Two Stories in One Division

Teacher		**Class**	Grade 3
Subject	Math	**Topic**	Division
Date		**Room**	
Lesson length	60 minutes	**Country**	United States

Students learn two meanings of division: shares and groups. They build and draw both meanings for 18 ÷ 3 and 56 ÷ 8.

Curriculum links

- Division can represent equal sharing or equal grouping. [1]
- Make sense of what the quotient means. Describe what the sharing arrangement shows. Describe what the grouping arrangement shows. [1]
- Describe in words/drawings a problem that illustrates a division situation. Use multiplication and division within 100 to solve problems. [1]

Learning objectives

- Students will interpret division as sharing into shares or making groups of equal size.
- Students will draw and describe sharing and grouping stories for facts within 100.
- Students will explain both meanings of 56 ÷ 8 = 7 in words and pictures.

Success criteria

- I can show 18 ÷ 3 as shares and as groups.
- I can tell what the quotient means in a story.
- I can write two stories for 56 ÷ 8 = 7.

What students already know

Hold up 10 fingers and share equally with a partner: how many each? Check they know fair means equal.

Key words

division	splitting a total into same-size parts [1]
equal	all the same in size or amount
share	one part when a total is split fairly [1]
group	a small set put together in one place
quotient	the answer found after splitting equally [1]

Materials

- small counters (at least 18 per pair)
- paper
- crayons or colored pencils
- rulers
- printed Worksheet Task A for each student

Before the lesson

- Print Worksheet Task A (page 1) and the template with 3 empty large circles on one side
- Count out 18 counters per pair plus a set of 12 for modeling
- Load slides 1-4, 7, 9-10, 12 and check projector

- printed drawing template with 3 large circles on one side
- slides 1-4, 7, 9-10, 12 and whiteboard
- Place paper, crayons or colored pencils and rulers on desks

Lesson outline

0–5 min **Starter** 5 min · Whole class

Hook students with fair sharing and introduce that one division can mean two things.

YOU DO

1. Show Slide 1: Sharing Equally! title: What does 56 ÷ 8 really mean?
2. Say the hook and show Slide 2: Lots to Share photo: A teacher has 12 pencils. She shares them all equally. What could each student get?
3. Invite turn and talk: How could we share 12 pencils with 3 students?
4. Take 2 quick ideas and keep both: shared into 3 shares or packed in groups of 3.

STUDENTS DO

1. Look at Slides 1-2 and listen to the hook.
2. Turn and talk with a partner about how 12 pencils could be shared fairly.
3. Share one idea with the class.

Say: Can one math sentence tell two different stories? Let's draw it and see! I have 12 pencils to share equally. We will find two ways to think about 12 divided by 3.

Ask: If 12 pencils are shared equally into 3 shares, how many in each share? (4 in each share, because 12 ÷ 3 = 4.) · If 12 pencils are packed in groups of 3, how many groups will we make? (4 groups, because groups of 3 from 12 makes 4.)

Check understanding: Show thumbs up if you hear two different questions: how many in each and how many groups. If unsure, use 12 counters and act out both.

Support: Hold up 12 real pencils and point to 3 students to make sharing visible. **Stretch:** Ask what would change if 12 pencils were packed in groups of 6 instead of 3.

Use: Slides 1-2

5–15 min **Teaching** 10 min · Whole class

Model both meanings of division with objects before drawings and symbols.

YOU DO

1. Show Slide 7: How to Show Division steps: Count the total objects. Choose shares or share size. Deal out one by one equally. Count to find quotient, the answer.
2. Count 12 counters, then deal one by one into 3 shares to show equal sharing [1].
3. Gather them back, then make groups of 3 to show equal grouping [1].
4. Show Slide 3: From Total to Share chain: 56 objects to share · Make 8 equal shares · Count 7 in each share · Write 56 ÷ 8 = 7 and Slide 4 mindmap for 56 ÷ 8.

STUDENTS DO

1. Watch dealing and count aloud to 12, then 1, 2, 3, 4 in each part.
2. Repeat: 12 divided by 3 equals 4, so 4 in each share, then 4 shares.
3. Point to total, shares, and quotient on Slide 4.

Say: Division tells how many in each share or how many equal shares. Division can represent equal sharing or equal grouping [1]. We count the total, deal out equally one by one, then count to find the quotient, the answer. We use objects first before drawings and symbols [1].

Worked example: 12 ÷ 3 = 4 as sharing: 12 total, make 3 equal shares, deal one by one, count 4 in each share, so 4 means number of objects in each share. 12 ÷ 3 = 4 as grouping: 12 total, make shares of 3 each, count 4 shares, so 4 means number of shares [1].

Ask: In the first way, what does the 4 in 12 ÷ 3 = 4 tell us? (The number in each share, 4 objects in each of the 3 shares.) · In the second way, what does the same 4 tell us? (The number of shares, 4 groups of 3.) · Why must each plate have the same number? (Because division means equal shares or equal groups [1].)

Check understanding: Students write 4 on whiteboards and hold up 3 fingers for 3 shares or pinch fingers to show groups of 3. Reteach with 6 counters into 2 shares if split.

Support: Slow the dealing to one counter at a time and keep a model group of 3 on the desk to copy. **Stretch:** Ask students to say the related multiplication fact 3 x 4 = 12 for the same picture [1].

Use: Slides 3-4, 7

15–30 min **Guided practice** 15 min · Pairs

Build both arrangements for 18 ÷ 3 with counters to see what the 6 means.

YOU DO

1. Show Slide 9: Your task: Make 18 counters as the total. Show 3 shares and shares of 3. Draw and write 18 ÷ 3 = 6. In pairs, build two stories for 18 ÷ 3 with counters.
2. Give each pair 18 counters and ask them to show 18 shared into 3 shares.
3. Ask them to rebuild the same 18 as shares of 3 and count the groups.
4. Circulate, ask what 6 means each time, and keep work within 100 [1].

STUDENTS DO

1. In pairs, deal 18 counters into 3 shares and record 6 in each share.
2. Rebuild 18 counters into groups of 3 and record 6 shares.
3. Practice saying: 18 divided by 3 equals 6, so 6 in each share or 6 shares.

Say: Make 18 counters as the total. First show 3 shares and count how many in each. Then start again and show shares of 3 and count how many shares. Tell your partner what the 6 means each time.

Ask: You shared 18 into 3 shares. What does the 6 mean? (6 objects in each share.) · You made shares of 3 from 18. What does the 6 mean now? (6 shares in all.)

Check understanding: Pairs hold up counters to show 6 in each of 3 plates, then 6 piles of 3. Fix unequal piles by dealing again one by one.

Support: Leave one correct share or one correct group of 3 built as a model to copy. **Stretch:** Ask pairs to predict and check 18 ÷ 6 both ways before drawing.

Use: Slide 9

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30–50 min **Main activity** 20 min · Pairs

Draw and label both meanings of the same division sentence 18 ÷ 3 = 6.

YOU DO

1. Hand out paper, crayons or colored pencils, rulers and Worksheet Task A.
2. Direct: on one half draw 18 dots shared into 3 circles, 6 in each; on the other half draw 18 dots in groups of 3, 6 groups total.
3. Model labeling each drawing with 6 in each share or 6 shares and coloring groups to show they are equal.
4. Collect drawings and prompt early finishers to try the stretch.

STUDENTS DO

1. Fold paper in half and draw both pictures for 18 ÷ 3 = 6 with dots and circles.
2. Label each side 6 in each share or 6 shares and color equal groups.
3. In pairs, tell two stories for 18 ÷ 3 and check drawings match counters.

Say: You will draw both meanings of the same division sentence. Use a ruler to make neat circles. Draw 18 ÷ 3 = 6 as sharing and as grouping. Division within 100 can be shown with pictures of equal sharing or equal grouping [1].

Worked example: Left side: draw 3 large circles, place 18 dots one by one, count 6 in each, label 6 in each share, write 18 ÷ 3 = 6. Right side: make piles of 3 dots until 18 is used, count 1, 2, 3, 4, 5, 6 piles, label 6 shares, write 18 ÷ 3 = 6.

Ask: How does your left drawing show equal sharing? (18 dots split into 3 equal circles with 6 in each.) · How does your right drawing show equal grouping? (18 dots in piles of 3 with 6 piles counted.)

Check understanding: Walk with checklist: total 18, equal parts, correct label. Have pairs fix by recounting dots if not equal.

Support: Provide a template with 3 empty large circles on one side and empty small groups of 3 dots started on the other. **Stretch:** Students pick 28 ÷ 7 and create both drawings, then write which meaning they like best and why.

Use: Worksheet Task A

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50–60 min **Plenary** 10 min · Whole class

Connect learning to 56 ÷ 8 and check that students can interpret the quotient.

YOU DO

1. Show Slide 10: Big idea statement: Division tells how many in each share or how many equal shares.
2. Tell two stories for 56 ÷ 8 = 7: 56 shared into 8 shares means 7 in each; 56 in shares of 8 means 7 shares [1].
3. Show Slide 12: True or false?: 56 ÷ 8 = 7 can mean 8 shares with 7 each. Total 56 split into 8 equal shares. 56 ÷ 8 = 7 can mean shares of 8 with 7 shares. Grouping 56 into 8s makes 7 groups.
4. Vote true or false and give exit tickets.

STUDENTS DO

1. Say chorally: 56 divided by 8 equals 7, so 7 in each share, then 7 groups of 8.
2. Vote true or false for Slide 12 and explain in one sentence.
3. Answer 3 exit questions on paper.

Say: Division tells how many in each share or how many equal shares. For 56 ÷ 8 = 7, 7 can mean 7 in each of 8 shares, or 7 shares of 8. Listen to the story words into 8 shares and groups of 8 to know which.

Worked example: Sharing story: 56 crayons shared equally into 8 boxes is 7 in each box, so 7 is the number in each share. Grouping story: 56 crayons packed in boxes of 8 makes 7 boxes, so 7 is the number of shares [1].

Ask: 56 ÷ 8 = 7 as sharing into 8 shares: what does 7 mean? (7 objects in each share.) · 56 ÷ 8 = 7 as groups of 8: what does 7 mean? (7 shares or groups in all.)

Check understanding: Use Slide 12 votes plus exit tickets. If many mix meanings, reread story words into 8 shares versus groups of 8 with counters.

Support: Act out 56 ÷ 8 with 16 dots and 4 shares first, then repeat words for 56 and 8. **Stretch:** Ask students to change one word to turn a 56 ÷ 8 sharing story into a grouping story.

Use: Slides 10, 12

Common mistakes

Mistake	How to spot it	How to fix it
Thinking the quotient always means size of share, not number of shares	Says 18 ÷ 3 = 6 always means 6 in each, even for groups of 3	Match drawing to story words: into 3 shares means 6 in each; groups of 3 means 6 shares [1].
Making unequal shares or groups when dealing	Circles have 5, 6, 7 or piles have 2, 3, 4	Deal one by one equally and recount each part to prove equal [1].
Mixing up number of shares and size of share in 56 ÷ 8	Says 56 in groups of 8 means 8 in each group	Underline into 8 shares versus groups of 8 and ask: are we finding how many in each or how many groups.

Support

- Provide a template with 3 empty large circles on one side and empty small groups of 3 dots started on the other.

Stretch

- Students pick 28 ÷ 7 and create both drawings, then write which meaning they like best and why.

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- Work with 12 counters and 3 shares first, then build to 18 ÷ 3 and 56 ÷ 8.
- Write the related multiplication fact 8 x 7 = 56 for a 56 ÷ 8 story [1].

For the LSE or teaching assistant

Stay with guided and main activity pairs needing equal dealing. Prompt counting one by one, help label 6 in each share versus 6 shares, and pre-teach into versus groups of.

Check for understanding

Question	Answer
56 crayons are shared equally into 8 boxes. Write 56 ÷ 8 = 7. What does 7 mean?	7 crayons in each share/box.
56 crayons are packed in boxes of 8. Write 56 ÷ 8 = 7. What does 7 mean?	7 boxes/shares in all.
True or false: 20 ÷ 5 = 4 can mean 5 shares with 4 each and can also mean shares of 5 with 4 shares?	True - 4 can be number in each share or number of shares.

Homework

Write one sharing story and one grouping story for 20 ÷ 4 = 5 and tell what 5 means each time.

Sources

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