FREE STARTER

GRADES 4–6

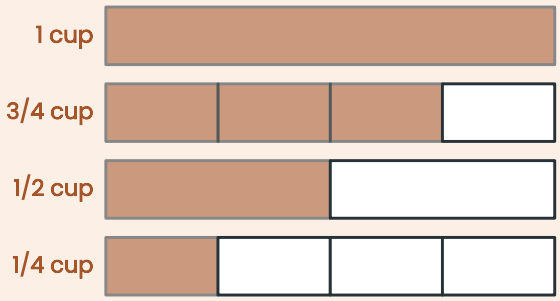
Recipe Fractions & Measurement Lab: The Lantern Lane Test Kitchen

6 activities and their recipe cards from the Lantern Lane Test Kitchen, each with a worked answer.

RECIPE CARD: BISCUIT BASKET

Makes	Flour	Milk
12 biscuits	1 7/8 cups	3/4 cup

CUPS, DRAWN TO SCALE



HOW TO USE

1. Read the recipe card that opens the case.
2. Use the fraction models and measuring tools on the page.
3. Show your thinking in the work boxes.
4. Try the new problem at the bottom of the page.

6 activities • 3 answer pages • From the 24-activity collection

15 US Letter pages • Print at 100% / Actual Size

Original Bobotemp educational printable • Fictional names, places and prices

RECIPE CARD

Case 1: Biscuit Basket

Case question: How do the scoops and the milk change when the kitchen makes more biscuits?

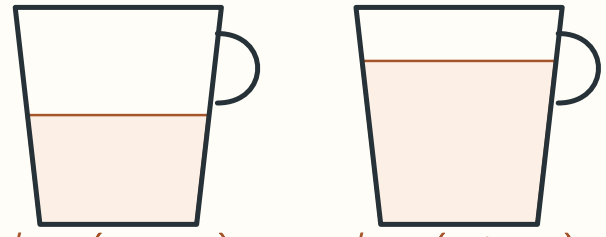
SMALL BASE CARD

Line	Amount
Yield	8 biscuits
Flour	1 1/4 cups
Milk	1/2 cup

MAIN BISCUIT BASKET CARD

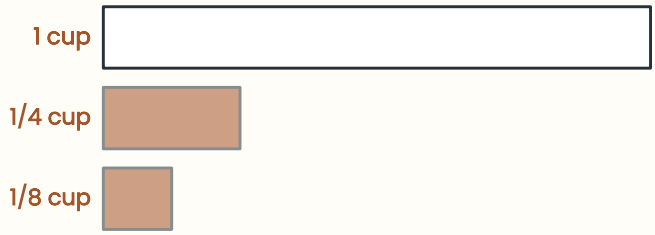
Line	Amount
Yield	12 biscuits
Flour	1 7/8 cups
Milk	3/4 cup

MILK LINES

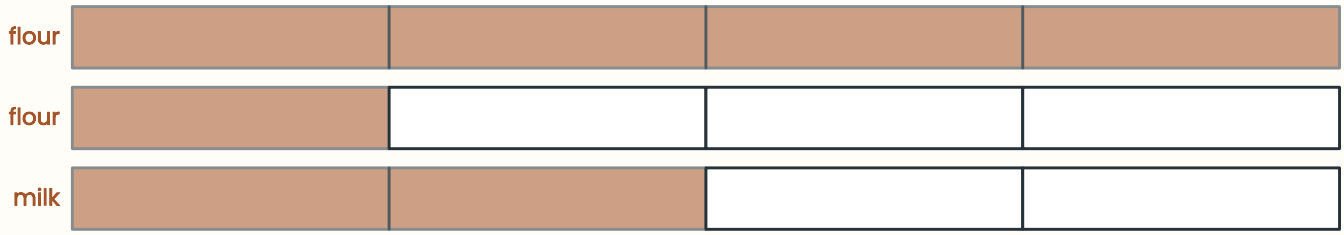


1/2 cup (base card) 3/4 cup (main card)

SCOOPS ON THE SHELF, TO SCALE



SMALL BASE CARD IN QUARTER-CUPS



- [ ] I can name each line and its amount.
- [ ] I compared the yields before I scaled anything.

FICTIONAL RECIPE

Invented for math practice in the Lantern Lane Test Kitchen. It is not a real recipe, and nothing on this card is meant to be cooked.

Name _____ Date _____

Case 1 Biscuit Basket: Scoop Count

LEVEL 1 ●○○

Use the cup model to count how many small scoops make the needed amount.

The Biscuit Basket card asks for 3/4 cup of milk. The only clean scoop is a 1/4 cup. How many full 1/4-cup scoops are needed?

CUP MODEL TO SHADE, AND THE SCOOP TO THE SAME SCALE

cup	1/4	1/4	1/4	1/4
scoop	1/4			

EVIDENCE TO USE

- Case 1: Biscuit Basket (fictional quantities)
- Needed: 3/4 cup milk
- Tool: one 1/4-cup scoop
- Cup model: 1 cup split into 4 equal quarter-cup parts, none shaded yet
- Each part = 1/4 cup

1. Shade the cup model to show 3/4 cup.

2. Count the quarter-cup parts you shaded.

3. Write a division sentence that matches your count.

TRY IT • The same card's flour line says 1 7/8 cups. How many 1/8-cup scoops is that?

Name _____ Date _____

Case 1 Biscuit Basket: From 12 to 18

LEVEL 2 ●●○

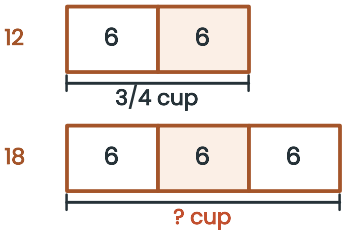
Find the scale factor from the yield, then scale the amount.

The Biscuit Basket card makes 12 biscuits using 3/4 cup of milk. The kitchen wants 18 biscuits. How much milk does the scaled card list?

RATIO TABLE

Biscuits	Milk
12	3/4 cup
6	3/8 cup
18	?

BISCUITS IN GROUPS OF 6



EVIDENCE TO USE

- Case 1: Biscuit Basket (fictional quantities)
- Base yield: 12 biscuits, 3/4 cup milk
- Target yield: 18 biscuits
- Ratio table: 12 → 3/4 cup; 6 → 3/8 cup; 18 → ?
- Scale factor = target ÷ base

1. Find the scale factor from 12 to 18.

2. Multiply 3/4 cup by the scale factor.

3. Check with the ratio table (12 + 6 = 18).

TRY IT • How much milk would 24 biscuits need?

RECIPE CARD

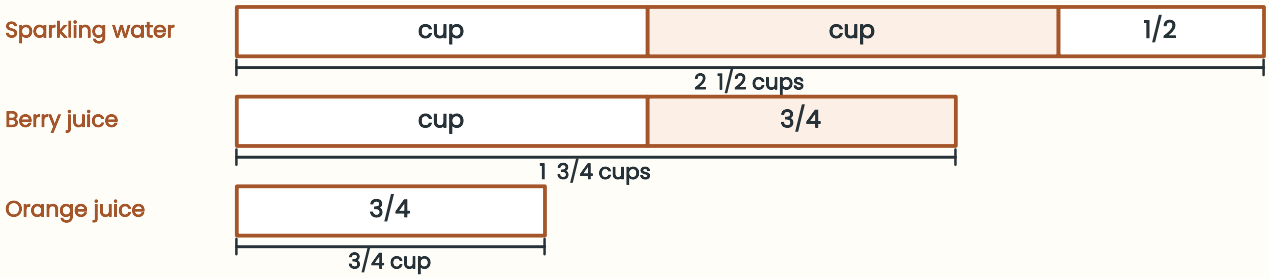
Case 3: Sunrise Fizz

Case question: How much of each drink line is needed for two or three batches?

SUNRISE FIZZ CARD (FICTIONAL DRINK)

Line	Amount
Sparkling water	2 1/2 cups per pitcher
Berry juice	1 3/4 cups per batch
Orange juice	3/4 cup

EACH LINE ON A CUP SCALE



SCALING TABLE

Line	×1	×2	×3
Sparkling water	2 1/2 cups	?	?
Berry juice	1 3/4 cups	—	?
Orange juice	3/4 cup	—	?

- [ ] I scale every part of a mixed number, not just the whole cups.
- [ ] When I scale up (×2, ×3), I check that the new amount is bigger than the original.

FICTIONAL RECIPE

Invented for math practice in the Lantern Lane Test Kitchen. It is not a real recipe, and nothing on this card is meant to be cooked.

Name _____ Date _____

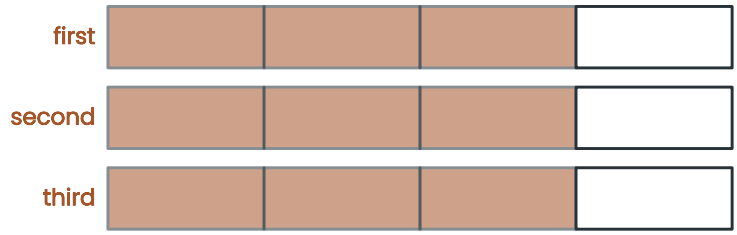
Case 3 Sunrise Fizz: Fix the Tripled Card

LEVEL 3 ●●●

Find the error in the marked work, then correct it.

A helper tripled the Sunrise Fizz line "3/4 cup orange juice" and wrote "9/12 cup." Is the helper correct? Fix the scaled amount.

FOURTHS BAR FOR 3 BATCHES (EACH BOX = ONE FOURTH)



EVIDENCE TO USE

- Case 3: Sunrise Fizz (fictional drink)
- Original line: 3/4 cup orange juice
- Helper's work (marked): 3/4 × 3 = 9/12, with both the top and bottom numbers multiplied by 3
- Fourths bar for 3 batches: three bars, each with 3 of its 4 fourths shaded

1. Explain what 9/12 is equal to.

2. Count the shaded fourths on the bar.

3. Write the correct amount as a mixed number.

TRY IT • A helper doubled 5/8 cup and wrote 10/16 cup. What is the correct amount?

RECIPE CARD

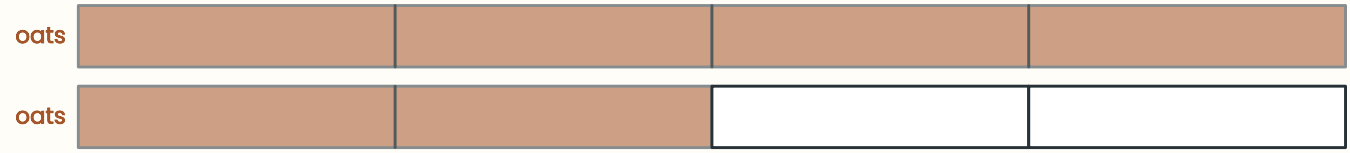
Case 4: Granola Bar Pan

Case question: How do the pan amounts change for a half pan or a bigger batch, and which scoops measure them?

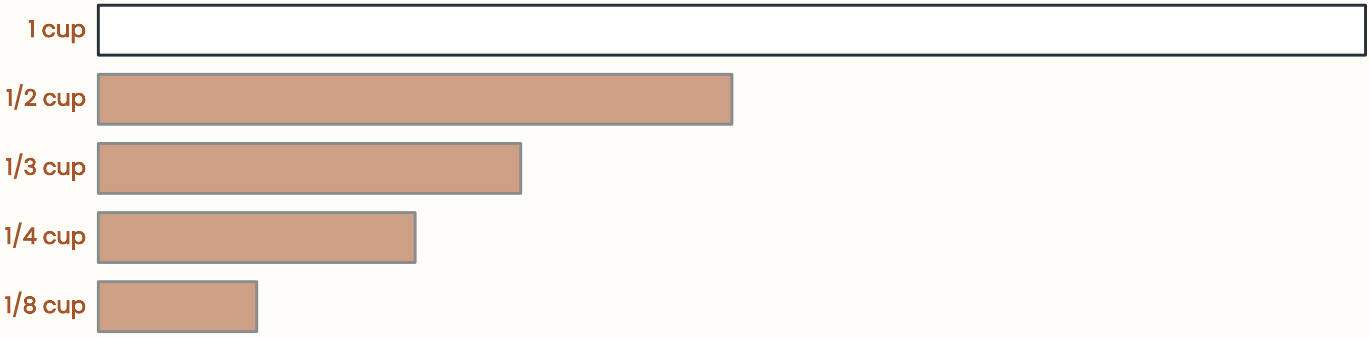
GRANOLA BAR PAN CARD: FULL PAN AND SCALED PANS

Pan	Servings	Oats	Honey
Full pan	6	1 1/2 cups	3/4 cup
Half pan	—	?	?
Bigger batch	15	—	?

FULL-PAN OATS IN QUARTER-CUPS



SCOOPS IN THE DRAWER, TO SCALE



- [ ] I can say which scoop is the biggest and which is the smallest.
- [ ] I check a scoop plan by adding the scoops back up.

FICTIONAL RECIPE

Invented for math practice in the Lantern Lane Test Kitchen. It is not a real recipe, and nothing on this card is meant to be cooked.

Name _____ Date _____

Case 4 Granola Bar Pan: Which Scoop Set?

LEVEL 1 ●○○

Test each scoop set against the clues. Cross out sets that fail.

A Granola Bar card line needs 3/4 cup of oats. Which scoop set matches every clue?

TEST EACH SET

Set	Scoops	Total	Fails clue
A	three 1/4		
B	six 1/8		
C	1/2 + 1/4		
D	two 1/4 + two 1/8		
E	two 1/3		

EVIDENCE TO USE

- Case 4: Granola Bar Pan (fictional quantities)
- Set A: three 1/4 cups; Set B: six 1/8 cups
- Set C: one 1/2 cup + one 1/4 cup; Set D: two 1/4 cups + two 1/8 cups
- Set E: two 1/3 cups
- Clue 1: The total is exactly 3/4 cup.
- Clue 2: Only one size of scoop is used.
- Clue 3: Fewer than 4 scoops are used.

1. Find each set's total and apply Clue 1.

2. Apply Clue 2 to the sets that are left.

3. Apply Clue 3 and name the set.

TRY IT • Which one-size set makes exactly 1/2 cup using exactly 4 scoops?

RECIPE CARD

Case 6: Dinner Roll Tray

Case question: How do the tray amounts change for fewer rolls, and what does the flour cost per pound?

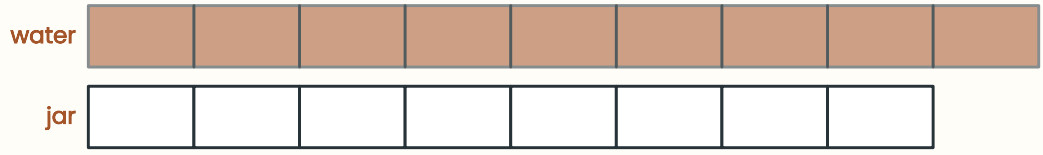
DINNER ROLL TRAY CARD

Line	Amount
Yield	24 rolls
Water	2 1/4 cups
Butter	3/4 cup
Sesame-seed topping	3/4 cup
Sesame-seed jar holds	2 cups

YIELD TABLE

Rolls	Water	Butter
24	2 1/4 cups	3/4 cup
16	?	—
8	—	?

WATER FOR 24 ROLLS AND THE 2-CUP SEED JAR, IN QUARTER-CUPS



FLOUR AT THE FICTIONAL MARKET

LANTERN LANE MARKET

Flour
5-pound bag

$4.35

unit price: _____

LANTERN LANE MARKET

Flour
2 pounds

$1.98

unit price: _____

FICTIONAL RECIPE

Invented for math practice in the Lantern Lane Test Kitchen. It is not a real recipe, and nothing on this card is meant to be cooked.

Name _____ Date _____

Case 6 Dinner Roll Tray: From 24 Rolls to 16

LEVEL 3 ●●●

Find a fractional scale factor and multiply a mixed number by it.

The Dinner Roll Tray card makes 24 rolls using 2 1/4 cups of water. The kitchen wants 16 rolls. How much water does the scaled card list?

YIELD TABLE

Rolls	Water
24	2 1/4 cups
16	?

2 1/4 = 9/4

9/4 cups



your split



EVIDENCE TO USE

- Case 6: Dinner Roll Tray (fictional quantities)
- Base: 24 rolls, 2 1/4 cups water
- Target: 16 rolls
- Scale factor = target ÷ base = 16/24
- Bar: 2 1/4 = 9/4 cups, drawn as 9 quarter-cup boxes (you split it into equal parts)

1. Simplify 16/24 to find the scale factor.

2. Multiply 9/4 by the scale factor using the bar: find one part, then keep 2 parts.

3. Check: 2 1/4 × 16 ÷ 24.

TRY IT • The same card uses 3/4 cup of butter for 24 rolls. How much for 8 rolls?

RECIPE CARD

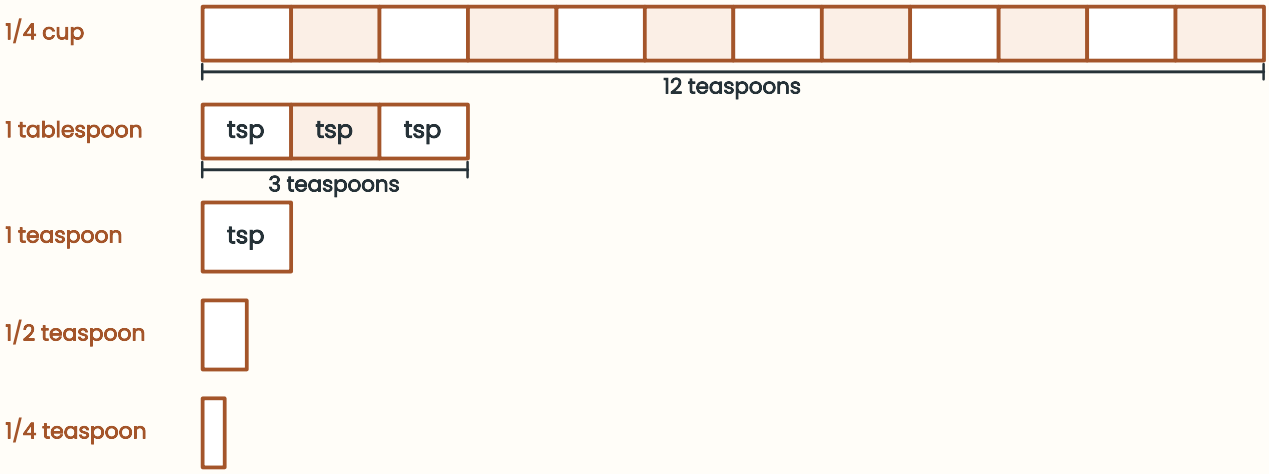
Case 7: Spice Shelf

Case question: Which spoon measures each spice line, and how do teaspoons and tablespoons trade?

SPICE SHELF CARD

Line	Amount
Spice mix	2 tablespoons
Paprika (one batch of mix)	2 teaspoons
Batches of mix	4 1/2
One spice line	1 1/2 teaspoons

TOOLS ON THE SHELF, DRAWN TO SCALE IN TEASPOONS



- [ ] I can say how many teaspoons fill 1 tablespoon.
- [ ] I pick the tool that measures an amount in whole scoops.
- [ ] I change tablespoons to teaspoons before I compare.

FICTIONAL RECIPE

Invented for math practice in the Lantern Lane Test Kitchen. It is not a real recipe, and nothing on this card is meant to be cooked.

Name _____ Date _____

Case 7 Spice Shelf: Pick the Right Spoon

LEVEL 2 ●●○

Use the clues to choose one measuring tool.

A spice line asks for 1 1/2 teaspoons. You must use only one tool, filled level each time. Which tool fits every clue?

TEST EACH TOOL

Tool	Teaspoons	1 1/2 ÷ size
1/4 cup	12	
1 tablespoon	3	
1 teaspoon	1	
1/2 teaspoon	1/2	
1/4 teaspoon	1/4	

EVIDENCE TO USE

- Case 7: Spice Shelf (fictional quantities)
- Tools: 1/4 cup, 1 tablespoon, 1 teaspoon, 1/2 teaspoon and 1/4 teaspoon
- 1 tablespoon = 3 teaspoons; 1/4 cup = 12 teaspoons
- Clue 1: The tool holds no more than 1 1/2 teaspoons.
- Clue 2: 1 1/2 teaspoons is a whole number of scoops.
- Clue 3: It uses the fewest scoops of the tools left.

1. Apply Clue 1 using the conversions.

2. For each remaining tool, find 1 1/2 ÷ tool size.

3. Apply Clue 3 and name the tool.

TRY IT • Using one tool from the same list, what makes 3/4 teaspoon in the fewest scoops?

1. Case 1 Biscuit Basket: Scoop Count

LEVEL 1

3 scoops

WORKED REASONING • 3/4 cup means 3 parts that are each 1/4 cup. Shade 3 of the 4 parts and count them: 1, 2, 3. So 3/4 ÷ 1/4 = 3 scoops.

WATCH FOR • Some learners count all 4 parts of the cup. The unshaded part is not part of 3/4 cup, so only the 3 shaded parts are scooped.

TRANSFER • 15 scoops (1 cup = 8 eighth-cup scoops, plus 7 more)

2. Case 1 Biscuit Basket: From 12 to 18

LEVEL 2

1 1/8 cups

WORKED REASONING • Scale factor: 18/12 = 3/2. Then 3/4 × 3/2 = 9/8 = 1 1/8 cups. Check: 6 biscuits is half of 12, so it uses 3/8 cup. 12 + 6 biscuits uses 3/4 + 3/8 = 6/8 + 3/8 = 9/8 cup.

WATCH FOR • Adding 6 to the amount because 6 biscuits were added is wrong. The amount changes by the same factor as the yield, not by the same number.

TRANSFER • 1 1/2 cups (factor 2)

9. Case 3 Sunrise Fizz: Fix the Tripled Card

LEVEL 3

Not correct; tripled amount is 9/4 = 2 1/4 cups

WORKED REASONING • 9/12 equals 3/4, so the helper did not change the amount at all. Tripling counts 3 groups of 3 fourths: 9 fourths = 9/4 cup. 9/4 = 8/4 + 1/4 = 2 1/4 cups.

WATCH FOR • Multiplying both numerator and denominator by the same number makes an equivalent fraction; it does not change the amount. Here, tripling means taking three groups of three fourths, so 3/4 × 3 = 9/4. The piece size remains one fourth of a cup.

TRANSFER • 10/8 = 1 1/4 cups

11. Case 4 Granola Bar Pan: Which Scoop Set?

LEVEL 1

Set A: three 1/4 cups

WORKED REASONING • Clue 1: A = 3/4, B = 6/8 = 3/4, C = 2/4 + 1/4 = 3/4, D = 2/4 + 2/8 = 3/4, E = 2/3 (not 3/4). Survivors: A, B, C, D. Clue 2: C and D mix sizes. Survivors: A, B. Clue 3: A uses 3 scoops and B uses 6. Only A is left.

WATCH FOR • Set E can seem right because a 1/3 cup looks close to a 1/4 cup and two scoops feel 'about right.' But two 1/3 cups make 2/3 cup, which is less than 3/4 cup (8/12 < 9/12). Thirds and fourths are different piece sizes, so compare totals, not how close the scoops look.

TRANSFER • Four 1/8-cup scoops

18. Case 6 Dinner Roll Tray: From 24 Rolls to 16

LEVEL 3

1 1/2 cups

WORKED REASONING • 16/24 = 2/3. 2 1/4 = 9/4. Split 9/4 into 3 equal parts: 9/4 ÷ 3 = 3/4 cup per part. Keep 2 parts: 2 × 3/4 = 6/4 = 1 1/2 cups. As one step: 9/4 × 2/3 = 18/12 = 3/2 = 1 1/2 cups. Check: 2 1/4 × 16 = 36, and 36 ÷ 24 = 1 1/2.

WATCH FOR • Some learners subtract the number 8 (the 8 fewer rolls) straight from the cup amount, but 8 counts rolls, not cups, so 2 1/4 - 8 makes no sense. Others flip the factor and use 24/16 = 3/2, getting 9/4 × 3/2 = 27/8 = 3 3/8 cups, which is bigger even though the yield got smaller. Fewer rolls means a factor less than 1. (Subtracting the water for 8 rolls, which is 3/4 cup, does work: 2 1/4 - 3/4 = 1 1/2 cups.)

TRANSFER • 1/4 cup (factor 1/3)

20. Case 7 Spice Shelf: Pick the Right Spoon

LEVEL 2

1/2 teaspoon (3 scoops)

WORKED REASONING • Clue 1: 1/4 cup (12 tsp) and 1 tablespoon (3 tsp) are too big. Left: 1 tsp, 1/2 tsp, 1/4 tsp. Clue 2: 1 1/2 ÷ 1 = 1 1/2 (not whole), 1 1/2 ÷ 1/2 = 3, 1 1/2 ÷ 1/4 = 6. Left: 1/2 tsp, 1/4 tsp. Clue 3: 3 scoops is fewer than 6. The answer is the 1/2 teaspoon.

WATCH FOR • Picking the 1-teaspoon tool because it is closest in size is a mistake. It cannot make 1 1/2 teaspoons in whole level scoops.

TRANSFER • 1/4 teaspoon, 3 scoops