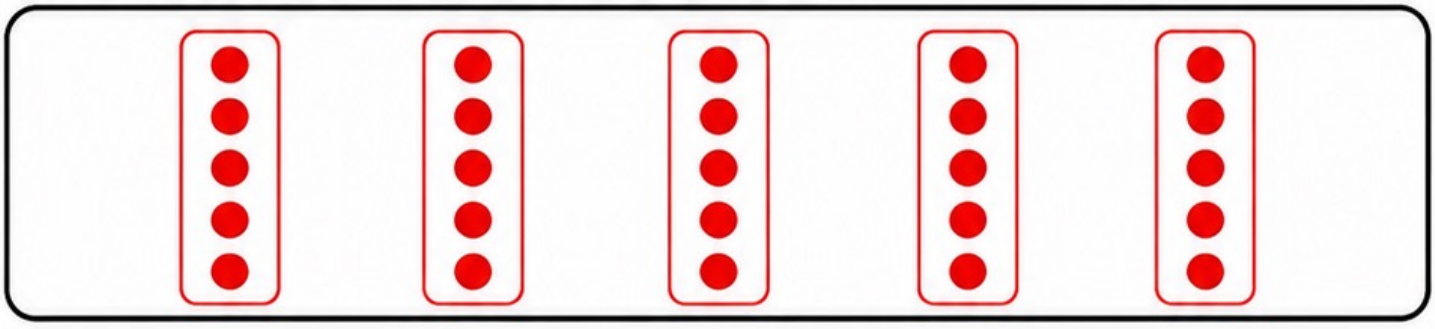
16 ÷ 2 = 8 groups

2. Make groups of 3 from 21 counters.



21 ÷ 3 = 7 groups

3. Make groups of 5 from 25 counters.



25 ÷ 5 = 5 groups

Which Division Model?

Name: _____ Date: _____

Read each story. Tick SHARING or GROUPING. Solve.

Story	SHARING	GROUPING	Division fact
12 muffins shared among 3 plates.	☐	☐	
12 muffins packed 3 per box.	☐	☐	
20 beads shared among 4 children.	☐	☐	
20 beads threaded in groups of 4	☐	☐	
18 shells shared among 3 buckets.	☐	☐	
18 shells placed 3 in each bag.	☐	☐	

How can the same division fact answer two different questions?

_____

_____

_____

Which Division Model?

ANSWERS _____ Date: _____

Read each story. Tick SHARING or GROUPING. Solve.

Story	SHARING	GROUPING	Division fact
12 muffins shared among 3 plates.	✓		12 ÷ 3 = 4
12 muffins packed 3 per box.		✓	12 ÷ 3 = 4 groups
20 beads shared among 4 children.	✓		20 ÷ 4 = 5
20 beads threaded in groups of 4		✓	20 ÷ 4 = 5 groups
18 shells shared among 3 buckets.	✓		18 ÷ 3 = 6
18 shells placed 3 in each bag.		✓	18 ÷ 3 = 6 groups

How can the same division fact answer two different questions?

The answer can mean the amount in each group or the number of groups.

Division Story Problems

Page 1 — Show and solve

Name: _____ Date: _____

1. 18 tomatoes are shared equally among 3 baskets. How many in each basket?

___ ÷ ___ = ___

_____

2. 20 crayons are packed 5 in each cup. How many cups?

___ ÷ ___ = ___

_____

3. 16 biscuits are shared equally among 4 plates. How many on each plate?

___ ÷ ___ = ___

_____

4. 24 cards are placed 4 in each pile. How many piles?

___ ÷ ___ = ___

_____

Division Story Problems

Page 1 — Show and solve

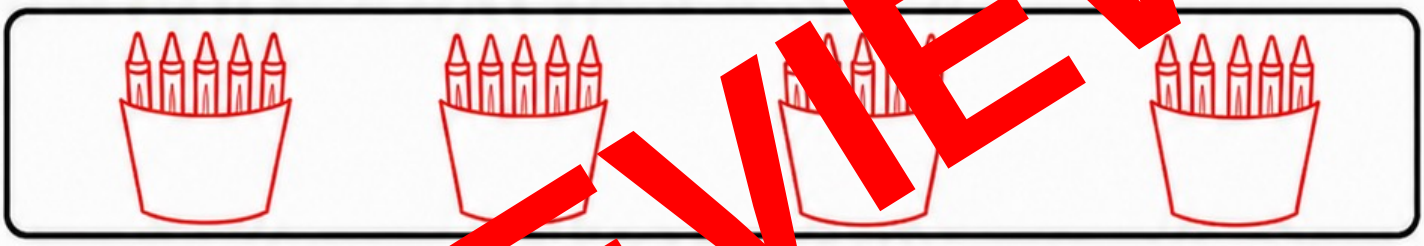
ANSWERS _____ Date: _____

1. 18 tomatoes are shared equally among 3 baskets. How many in each basket?

18 ÷ 3 = 6

6 tomatoes in each basket.

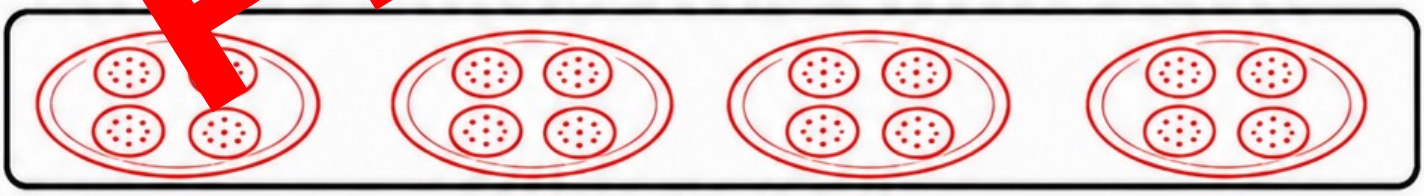
2. 20 crayons are packed 5 in each cup. How many cups?



20 ÷ 5 = 4

4 cups.

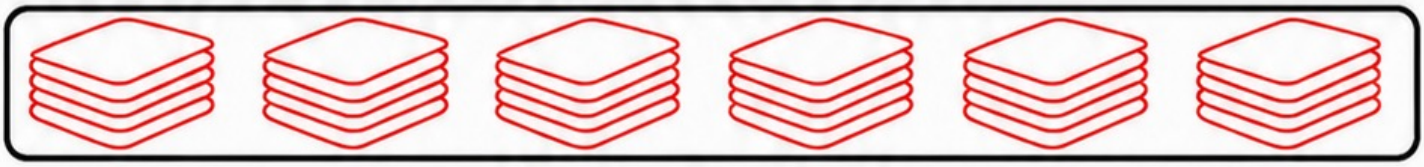
3. 16 biscuits are shared equally among 4 plates. How many on each plate?



16 ÷ 4 = 4

4 biscuits on each plate.

4. 24 cards are placed 4 in each pile. How many piles?



24 ÷ 4 = 6

6 piles.

Division Story Problems

Page 2 — Think and explain

Name: _____ Date: _____

1. Mia has 15 counters. Should she share among 3 bowls or make groups of 3? Explain how the questions are different.

2. Draw two different stories for 12 ÷ 3 = 4.

3. Ca toys pac d in groups of 4 with none left? Show why.

4. Write your own exact-division story using 20 objects.

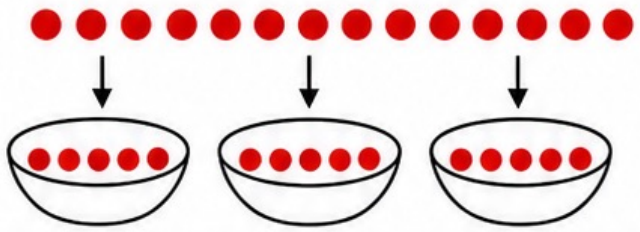
Division Story Problems

Page 2 — Think and explain

ANSWERS _____ Date: _____

1. Mia has 15 counters. Should she share among 3 bowls or make groups of 3? Explain how the questions are different.

Sharing among 3 finds how many in each bowl.
Groups of 3 finds how many bowls.

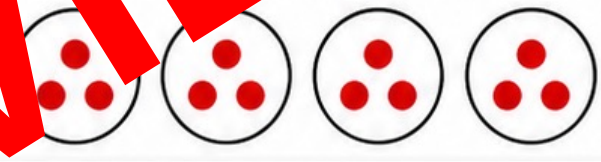


Sharing among 3 asks:
How many in each bowl?
Making groups of 3 asks:
How many groups (bowls) of 3?

2. Draw two different stories for 12 ÷ 3 = 4.

12 counters shared among 3 groups.
4 in each group.

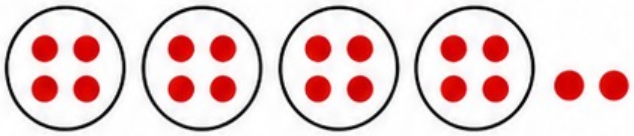
12 counters in 4 groups of 3.
3 in each group.



Sharing among 3 groups.
Find how many in each group.

Groups of 3.
Find how many groups.

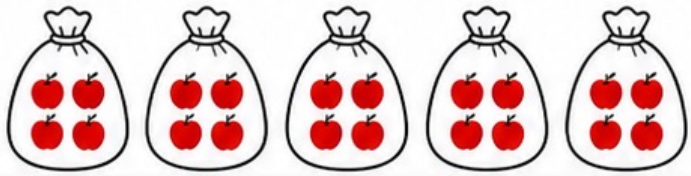
3. Can 18 counters be packed in groups of 4 with none left? Show why.



No. Four groups use 16 and 2 are left.

4. Write your own exact-division story using 20 objects.

20 apples are shared among 5 bags.
4 go in each bag.

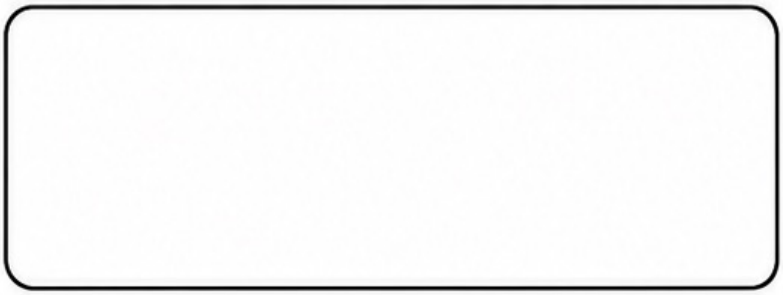


Picnic Packing Division Assessment

Page 1 — Model and solve

Name: _____ Date: _____

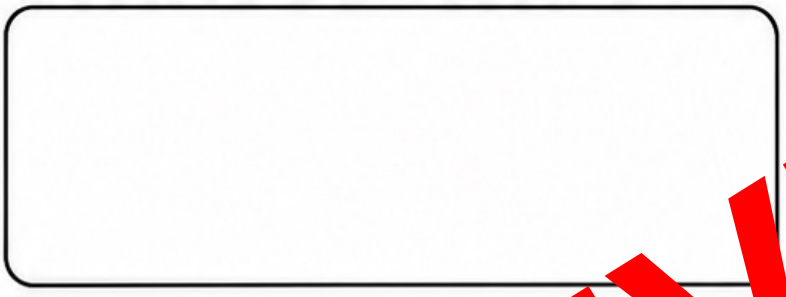
1. Share 12 sandwiches among 3 baskets.



____ ÷ ____ = ____

Answer: _____

2. Pack 20 juice boxes in groups of 5.



____ ÷ ____ = ____

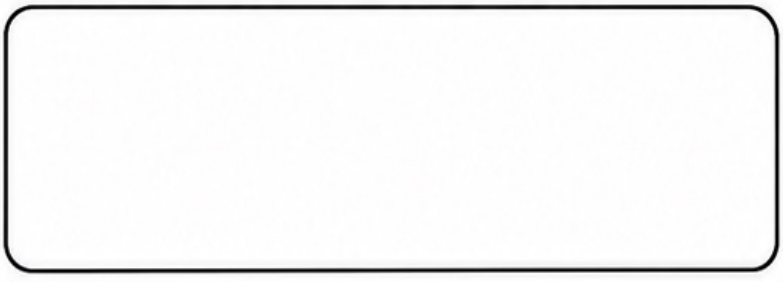
Answer: _____

3. Share 18 apples among 6 picnic rugs.

____ ÷ ____ = ____

Answer: _____

4. Pack 24 napkins in groups of 4.



____ ÷ ____ = ____

Answer: _____

5. Write SHARING or GROUPING beside each task.

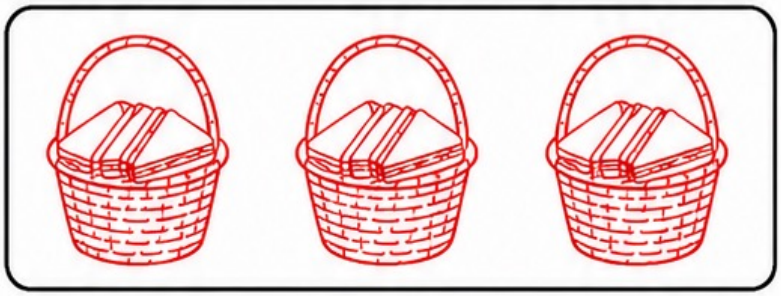
1. _____
2. _____
3. _____
4. _____

Picnic Packing Division Assessment

Page 1 — Model and solve

ANSWERS: _____ Date: _____

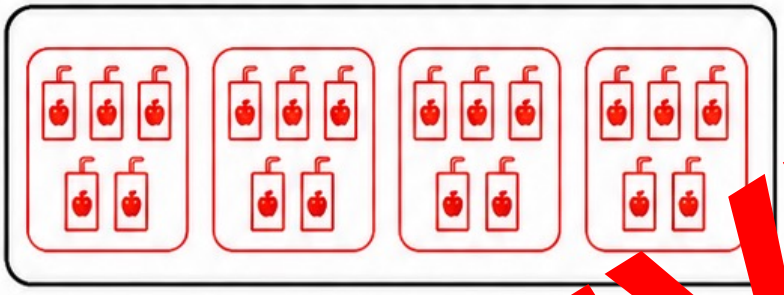
1. Share 12 sandwiches among 3 baskets.



12 ÷ 3 = 4

Answer: 4 sandwiches per basket.

2. Pack 20 juice boxes in groups of 5.



20 ÷ 5 = 4

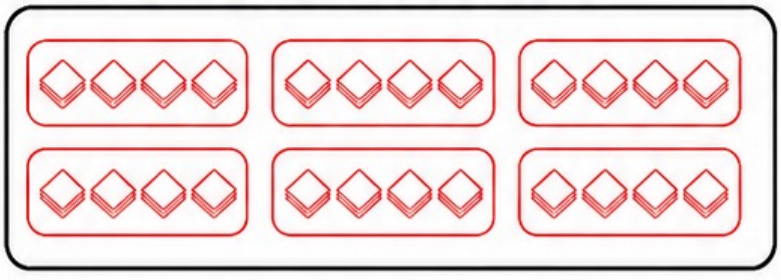
Answer: 4 groups.

3. Share 18 apples among 6 picnic rugs.

18 ÷ 6 = 3

Answer: 3 apples per rug.

4. Pack 24 napkins in groups of 4.



24 ÷ 4 = 6

Answer: 6 groups.

5. Write SHARING or GROUPING beside each task.

1. SHARING
2. GROUPING
3. SHARING
4. GROUPING

Picnic Packing Division Assessment

Page 2 — Explain and connect

Name: _____ Date: _____

6. Draw and solve: 16 strawberries shared among 4 plates.

_____ ÷ _____ = _____

7. Draw and solve: 15 cups packed in groups of

_____ ÷ _____ = _____ groups

8. Tw[illegible]rries [illegible] shared into 2 equal groups. How many are in each group? Expla[illegible]why the two groups are two equal parts of the collection.

_____

_____

_____

9. Leo says 18 ÷ 3 = 6 always means 6 in each group. Is Leo correct? Explain using sharing and grouping.

_____

_____

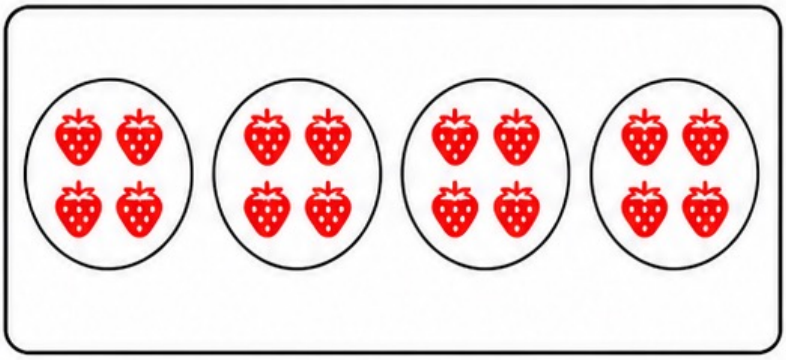
_____

Picnic Packing Division Assessment

Page 2 — Explain and connect

ANSWERS _____ Date: _____

6. Draw and solve: 16 strawberries shared among 4 plates.



16 ÷ 4 = 4

7. Draw and solve: 15 cups packed in groups of 3

15 ÷ 3 = 5 groups

8. Twenty cherries are shared into 2 equal groups. How many are in each group? Explain why the two groups are two equal parts of the collection.

20 ÷ 2 = 10. Each group has 10, so the collection is split into two equal parts.

9. Leo says 18 ÷ 3 = 6 always means 6 in each group. Is Leo correct? Explain using sharing and grouping.

No. In sharing, 6 can mean 6 in each group. In grouping, 6 can mean 6 groups.

Division Using Partitioning Rubric

Student: _____ **Date:** _____

Criteria	BEGINNING	DEVELOPING	ACHIEVING	CONFIDENT	EXCEEDING
Models equal groups	Needs help to make groups.	Makes groups with some errors.	Makes equal groups correctly.	Chooses an efficient model.	Creates and compares models.
Solves division facts	Needs help to solve.	Solves some facts.	Solves exact facts accurately.	Solves and checks facts.	Solves unfamiliar facts flexibly.
Records equations and labels	Records parts with help.	Records an incomplete fact.	Records and labels a correct fact.	Records facts clearly in context.	Links models, facts and meaning.
Explains sharing and grouping	Needs prompts to explain.	Names one division model.	Explains sharing and grouping.	Compares what the answer means.	Justifies and creates examples.

Teacher comment:

Division Using Partitioning

Learning Goal

We are learning to divide a collection in two ways.

I can:

- share into a known number of equal groups
- make groups of a known size
- write and explain a division fact

Key Words

divide – split a total i[illegible] equ[illegible] grou[illegible]

share – plac[illegible] o[illegible]tem in[illegible]ach gr[illegible] in turn

gr[illegible] – make [illegible] o[illegible]e same size

equ[illegible] – the sa[illegible]mount

[illegible] – how many altogether

Equal Groups and Equal Parts

Every group must have the same number.

Sharing 10 objects into 2 equal groups makes two equal parts of the collection.
Each part has 5.

Partitioning: Sharing

When the number of groups is known, find how many are in each group.

Ask how many does each group receive?

Worked Example: Sharing

12 strawberries are shared among 3 plates.
Give one strawberry to each plate until all are shared.

12 ÷ 3

Each plate receives 4 strawberries.

Your Turn: Sharing

16 counters are shared among 4 children.

Draw 4 equal groups.
How many counters does each child receive?
Write the division fact.

Sharing Answer

16 ÷ 4 =

Four equal groups each contain 4 counters.
The answer 4 means 4 counters for each child.

Equal Grouping

When the group size is kno[illegible] find h[illegible]v mar[illegible] groups can be made.

Ask: h[illegible]v many groups [illegible]is size are there?

Worked Example: Grouping

15 toy cars are packed in groups of
Make one complete group of 3 each time.

15 ÷ 3

There are 5 groups.

Your Turn: Grouping

20 blocks are packe[illegible]n gro[illegible]s of [illegible]

Draw g[illegible]ups [illegible]f 5.

[illegible]ow ma[illegible] groups [illegible]you make?

[illegible]rite the division fact.

Grouping Answer

20 ÷ 5 = 4 groups

Each of the 4 groups contains 5 blocks.
The answer 4 means 4 groups.

Compare the Meanings

18 shared among 3 groups → 6 in each group

18 arranged in groups of 3 → 6 groups

The fact is 18 ÷ 3 = 6 but the 6 answers a different question.

Read a Division Fact

24 ÷ 4

24 is [illegible] to [illegible].

4 te[illegible]ne numb[illegible]r of gro[illegible]r the group size.

6 tells the d[illegible]n each group or the number of groups.

Counter Challenge

Model both s ation

1. 24 c ters s d a ong 4 c ren
counters arra groups of 4

the answer 6 used differently?

Exact Groups

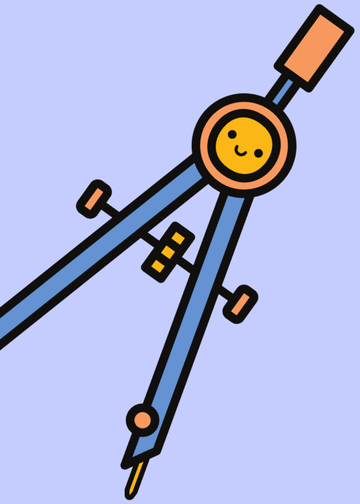
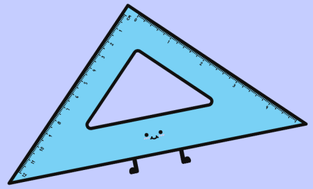
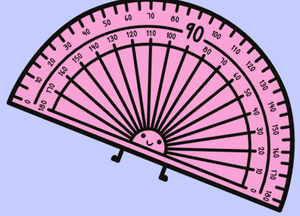
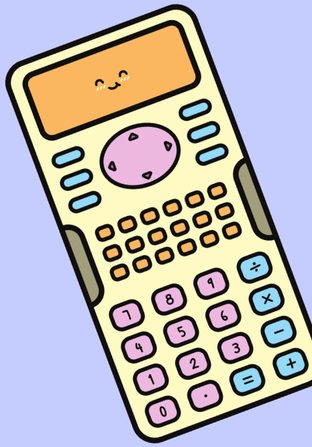
Can 18 objects make groups of 4 with none left?

4 + 4 + 4 + 4 = 16 with 2 left.

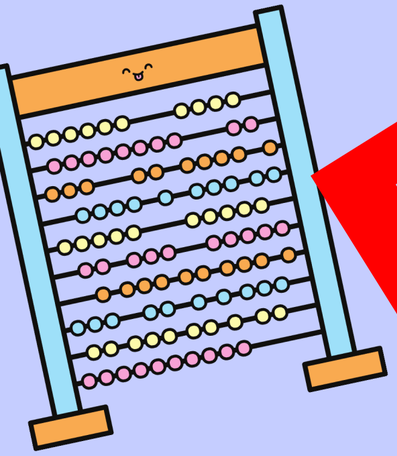
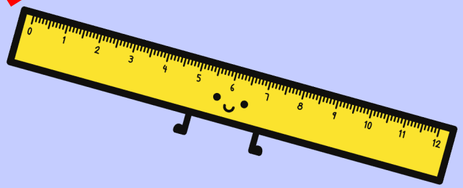
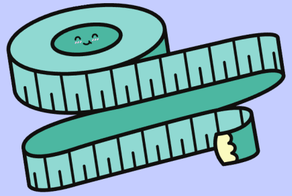
No. Choose a group size that is a factor of 18 for exact equal groups.

Review

1. Read the story.
2. Decide what is being grouped?
3. Make equal groups.
4. Write the answer in fact.
5. Explain what the answer means.

Well Done!


Division Using Partitioning Quiz

Question 1 – True or False

Equal groups must have the same number in each group.

TRUE or FALSE?

Answer 1

TRUE

Equal groups contain the same number in every group.

Question 2 – Multiple Choice

12 apples are shared among baskets.
How many apples are in each basket?

A. B. 4 C. 9 D. 15

Answer 2

B. 4

12 ÷ [illegible]

[illegible]ach basket receives 4 apples.

Question 3 - Short Answer

10 shells are s red among children.

Writ the divi n fact.

Answer 3

÷ 2 =

ach child receives 5 shells.

Question 4 – Multiple Choice

Which story is PA[illegible]ITIO[illegible]G?

A. [illegible] cou[illegible]s in g[illegible]ups of [illegible]

B. [illegible] counters shar[illegible]ng 4 children

C. [illegible]ms packed[illegible] per box

D. 20 items in groups of 5

Answer 4

B. 16 counters ared hong hildren

The number of grou is kno n, so we d how many are in each group.

Question 5 – True or False

18 counters can be arranged in groups of 4 with none left over.

TRUE or FALSE?

Answer 5

FALSE

Four groups of 4 use 16 counters, so 2 counters are left.

Question 6 - Short Answer

20 blocks are packed in groups of 5.

How many groups can be made?

Answer 6

20 ÷ 5 = 4 groups

Question 7 – Multiple Choice

Which equation matches 24 stick[illegible] sha[illegible] am[illegible] nds?

A. [illegible] ÷ 4 = [illegible]

B. 24 [illegible]

C. 24 ÷ 4 [illegible]

D. 4 ÷ 24 = 6

Answer 7

24 ÷ 4 = 6

Each friend receives 6 stickers.

Question 8 – True or False

16 objects arranged in groups of 2 make 8 groups.

TRUE or FALSE?

Answer 8

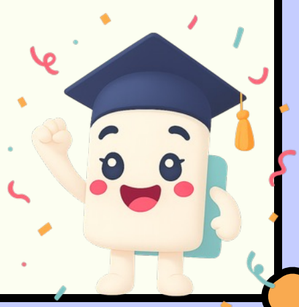
TRUE

16 ÷ 2 = 8 groups.

Question 9 – Multiple Choice

What is true about these statements?
12 shared among 4 and 12 arranged in groups of 4

A. Both answers are 3, but arrived at something different.
B. Both answers are 4.
C. Neither uses division.
D. Both have leftovers.



Answer 9

A. Both answers are 3, but 3 means something different.

It can mean 3 in each group or 3 groups.

Question 10 - Short Answer

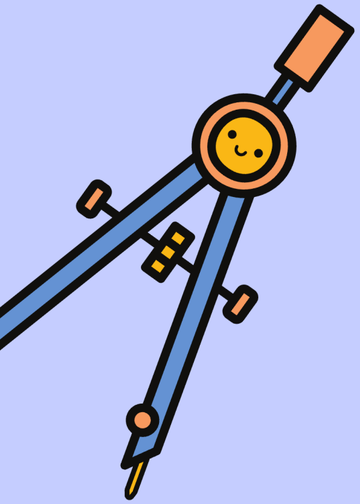
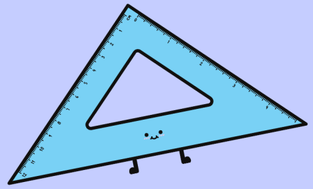
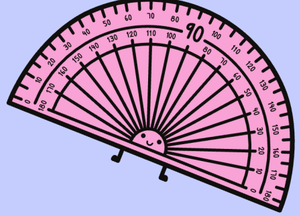
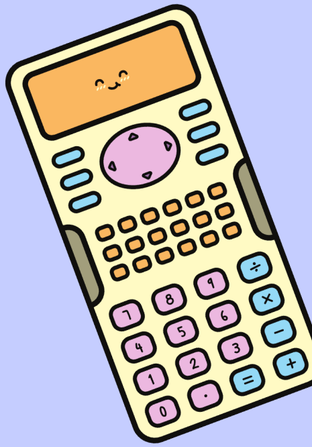
30 shells are shared among children.

How many shells does each child receive?
Write the division fact.

Answer 10

ells e ch

30 ÷ 5 =

Well Done!