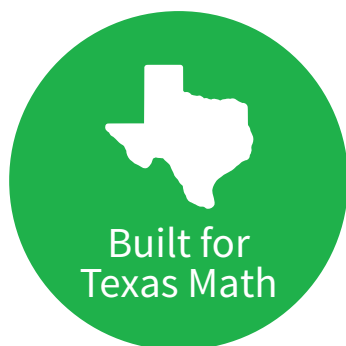


Teacher Guide Sample

Made for Teachers, by Teachers



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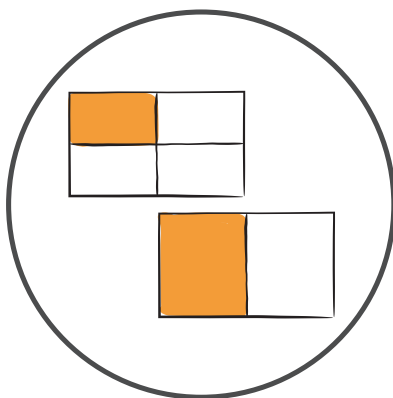
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Fractions

Scope Introduction

SCOPE SUMMARY



Students use their knowledge of two-dimensional shapes to learn how to partition them into two and four fair shares or equal parts (halves and fourths). Fraction notation is not expected at this grade level. The focus in first grade is to partition accurately and describe each partition by using words. Students explore various examples and nonexamples of halves and fourths by paying close attention to whether the pieces of each shape are equal in size.

Student Expectations

1.6G

- Partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words.

1.6H

- Identify examples and non-examples of halves and fourths.

VERTICAL ALIGNMENT



Background Knowledge

In previous grades, students explore two-dimensional shapes. They should be able to identify these shapes and describe their attributes. This serves as the foundation as they begin to explore fractions. Students should have prior knowledge of how to share a whole or a specific amount. They could have practiced this inside or outside of the classroom. Students should be able to share an amount physically by using objects.

Future Expectations

In second grade, students continue building their knowledge of fractions by including eighths in addition to halves and fourths. They recognize that halves, fourths, and eighths may be shown to have equal areas but do not have congruent parts. Students learn to count fractional parts beyond one whole by using concrete models, and they recognize the relationship between the number of equal parts and the size of the parts. In second grade, just as in first grade, students name fractions using words, not fraction notation.

ENGAGE ACTIVITIES



Accessing Prior Knowledge

In this activity, students independently identify and name two-dimensional shapes such as rectangles, circles, squares, and triangles, using physical shape cutouts. They match these to Name Posters displayed around the classroom, engage in peer discussions to verify their choices, and participate in a guided class discussion that explores shape attributes. This process helps assess and enhance their understanding of geometric concepts, preparing them for further lessons.

If your students are struggling with previously taught concepts, use the Foundation Builder activity in this scope to reinforce ideas presented in the APK.

Hook

In this activity, students explore division and equality by modeling how to share a waffle equally among four friends. Initially, they discuss related mathematical concepts and apply this to the context of sharing a waffle, asking questions about quantity and fairness. After exploring these concepts further in related activities, they revisit the problem, drawing their solutions on handouts and describing the equal parts they created. This practical application helps students understand fractions and division in everyday scenarios.



Explore 1

Partition Shapes

In this activity, students learn to partition shapes into equal parts using practical scenarios involving sharing a “cake” among dogs. Initially, they experiment with dividing the shape into two equal parts, discussing various methods and outcomes. Later, they extend their understanding by partitioning the shape for four shares. Using dry-erase markers on laminated shape cutouts, students explore and document different partitioning strategies in their journals, enhancing their understanding of fractions and division through group discussions and hands-on manipulation.

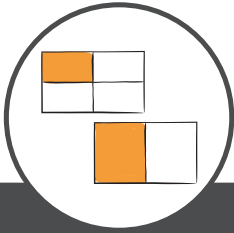
Explore 2

Examples of Halves and Fourths

In this activity, students work in pairs to identify and differentiate between examples and nonexamples of halves and fourths using crackers. They are tasked with snapping the crackers into equal parts to simulate fair sharing for a daycare snack scenario. Through hands-on manipulation, students visually and physically sort the crackers, enhancing their understanding of fractions. They document their findings in a Student Journal, which includes drawing representations of both successful and unsuccessful partitions. The session culminates with a class discussion to reinforce their learning.

Notes

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Fractions

Accessing Prior Knowledge

ACTIVITY PREPARATION



Students name various two-dimensional shapes whether they are different sizes and whether they are in the standard position or a rotated position.

Materials

Printed

- 1 Shape Set (per class)
- 1 Name Posters (per class)

Preparation

- Plan to have students work independently to complete this activity.
- Print and cut out the Shape Set. Each student needs one shape from the document.
- Hang the Name Posters around the classroom.

PROCEDURE AND FACILITATION



FACILITATION TIP

Print the Shape Set (18 shape cards) on heavier paper to make them easier to handle.

FACILITATION TIP

In addition to hanging the Name Posters around the classroom, project them clearly under a document camera. Consider color coding the words/cards to support struggling readers.

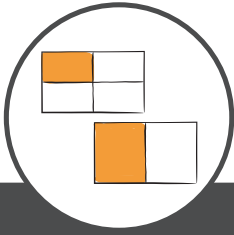
1. Give each student a shape, and ask students to take a moment to study their shapes.
2. Direct students' attention to the Name Posters hanging around the classroom. Walk over to each one, and read the poster to the class.
3. Tell students to look at their shapes. Each student needs to think about the attributes of their shape and recall the name. There are four possibilities:
 - a. Rectangle
 - b. Circle
 - c. Square
 - d. Triangle
4. Direct students to walk to the Name Poster that correctly names their shapes when you say, "Go."
5. Encourage students to show their shapes to partners to see if the partners agree that the students are with the correct names.

Notes



- To support student collaboration, project some selected shapes one at a time and encourage students to share what they notice with partners and then whole group.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Fractions

Hook: Let's Share a Waffle!

ACTIVITY PREPARATION



Students model equally sharing a waffle and describe how they shared it.

Materials

Printed

- 1 Student Handout (per student)

Reusable

- 1 Phenomena (per class)

Preparation

- Plan to show the Phenomena.
- Part II
 - Print the Student Handout for each student.

PROCEDURE AND FACILITATION



FACILITATION TIP

Be prepared for students to respond to the waffle in the phenomena video. After addressing allergies and other food issues, consider sharing some waffles with student before or after this Hook.

Part I: Pre-Explore

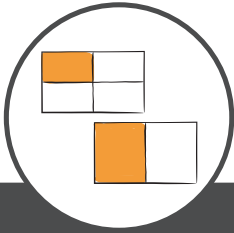
1. Introduce this activity toward the beginning of the scope. The class will revisit the activity and solve the original problem after students have completed the corresponding Explore activities.
2. Show the Phenomena. Ask students the following questions: *What do you notice? Where can you see math in this situation?* Allow students to share all ideas.
3. Explain the scenario to the class: *Who does not love waffles? Four friends were sharing a waffle. They wanted to make sure that they each had an equal amount. How much of the waffle did each friend get? How can they make sure that each share is equal?*
4. Allow the students to ask questions and clarify the context as needed. Encourage them to share their thoughts and experiences with the class using the following questions:
 - a. Have you ever eaten a waffle?
 - b. What types of toppings can you add to a waffle?
 - c. What does it mean to share something?
 - d. What other types of food can you share with friends?
5. Discuss the following questions with the class:
 - a. **DOK-1** What information do we know? *Four friends are sharing a waffle, and they want equal amounts.*
 - b. **DOK-1** What information do we need to find out? *How much of the waffle does each friend get? How can they make sure that each share is equal?*
6. Ask students to turn and talk to share how they would solve the problem. They are not required to solve it yet.
7. Move on to complete the Explore activities.



1. After students have completed the Explore activities for this topic, show the Phenomena again, and repeat the scenario.
2. Discuss the following questions with the class:
 - a. **DOK-1** What information do we know? *Four friends are sharing a waffle, and they want equal amounts.*
 - b. **DOK-1** What information do we need to find out? How much of the waffle does each friend get? How can they make sure that each share is equal?
3. Give each student a Student Handout. Instruct students to draw how they will share the waffle equally among the 4 friends. Ask students to fill in the sentence stem to describe their equal shares.
4. Discuss the following questions with the class:
 - a. **DOK-3** How did you partition the waffle among the four friends? *I split it into 4 equal shares.*
 - b. **DOK-3** How would you describe the share that one friend would receive? *One of four equal pieces; one-fourth; a fourth of; one quarter; a quarter of*
 - c. **DOK-3** What are some ways we can make sure that we share the whole waffle equally? *If we cut the waffle and stack the shares on top of each other, each share should be the same size.*
5. As an extension, challenge students to draw another waffle shaped like a square or rectangle and to partition the waffle to share with four friends.

Be prepared for a wide variety of ways to divide the waffle equally for four friends. Some students may divide the waffle into several very small pieces, others might split it in half for partners to share.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Fractions

Explore 1: Partition Shapes

ACTIVITY PREPARATION



Students explore how to partition different shapes into two and four fair shares or equal parts.

Mathematical Process Standards

- **(A)** Apply mathematics to problems arising in everyday life, society, and the workplace.
- **(C)** Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.
- **(G)** Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

Materials

Printed

- 1 Student Journal (per student)
- 1 Shape Cutouts (per group)
- 1 Exit Ticket (per student)

Reusable

- 1 Dry-erase marker (per student)
- 1 Black marker (per student)
- 8 Plastic sheet protectors (per group)

Consumable

- 1 Piece of construction paper cut vertically into 2 rectangular halves (per student)

Preparation

- Plan to have students work in groups of 3 to 4 to complete this activity.
- Print the Shape Cutouts for each group. Laminate them, or place in plastic sheet protectors for use with a dry-erase marker.
- Cut construction paper vertically into 2 rectangular halves. Each student will need 2 pieces.
- Print the Student Journal and an Exit Ticket for each student.
- For students who need more support in recalling information, see our Fraction Circles Supplemental Aids element in the Intervention section.

PROCEDURE AND FACILITATION



Part I

1. Read the following scenario to the class: *Today is a special day. It is both of my dogs' birthday. You heard that right. My two dogs have the same birthday. For their birthday, I need you to help me design a dog-friendly cake for them. Just remember, I will have to divide it into two shares, and those shares have to be equal. We do not want either one of the dogs to get upset if the other one gets more cake. Can you help me?*
2. Help students access the task by asking the following guiding questions:
 - a. Do you have any pets? What kinds of pets do you have?
 - b. How do you celebrate your birthday or your pet's birthday?
 - c. What do you think it means to be "dog-friendly"?
 - d. What does it mean to divide into equal shares?
 - e. What do you already know about shapes and fractions?



Home



Engage



Explore



Explain



Elaborate



Evaluate



Intervention



Acceleration

3. Distribute a half-sheet of construction paper and a marker to each student.
4. Explain to students that the half sheet represents the cake. Allow students a few moments to discover the manipulative and experience how it works with their group.
5. Instruct students to decide how they will partition the cake into two fair shares or equal parts. Encourage students to discuss and explore how many different ways of partitioning with their group. Once they have decided how to partition, ask students to fold the construction paper and draw a line where the cake needs to be divided.
6. Monitor and talk with students as needed to check for understanding using the following guiding questions:
 - a. **DOK-2** How can you make sure that your cake is partitioned so that it is fair, or equal, for both dogs? *Answers will vary. The shapes are the same size and same shape. When we fold the paper, the shapes are the same size.*
 - b. **DOK-2** Is there only one way to partition the cake into two fair shares? *No, you can fold the paper in two different ways.*
 - c. **DOK-1** What do we call the parts of the whole when we partition them into 2 equal parts? *Halves, one-half*
7. Give each student a Student Journal and ask students to record how they partitioned their cake into two fair shares.
8. Invite students to look at the cake again by providing a new half-sheet of construction paper.
9. Read the following scenario to the class: *Oh no! I forgot. Each dog gets to invite a friend, so there will be four dogs and each dog needs a piece of cake. Can you help me decide how to divide the cake into four fair shares or equal parts?*
10. Instruct students to decide how they will partition the cake into four fair shares or equal parts. Encourage students to discuss and explore how many different ways of partitioning with their group. Once they have decided how to partition, ask students to fold the construction paper and draw a line where the cake needs to be divided.
11. Ask students to share how they partitioned the cake into four equal parts with their group. Students record their partition on the Student Journal.
12. After Part I, invite the class to a Math Chat to share their observations and learning.

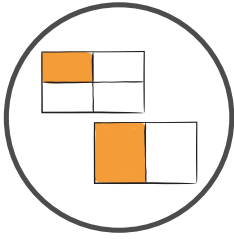
FACILITATION TIP

Some students may need to be guided step by step in order to fold the papers into two equivalent parts.

FACILITATION TIP

Some students will need step by step guidance to fold accurately. Model how to match the corners.

Notes



Fractions

Explore 1: Partition Shapes

FACILITATION TIP

Print the Shape Cut-outs on different colors to help identify them quickly while students are sorting. However, clarify that they are not to sort using color as a characteristic.

FACILITATION TIP

When challenging student to identify the shapes that can be halved, consider that some students may fold the shapes.

Math Chat

- **DOK-3** Is there more than one correct way to make sure each dog gets an equal share? *Yes, you can fold it in different ways: horizontally, diagonally, or vertically.*
- **DOK-3** How do you know the dogs are each getting an equal share? *The shapes look the same when you fold them; the shapes are the same size and same shape.*
- **DOK-1** What are some words you can use when describing something that is partitioned into four equal parts? *We all get the same; we all get a fourth; each person gets one-fourth of what we are sharing; or each person gets a fourth of or a quarter of.*
- **DOK-4** What are some ways you could test to see if you partitioned your cake correctly into quarters or four equal parts? *Cut the shapes out, put the shapes on top of each other, look at the shapes and see if they are the same size and shape.*

Part II

1. Provide each group with a set of Shape Cutouts and dry-erase markers.
2. Encourage students to look at the shapes provided and talk with their group about how they can divide the shapes into two equal parts. Ask students to explore how they would partition a shape into 2 equal parts using the dry-erase marker.
3. Instruct students to record how they partitioned the shapes on the Student Journal.
4. Challenge students to sort the shapes by those that can be divided in half in more than one way and those that can only be partitioned into two halves using a single line as the option.
5. Monitor and talk with students as needed to check for understanding using the following guiding questions:
 - a. **DOK-2** How many different ways can this shape be partitioned into halves? *Answers will vary. This hexagon can be divided horizontally, vertically, and diagonally both ways.*
 - b. **DOK-2** How can you check to see if the halves are equal? What are some different strategies you can use? *Answers will vary. Folding it, drawing a line to see if both halves are the same, cutting it, seeing if both shapes look the same/are alike.*
 - c. **DOK-3** Why can you only partition this shape into two equal halves using one line? How can you double-check yourself? What is another way you could check your answer? *Answers will vary. You cannot fold it/draw on it/or cut it to have two equal shapes, or two shapes that look alike or are the same. You can check by drawing the lines/ folding/cutting to see if the shapes are the same.*
6. Encourage students to see if any of the shapes can be partitioned into four equal parts, also known as fourths or quarters. Ask students to circle the shapes that can be partitioned in four fair shares on the Student Journal.
7. Ask students to share their strategies, and encourage students to ask each other questions and make connections. Encourage students to notice the similarities and differences between the processes used to partition and identify equal parts.
8. After Part II, invite the class to a Math Chat to share their observations and learning.

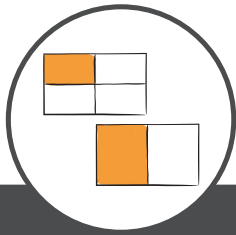


- **DOK-3** What do you notice about the shapes that can be divided into fourths? **They are the same shapes we could divide into halves in more than one way. Other students may notice that there are five shapes you can divide into fourths and 3 you can only divide into halves.**
- **DOK-2** What is a new word we learned for something that can be partitioned into two equal parts? **Halves, half of**
- **DOK-2** What is the new vocabulary we learned for something that can be shared with four people or partitioned into four equal-sized parts? **Fourths, a fourth of, quarters, a quarter of**
- **DOK-3** Can all the shapes we looked at today be partitioned into halves? How do you know? **Yes. We partitioned/cut the shapes and they were the same size.**
- **DOK-3** Can all the shapes we looked at be partitioned into fourths? Why not? **No, some shapes can only be folded in half or cut in half. You cannot make more than two shapes that look alike, look the same, or are equal.**
- **DOK-3** What did you notice about the shapes that could be divided into halves and fourths? **The same shapes that could be divided into fourths had more than one way to divide them into halves. The same number of shapes can be divided into fourths as divided into halves in more than one way.**

Gather student responses for the Math Chat questions about the new words and post for students to refer to during discussions.

1. Have students complete the Exit Ticket to formatively assess their understanding of the concept.
2. Complete the Anchor Chart as a class.
3. Have each student complete their Interactive Notebook.

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Fractions

Explore 2: Examples of Halves and Fourths

ACTIVITY PREPARATION



Students identify examples and nonexamples of halves and fourths.

Mathematical Process Standards

- **(B)** Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
- **(D)** Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.
- **(E)** Create and use representations to organize, record, and communicate mathematical ideas: Students create representations of fractions using real-world objects, drawings, or models to clearly communicate the attributes of fractions.
- **(F)** Analyze mathematical relationships to connect and communicate mathematical ideas.

Materials

Printed

- 1 Student Journal (per student)
- 1 Exit Ticket (per student)

Consumable

- 10 Different crackers (per pair)
- 1 Paper plate (per pair)

Preparation

- Plan to have students work with partners to complete this activity.
- Prepare 10 different crackers on a paper plate for each pair. Make sure some crackers are easily divided and some are not easily divided into halves or fourths.
- Print the Student Journal and an Exit Ticket for each student.
- For students who need more support in recalling information, see our Fraction Circles Supplemental Aids element in the Intervention section.

PROCEDURE AND FACILITATION



FACILITATION TIP

Print and project this scenario. Read it aloud with students and guide them to the key words: two, four, fair, equal.

FACILITATION TIP

Some students may be very curious about the crackers. Consider allergies/ any food issues, and be prepared to provide samples before or after this Explore.

1. Read the following scenario to the class: *The daycare down the street needs our help today. It is snack time and the kids are hungry. The daycare staff needs us to snap the snack crackers into two and four fair shares before handing them out to the kids. If shares are not equal, we have to throw the crackers away. Can we help the daycare staff prepare snacks for the kids?*
2. Help students access the task by asking the following guiding questions:
 - a. What do you picture in your mind when you think of a daycare?
 - b. Have you ever been to a daycare? What was it like?
 - c. What types of snacks do you like to eat?
 - d. What do you already know about halves and fourths that could help you prepare the crackers?
3. Direct students' attention to the crackers on the plate. Allow students a few moments to discover the manipulatives and experience how they work with their partner. Remind students to wait until given directions before breaking the crackers.
4. Instruct students to work with their partner to snap the crackers into two and four equal parts. Encourage students to sort the crackers into two piles on their plate: examples and nonexamples.



Home



Engage



Explore



Explain



Elaborate



Evaluate



Intervention



Acceleration

5. Monitor and talk with students as needed to check for understanding using the following guiding questions:
 - a. **DOK-3** Why did you place these cracker parts onto this side of the plate? *Answers will vary. This cracker snapped into equal parts. This cracker did not snap into equal parts.*
 - b. **DOK-3** What is it important to remember when we partition shapes into equal parts? *Answers will vary. They are all the same size and same shape; they are equal parts.*
6. Give each student a Student Journal. Ask students to draw a picture of a cracker that was a good example of halves and fourths. Then have students draw a picture of a cracker that was not a good example of halves and fourths.
7. After students have completed the Student Journal, bring the class together as a whole group.
8. Ask students to share their strategies and encourage students to ask each other questions and make connections. Encourage students to notice the similarities and differences between the examples and nonexamples of halves and fourths.
9. After the Explore, invite the class to a Math Chat to share their observations and learning.

Math Chat

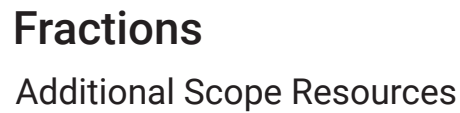
- o **DOK-3** Look at the shapes that are halves. Can these shapes be divided into fourths as well? *Answers will vary. Yes, the rectangles and squares can be divided into 4 equal parts.*
- o **DOK-3** How do you know a partitioned shape is an example of halves or fourths? *The parts are equal size or shape.*
- o **DOK-3** How do you know a partitioned shape is not an example of halves or fourths? *The parts are not equal size or shape.*
- o **DOK-1** What do we call the parts when they are partitioned into 2 equal parts? *Halves, half, half of*
- o **DOK-1** What do we call the parts when they are partitioned into 4 equal parts? *Fourths, a fourth of, quarters*
- o **DOK-4** When might you need to look for examples and nonexamples of halves and fourths outside of school? *When I am helping my mom make a cake, we want an example of half a cup of milk. If it is a nonexample, we need to pour more milk in or pour some milk back into the container.*

Post-Explore

1. Have students complete the Exit Ticket to formatively assess their understanding of the concept.
2. Complete the Anchor Chart as a class.
3. Have each student complete their Interactive Notebook.
4. Return to the Hook and instruct students to use their newly acquired skills to successfully complete the activity.

FACILITATION TIP

Consider differentiating Explore 2 Exit Ticket for struggling students who might find it easier to circle only examples/non-examples of one benchmark fraction at a time.



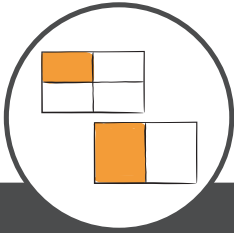
★ Can be done independently

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Fractions

Intervention and Assessment

STUDENT INTERVENTION



Depending on available time and your teaching style, use the resources provided in our Explain, Elaborate, Intervention, and Acceleration sections of this scope to move forward. Use the space below to organize next steps while keeping the needs of your students in mind. Some suggested resources have been listed. (Look online to see the full menu.)

	Resources	Students	Notes & Comments
Students who are still acquiring the concept and need remediation	<ul style="list-style-type: none"><input type="checkbox"/> Fluency Builder<input type="checkbox"/> Small-Group Intervention		
Students who are approaching mastery and need review	<ul style="list-style-type: none"><input type="checkbox"/> Career Connections<input type="checkbox"/> Interactive Practice		
Students who have mastered the concept and need extension	<ul style="list-style-type: none"><input type="checkbox"/> Problem-Based Task<input type="checkbox"/> Math Today<input type="checkbox"/> Create Your Own		



Home



Engage



Explore



Explain



Elaborate



Evaluate



Intervention



Acceleration



ASSESSMENT PLANNER

Evaluate Resources

- ☐ Observation Checklist
- ☐ Show-and-Tell
- ☐ Skills Quiz
- ☐ Technology-Enhanced Questions
- ☐ Heat Map

Use this template to decide how to assess your students for concept mastery. Depending on the format of the assessment, you can identify prompts and intended responses that would measure student mastery of the expectation. See the beginning of this scope to identify standards and grade-level expectations.

Fundamental Questions

What prompts will be used?

What does mastery look like?

I can partition a two-dimensional shape into two and four fair shares or equal parts.

I can describe two and four fair shares or equal parts by using words such as halves and fourths.

I can identify examples and nonexamples of halves and fourths.



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