TEACHER + STUDENT RESOURCE

Grade 3 mathematics

Count fractional parts

NC.3.NF.2 | NUMBER AND OPERATIONS – FRACTIONS

Current North Carolina Standard Course of Study
Aligned for 2026-27 and 2027-28. The 2026-adopted standards begin in 2028-29.

Includes teacher scripts, visual models, 30 multiple-choice items, 30 drawing / construction tasks, worked keys, and observation records. Select tasks across several short sessions; this is not a 60-item sitting.

Original mathematical models • Accessible oral, drawn, and constructed response routes

FREE SAMPLE - selected pages

Free sample | Contents

NC.3.NF.2 | Third Grade mathematics

This sample contains 19 complete selected pages from the
94-page resource, plus this sample contents page.
Original printed page numbers are retained. Gaps are intentional.

Included original pages: 1-14, 29-30, 59, 62-63

Representative activities
M01: sample PDF page(s) 15; original page(s) 14
M02: sample PDF page(s) 15; original page(s) 14
O01: sample PDF page(s) 16; original page(s) 29
O02: sample PDF page(s) 17; original page(s) 30

Selected teacher prompts and keys: original page(s) 59, 62-63

Using this sample
Read the preparation and access guidance before using a selected activity.
Keep teacher keys and private preparation pages separate from student copies.
Use the original resource contents to see the scope of the complete packet.

Complete paid download
The complete resource includes the full PDF task bank and teaching materials.

TEACHER GUIDE

Contents and use

Pages 3-5: exact standard, targets, access and worked model. Pages 6-12: seven lesson scripts. Page 13: reusable organizer. Pages 14-28: choice bank. Pages 29-58: drawing and performance bank. Pages 59-61: choice keys. Pages 62-91: worked performance keys. Pages 92-93: evidence and scoring. Page 94: sources.

Use a 4-session core: Session 1, warm-up and I Do (15-20 minutes); Session 2, We Do and partner work (20-25 minutes); Session 3, independent work and targeted reteach (20-25 minutes); Session 4, exit conferences and transfer (10-15 minutes). Adapt time to student needs.

Each section offers an optional bank of paired item ranges: 4/4/5/5/5/4/3 items of each type. Choose one M and one O at first; use alternatives for later practice and individual evidence. Teacher modeling is not independent assessment.

Printing: choose student task pages separately from keys. Response boxes are available for work, drawings, or adult transcription. No printed length claims are made; compare the displayed unit wholes, not an assumed inch scale.

Materials: pencils, crayons, paper strips and plain paper. Adults cut strips if needed. For multiplication, use classroom tens rods or draw rods with ten equal small squares. Students can use full sheets rather than small loose pieces.

Mathematical practices: MP2, connect models and quantities; MP3, explain and critique claims; MP4, model contexts; MP6, identify equal units precisely. Record these through explanations and revised models, not extra quizzes.

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TEACHER GUIDE

Standard and evidence

Interpret fractions with denominators of 2, 3, 4, 6, and 8 using area and length models.

• Using an area model, explain that the numerator of a fraction represents the number of equal parts of the unit fraction.

• Using a number line, explain that the numerator of a fraction represents the number of lengths of the unit fraction from 0.

A | I can: Explain a numerator as a count of unit-fraction areas.

B | I can: Explain a numerator as a count of unit lengths from zero.

C | I can: Connect area, length, and fraction notation.

Evidence to collect: an individually produced model, the matching equation or fraction, and an explanation of what each unit counts. Use choice items only as supplementary evidence. Ask a learner to point to the units in their own model.

Coverage: every bank item identifies one target in its teacher key. The bank revisits all targets during guided and independent opportunities. Use O tasks to see the required construction and explanation directly.

FREE SAMPLE - selected pages

TEACHER GUIDE

Access and next steps

Prerequisites: equal grouping, counting, and identifying one whole. For fractions, review equal partitions without naming fractions first. For multiplication, review ten ones as one ten and equal groups. Do not assume a correct written answer proves model understanding.

Allow neutral read-aloud, enlarged print, high-contrast tracing, movable paper strips, oral explanation, signing, AAC, or adult transcription. When partitioning is assessed, an adult must not supply the partitions. If motor access prevents drawing, the learner directs the adult exactly where each partition belongs.

Separate access from help: record “directions read” as access. Record “teacher pointed to the correct interval / counted the parts” as answer-supplying support, and collect a new independent sample later.

Misconception response: If parts are unequal, overlay or compare their areas or lengths before naming fractions. If a learner counts tick marks, trace the intervals between 0 and 1. If equal fractions look unequal, first check whether the unit wholes match.

Reteach with larger models and fewer simultaneous demands. Extend by comparing two correct strategies and explaining why both work. Keep denominator families within the standard; extension need not introduce new denominators.

No fixed speed cutoff or official mastery threshold is used. These records guide teaching; a score alone does not certify mastery.

FREE SAMPLE - selected pages

TEACHER MODEL

Think aloud and anchor

Five copies of one eighth

Say: “Each part has area 1/8 of the whole. I select five equal parts, so their area is 5/8. The 5 counts copies; the 8 tells the equal parts in one whole. On the line I start at 0 and travel five intervals of length 1/8. I end at 5/8. The starting mark is not a length.”

Model A - same unit whole

One whole

Model B - same unit whole

Anchor: Name the whole → check equal parts → name one unit fraction → count copies. For equivalent fractions, keep the unit whole unchanged.

FREE SAMPLE - selected pages

LESSON SCRIPT | Warm-up

Notice the unit

Optional bank: M01-M04 and O01-O04. Selected core: M01 and O01; use O04 as a later transfer.

0-2 minutes: identify the unit and review the direction. Invite a quick model description before any calculation. Ask, “What is one unit here? What must stay equal?” Let each learner point or draw.

2-6 minutes: Students construct, draw, or reason through the selected open task. Offer wait time and neutral access supports.

6-10 minutes: discuss the selected choice item. Ask why one distractor fails, using the model. Keep teacher explanations separate from individual evidence.

Say: “Show me where your answer appears in your model. What does each part or group represent? How could we check it?”

Worked selected task: 1 equal parts of size 1/2 make 1/2. The denominator tells how many equal parts fill one whole. The numerator counts selected parts, or intervals of length 1/2 measured from 0. Sum: 1/2 = 1/2. Point location is 1/2 of the distance from 0 to 1.

Choice check: M01 = 1/2. There are 2 equal parts in one whole and 1 selected parts. Each is 1/2; 1 copies make 1/2.

Look / listen: Listen for a precise unit, not just an answer.

If stuck: return to one rod or one whole, check equal units, then rebuild. Do not replace a construction task with a recognition question.

Early finisher: create a different correct model for the same quantity and explain what remains unchanged.

Record: item ID, representation, equation / fraction, explanation, access support, answer-supplying help, and the next teaching move. Timing is flexible, not a performance cutoff.

FREE SAMPLE - selected pages

LESSON SCRIPT | I Do

Make thinking visible

Optional bank: M05-M08 and O05-O08. Selected core: M05 and O05; use O08 as a later transfer.

0-2 minutes: identify the unit and review the direction. Use the worked model on page 5. Say each step and point to its matching part. Then ask a learner to restate the model-to-symbol connection.

2-6 minutes: Model the complete worked example, including a second strategy. Invite students to explain what each label refers to.

6-10 minutes: discuss the selected choice item. Ask why one distractor fails, using the model. Keep teacher explanations separate from individual evidence.

Say: “Show me where your answer appears in your model. What does each part or group represent? How could we check it?”

Worked selected task: 7 equal parts of size 1/8 make 7/8. The denominator tells how many equal parts fill one whole. The numerator counts selected parts, or intervals of length 1/8 measured from 0. Sum: 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 = 7/8. Point location is 7/8 of the distance from 0 to 1.

Choice check: M05 = 1/8. Each equal part is 1/8 of the whole. The numerator counts how many of these parts are selected.

Look / listen: Watch whether the learner links the number to a count of units.

If stuck: return to one rod or one whole, check equal units, then rebuild. Do not replace a construction task with a recognition question.

Early finisher: create a different correct model for the same quantity and explain what remains unchanged.

Record: item ID, representation, equation / fraction, explanation, access support, answer-supplying help, and the next teaching move. Timing is flexible, not a performance cutoff.

FREE SAMPLE - selected pages

LESSON SCRIPT | We Do

Build it together

Optional bank: M09-M13 and O09-O13. Selected core: M09 and O09; use O13 as a later transfer.

0-2 minutes: identify the unit and review the direction. Begin the selected open task together. Pause before the last step. Ask, “What would you draw next, and why?” Compare two student suggestions, then finish a shared model.

2-6 minutes: Students construct, draw, or reason through the selected open task. Offer wait time and neutral access supports.

6-10 minutes: discuss the selected choice item. Ask why one distractor fails, using the model. Keep teacher explanations separate from individual evidence.

Say: “Show me where your answer appears in your model. What does each part or group represent? How could we check it?”

Worked selected task: 1 equal parts of size 1/3 make 1/3. The denominator tells how many equal parts fill one whole. The numerator counts selected parts, or intervals of length 1/3 measured from 0. Sum: 1/3 = 1/3. Point location is 1/3 of the distance from 0 to 1.

Choice check: M09 = 1 copies of 1/3. The numerator 1 counts selected unit-fraction pieces, each with area 1/3.

Look / listen: Listen for equal parts or equal groups and a reason.

If stuck: return to one rod or one whole, check equal units, then rebuild. Do not replace a construction task with a recognition question.

Early finisher: create a different correct model for the same quantity and explain what remains unchanged.

Record: item ID, representation, equation / fraction, explanation, access support, answer-supplying help, and the next teaching move. Timing is flexible, not a performance cutoff.

FREE SAMPLE - selected pages

LESSON SCRIPT | Collaborative practice

Explain to a partner

Optional bank: M14-M18 and O14-O18. Selected core: M14 and O14; use O18 as a later transfer.

0-2 minutes: identify the unit and review the direction. Partner A builds or draws; partner B checks equal units and asks one question. Switch with the alternate item. Each learner records their own explanation.

2-6 minutes: Students construct, draw, or reason through the selected open task. Offer wait time and neutral access supports.

6-10 minutes: discuss the selected choice item. Ask why one distractor fails, using the model. Keep teacher explanations separate from individual evidence.

Say: “Show me where your answer appears in your model. What does each part or group represent? How could we check it?”

Worked selected task: 3 equal parts of size 1/3 make 3/3. The denominator tells how many equal parts fill one whole. The numerator counts selected parts, or intervals of length 1/3 measured from 0. Sum: 1/3 + 1/3 + 1/3 = 3/3. Point location is 3/3 of the distance from 0 to 1.

Choice check: M14 = 3/3. There are 3 equal parts in one whole and 3 selected parts. Each is 1/3; 3 copies make 3/3.

Look / listen: Record each individual’s reasoning, not a group score.

If stuck: return to one rod or one whole, check equal units, then rebuild. Do not replace a construction task with a recognition question.

Early finisher: create a different correct model for the same quantity and explain what remains unchanged.

Record: item ID, representation, equation / fraction, explanation, access support, answer-supplying help, and the next teaching move. Timing is flexible, not a performance cutoff.

FREE SAMPLE - selected pages

LESSON SCRIPT | Independent practice

Try it independently

Optional bank: M19-M23 and O19-O23. Selected core: M19 and O19; use O23 as a later transfer.

0-2 minutes: identify the unit and review the direction. Read directions neutrally if needed. Allow the full workspace and materials. Say, “Show how the model supports your answer.” Do not partition or count for the learner.

2-6 minutes: Students construct, draw, or reason through the selected open task. Offer wait time and neutral access supports.

6-10 minutes: discuss the selected choice item. Ask why one distractor fails, using the model. Keep teacher explanations separate from individual evidence.

Say: “Show me where your answer appears in your model. What does each part or group represent? How could we check it?”

Worked selected task: 2 equal parts of size 1/6 make 2/6. The denominator tells how many equal parts fill one whole. The numerator counts selected parts, or intervals of length 1/6 measured from 0. Sum: 1/6 + 1/6 = 2/6. Point location is 2/6 of the distance from 0 to 1.

Choice check: M19 = 2/6. There are 6 equal parts in one whole and 2 selected parts. Each is 1/6; 2 copies make 2/6.

Look / listen: Collect an unaided model and explanation before discussing solutions.

If stuck: return to one rod or one whole, check equal units, then rebuild. Do not replace a construction task with a recognition question.

Early finisher: create a different correct model for the same quantity and explain what remains unchanged.

Record: item ID, representation, equation / fraction, explanation, access support, answer-supplying help, and the next teaching move. Timing is flexible, not a performance cutoff.

FREE SAMPLE - selected pages

LESSON SCRIPT | Small-group reteach

Repair the model

Optional bank: M24-M27 and O24-O27. Selected core: M24 and O24; use O27 as a later transfer.

0-2 minutes: identify the unit and review the direction. Use the access and misconception guidance. Have the learner identify the whole or ten first, then reconstruct the selected model. Ask what changed and why.

2-6 minutes: Students construct, draw, or reason through the selected open task. Offer wait time and neutral access supports.

6-10 minutes: discuss the selected choice item. Ask why one distractor fails, using the model. Keep teacher explanations separate from individual evidence.

Say: “Show me where your answer appears in your model. What does each part or group represent? How could we check it?”

Worked selected task: 2 equal parts of size 1/3 make 2/3. The denominator tells how many equal parts fill one whole. The numerator counts selected parts, or intervals of length 1/3 measured from 0. Sum: 1/3 + 1/3 = 2/3. Point location is 2/3 of the distance from 0 to 1.

Choice check: M24 = 1/3 + 1/3. 2/3 is 2 copies of 1/3.

Look / listen: Record support separately; seek a fresh independent sample.

If stuck: return to one rod or one whole, check equal units, then rebuild. Do not replace a construction task with a recognition question.

Early finisher: create a different correct model for the same quantity and explain what remains unchanged.

Record: item ID, representation, equation / fraction, explanation, access support, answer-supplying help, and the next teaching move. Timing is flexible, not a performance cutoff.

FREE SAMPLE - selected pages

LESSON SCRIPT | Exit ticket

Show and explain

Optional bank: M28-M30 and O28-O30. Selected core: M28 and O28; use O30 as a later transfer.

0-2 minutes: identify the unit and review the direction. Choose one final choice task and one performance task. Ask for a brief explanation or pointing demonstration. Compare this with earlier evidence before choosing a next step.

2-6 minutes: Students construct, draw, or reason through the selected open task. Offer wait time and neutral access supports.

6-10 minutes: discuss the selected choice item. Ask why one distractor fails, using the model. Keep teacher explanations separate from individual evidence.

Say: “Show me where your answer appears in your model. What does each part or group represent? How could we check it?”

Worked selected task: 1 equal parts of size 1/2 make 1/2. The denominator tells how many equal parts fill one whole. The numerator counts selected parts, or intervals of length 1/2 measured from 0. Sum: 1/2 = 1/2. Point location is 1/2 of the distance from 0 to 1.

Choice check: M28 = 1. Iterating length 1/2 exactly 1 times gives 1/2. Count intervals traversed, not starting mark.

Look / listen: If evidence is missing, mark N/O and schedule another opportunity.

If stuck: return to one rod or one whole, check equal units, then rebuild. Do not replace a construction task with a recognition question.

Early finisher: create a different correct model for the same quantity and explain what remains unchanged.

Record: item ID, representation, equation / fraction, explanation, access support, answer-supplying help, and the next teaching move. Timing is flexible, not a performance cutoff.

FREE SAMPLE - selected pages

REUSABLE STUDENT ORGANIZER

Show the unit

Name: _____ Date: _____

Identify the whole or group. Draw a model. Label what each number counts. Explain how you checked it.

My model

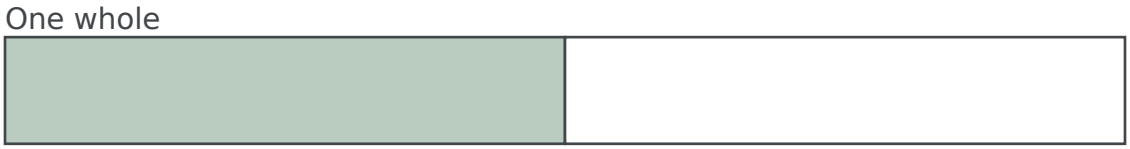
My equation / fraction and explanation

FREE SAMPLE - selected pages

STUDENT CHOICE BANK

M01 and M02

M01 | What fraction is shown by the shaded area?



A. 1/2

B. 2/1

C. 0/2

D. 1/1

M02 | What fraction names point P?

A. 1/3

B. 2/4

C. 2/3

D. 2/2

FREE SAMPLE - selected pages

STUDENT PERFORMANCE | Warm-up

O01 | Draw, build, explain

Name: _____ Date: _____

Partition the rectangle into 2 equal areas. Show 1/2. Explain what the numerator counts.

One whole

A: area / first model

B: length / explanation

FREE SAMPLE - selected pages

STUDENT PERFORMANCE | Warm-up

O02 | Draw, build, explain

Name: _____ Date: _____

Partition 0 to 1 into 3 equal intervals. Locate 2/3. Show 2 steps from 0 and explain the numerator.

A: area / first model

B: length / explanation

FREE SAMPLE - selected pages

TEACHER KEY

Choice answers 1-10

M01 | A: 1/2 | Target A. There are 2 equal parts in one whole and 1 selected parts. Each is 1/2; 1 copies make 1/2.

M02 | C: 2/3 | Target B. There are 3 equal parts in one whole and 2 selected parts. Each is 1/3; 2 copies make 2/3.

M03 | C: 3 copies of 1/4 | Target A. The numerator 3 counts selected unit-fraction pieces, each with area 1/4.

M04 | B: 5 | Target B. Iterating length 1/6 exactly 5 times gives 5/6. Count intervals traversed, not starting mark.

M05 | A: 1/8 | Target A. Each equal part is 1/8 of the whole. The numerator counts how many of these parts are selected.

M06 | B: 1/4 + 1/4 | Target C. 2/4 is 2 copies of 1/4.

M07 | A: 3/6 | Target A. There are 6 equal parts in one whole and 3 selected parts. Each is 1/6; 3 copies make 3/6.

M08 | C: 5/8 | Target B. There are 8 equal parts in one whole and 5 selected parts. Each is 1/8; 5 copies make 5/8.

M09 | D: 1 copies of 1/3 | Target A. The numerator 1 counts selected unit-fraction pieces, each with area 1/3.

M10 | B: 4 | Target B. Iterating length 1/6 exactly 4 times gives 4/6. Count intervals traversed, not starting mark.

FREE SAMPLE - selected pages

TEACHER KEY

O01 | Worked evidence

Target A | Explain a numerator as a count of unit-fraction areas.

1 equal parts of size 1/2 make 1/2. The denominator tells how many equal parts fill one whole. The numerator counts selected parts, or intervals of length 1/2 measured from 0. Sum: 1/2 = 1/2. Point location is 1/2 of the distance from 0 to 1.

One whole

Accept equivalent accurate constructions, orientations, and explanations. A model must preserve equal units and identify the whole. If the prompt asks for two models, collect both; a correct equation alone is incomplete evidence.

FREE SAMPLE - selected pages

TEACHER KEY

O02 | Worked evidence

Target B | Explain a numerator as a count of unit lengths from zero.

2 equal parts of size 1/3 make 2/3. The denominator tells how many equal parts fill one whole. The numerator counts selected parts, or intervals of length 1/3 measured from 0. Sum: 1/3 + 1/3 = 2/3. Point location is 2/3 of the distance from 0 to 1.

Accept equivalent accurate constructions, orientations, and explanations. A model must preserve equal units and identify the whole. If the prompt asks for two models, collect both; a correct equation alone is incomplete evidence.

FREE SAMPLE - selected pages