

Divide, Model and Check

Grade 4 | NC.4.NBT.6



Place value • representations • reasoning

Seven teaching sections, detailed models, 30 multiple-choice and 30 open/performance tasks, generous workspaces, worked keys and evidence records.

Use selected tasks across short lessons. The bank is not a single test. Current NC standard alignment for 2026-27 and 2027-28; not the future 2028-29 standards.

Free sample | Contents

NC.4.NBT.6 | Fourth Grade mathematics

This sample contains 14 complete selected pages from the 88-page resource, plus this sample contents page. Original printed page numbers are retained. Gaps are intentional.

Included original pages: 1-10, 12-13, 63, 78

Representative activities

M01: sample PDF page(s) 11; original page(s) 10

M02: sample PDF page(s) 11; original page(s) 10

O01: sample PDF page(s) 12; original page(s) 12

O02: sample PDF page(s) 13; original page(s) 13

Selected teacher prompts and keys: original page(s) 63, 78

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 teaching route

Pages 3-7: standard, targets, materials, worked instruction and reusable organizer.

Page 8: assessment guidance and individual evidence record.

Seven sections follow: each has a scripted lesson, selected student choice pages and open-performance pages.

Worked keys follow all student sections; the last page lists official sources and use notes.

Suggested sequence: Session 1 warm-up and I Do (20 minutes); Session 2 We Do and collaboration (28 minutes); Session 3 independent practice and exit (22 minutes). Use small-group reteach (10 minutes) as a separate responsive session.

Select M01/O01, M05/O05, M09/O09, M14/O14, M19/O19, M24/O24 and M28/O28 as a starting route. Choose fewer tasks if students need more explanation time. Remaining items are optional practice or later evidence.

Print only needed pages. Teacher models and keys are separate from student tasks; do not display answers during independent work.

TEACHER GUIDE

Standard and learning targets

Find whole-number quotients and remainders with up to three-digit dividends and one-digit divisors with place value understanding using rectangular arrays, area models, repeated subtraction, partial quotients, properties of operations, and/or the relationship between multiplication and division.

I can find whole-number quotients and remainders for dividends through 999 and one-digit nonzero divisors.

I can represent division with area, equal groups or partial quotients, explaining place value.

I can use $\text{dividend} = \text{divisor} \times \text{quotient} + \text{remainder}$, with remainder less than divisor.

Essential question: How does the value of each place explain the written steps?

Collect actual calculations, models and explanations. A correct choice alone does not demonstrate the full standard. The open tasks connect computation, representation and reasoning.

TEACHER GUIDE

Materials, access and readiness

Materials: pencil, eraser, supplied organizers, optional large base-ten blocks or paper place-value disks. Adults prepare any cutouts; do not require small objects. All models can be drawn directly.

Prerequisites: read whole numbers by place, exchange ten units for one next-place unit, and use basic facts. For division, recognize equal groups and related multiplication. Diagnose gaps before assigning larger numbers.

Vocabulary: place value, exchange, regroup, digit, sum, difference, product, quotient, remainder, partial product, partial quotient, distribute. Use gestures and labelled diagrams, then connect language to symbols.

Access: neutral read-aloud, enlarged printing, AAC, oral/signed explanation, scribing dictated mathematical steps and pointing are acceptable when they preserve the target. Do not calculate, tell a regrouping step or name the answer. Record answer-supplying prompts separately.

Reteach: reduce the numbers while preserving the troublesome exchange or model structure. Have the learner build, draw, explain and then record the same action. Return to an original-sized example after success.

Extension: choose two legitimate representations, compare their efficiency and explain why both preserve quantity. Do not introduce four-digit multiplication or division dividends beyond 999 as requirements here.

TEACHER GUIDE

Worked model: say and show

Teacher example: $157 \div 4 = 39 \text{ R}1$

Say: “First name the value of each digit. Every written move must represent an action on quantities. I will explain what changes and what stays equal.”

Partial quotients: $157 - (4 \times 30) = 37$; $37 - (4 \times 9) = 1$. Add the partial quotients: $30 + 9 = 39$. Model a rectangle of height 4 and widths $30 + 9$; the covered area is 156, with 1 units left outside. Check: $4 \times 39 + 1 = 157$; $0 \leq 1 < 4$. The quotient is 39 and remainder is 1. Equal-group drawings with 4 groups of 39 and 1 leftovers are also valid.

4 rows	30 per row	9 per row
	120 units	36 units

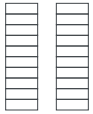
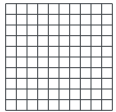
1 leftover outside: $157 = 120 + 36 + 1$. Widths $30 + 9$ give 39. Schematic model, not drawn to scale.

TEACHER GUIDE

From blocks to written steps

Use the exact base-ten pieces below for 124. A hundred is a 10×10 square; a ten is a 10-unit rod; a one is a unit square. Count units within a piece, then name its place value.

$$124 = 100 + 20 + 4$$



Share 124 among 4 groups. Exchange the hundred into 10 tens; with the 2 tens, share 12 tens as 3 tens per group.

Share 4 ones as 1 per group. Each group has 31; $4 \times 31 = 124$ and there is no remainder.

STUDENT RESOURCE

Reusable student organizer

Name: _____ Date: _____ Problem: _____

Draw and label your model

Written method and place-value explanation

Check and interpret the result

TEACHER GUIDE

Evidence and responsive scoring

Score computation, representation and explanation separately. 3: accurate, independent evidence with a clear connection; 2: mostly accurate with a minor error or an incomplete connection; 1: partial relevant work with substantial gaps; 0: an interpretable observed incorrect response. N/O: unobserved, inaccessible or insufficient evidence.

Do not turn lack of speech, slow work or an unavailable response route into zero. Record access supports separately from hints that supply mathematical steps. These are instructional descriptors, not official cut scores or proof of mastery.

For each learner, save an individual open response even during partner work. Ask: What does this digit or region count? Where is the exchange or leftover? How does your check match the original quantity?

Date / item / learner	Evidence / scores	Support / next step

TEACHER GUIDE

Warm-up: teaching moves

Selected core: M01 and O01. Additional bank: M01-M04, O01-O04. Target: Find whole-number quotients and remainders for dividends through 999 and one-digit nonzero divisors.

0-2 minutes | Invite: “What quantities are given? Name their places before calculating.” Ask each learner to predict a reasonable magnitude without supplying the exact answer.

2-5 minutes | Display the selected problem. Ask learners to point to the model part matching each quantity. Keep the answer covered while they work.

5-8 minutes | Say: “Show the calculation and explain what each step counts.” During collaboration, one partner represents and the other checks; then switch and record individual work. During independent or exit work, collect unaided evidence before discussion.

Close | Ask: “How can you check without simply repeating the same steps?” Listen for a value-preserving exchange, a sum of all partial products, or divisor $\times$ quotient + remainder as appropriate.

If stuck: return to the 124 block example with simpler quantities. Ask a neutral question about units rather than naming the missing step. If a hint supplies a step, mark the work as supported and collect a fresh response later.

Record the item, exact strategy, errors, access supports and next move. Early finishers compare a second representation and explain whether it is more efficient. Exit items may take longer than five minutes; use one task rather than rushing.

STUDENT TASKS

Warm-up: choose and check

M01 A learner uses partial quotients to solve $655 \div 5$. Which result should the work show?

A. 130 R4

B. 129 R4

C. 131 R0

D. 130 R0

Optional scratch work

M02 Share 248 counters equally among 6 trays. How many counters go on each tray, and how many are left over?

A. 41 R1

B. 42 R2

C. 43 R1

D. 41 R2

Optional scratch work

STUDENT PERFORMANCE

Warm-up: show your thinking

001 Solve $879 \div 9$. Show an area model or equal-group drawing and a partial-quotients calculation. Explain the place values of the quotient parts. Check with multiplication and explain why the remainder is valid.

Draw and label your model

Written method / connections to your model

Explain and check

STUDENT PERFORMANCE

Warm-up: show your thinking

002 Solve $360 \div 8$. Show an area model or equal-group drawing and a partial-quotients calculation. Explain the place values of the quotient parts. Check with multiplication and explain why the remainder is valid. Tell how your check would reveal an answer that was one unit too high.

Draw and label your model

Written method / connections to your model

Explain and check

TEACHER KEY

Worked keys and evidence

M01 | Warm-up

Answer: C 131 R0

Partial quotients: $655 - (5 \times 100) = 155$; $155 - (5 \times 30) = 5$; $5 - (5 \times 1) = 0$. Add the partial quotients: $100 + 30 + 1 = 131$. Model a rectangle of height 5 and widths $100 + 30 + 1$; the covered area is 655, with 0 units left outside. Check: $5 \times 131 + 0 = 655$; $0 \leq 0 < 5$. The quotient is 131 and remainder is 0. Equal-group drawings with 5 groups of 131 and 0 leftovers are also valid.

Distractor 130 R4: Check: $5 \times 130 + 4 = 654$, not 655. Recheck quotient groups and final remainder.

Distractor 129 R4: Check: $5 \times 129 + 4 = 649$, not 655. Recheck quotient groups and final remainder.

Distractor 130 R0: Check: $5 \times 130 + 0 = 650$, not 655. Recheck quotient groups.

M02 | Warm-up

Answer: D 41 R2

Partial quotients: $248 - (6 \times 40) = 8$; $8 - (6 \times 1) = 2$. Add the partial quotients: $40 + 1 = 41$. Model a rectangle of height 6 and widths $40 + 1$; the covered area is 246, with 2 units left outside. Check: $6 \times 41 + 2 = 248$; $0 \leq 2 < 6$. The quotient is 41 and remainder is 2. Equal-group drawings with 6 groups of 41 and 2 leftovers are also valid.

Distractor 41 R1: Check: $6 \times 41 + 1 = 247$, not 248. Recheck the final subtraction for the remainder.

Distractor 42 R2: Check: $6 \times 42 + 2 = 254$, not 248. Recheck quotient groups.

Distractor 43 R1: Check: $6 \times 43 + 1 = 259$, not 248. Recheck quotient groups and final remainder.

TEACHER KEY

Worked keys and evidence

001 | Warm-up

Answer: 97 R6

Partial quotients: $879 - (9 \times 90) = 69$; $69 - (9 \times 7) = 6$. Add the partial quotients: $90 + 7 = 97$. Model a rectangle of height 9 and widths $90 + 7$; the covered area is 873, with 6 units left outside. Check: $9 \times 97 + 6 = 879$; $0 \leq 6 < 9$. The quotient is 97 and remainder is 6. Equal-group drawings with 9 groups of 97 and 6 leftovers are also valid.

Evidence: require the requested method, labelled model and meaningful explanation. Equivalent correct approaches and language are valid. Score computation, representation and explanation separately.

002 | Warm-up

Answer: 45 R0

Partial quotients: $360 - (8 \times 40) = 40$; $40 - (8 \times 5) = 0$. Add the partial quotients: $40 + 5 = 45$. Model a rectangle of height 8 and widths $40 + 5$; the covered area is 360, with 0 units left outside. Check: $8 \times 45 + 0 = 360$; $0 \leq 0 < 8$. The quotient is 45 and remainder is 0. Equal-group drawings with 8 groups of 45 and 0 leftovers are also valid. A quotient one too high changes divisor $\times$ quotient + remainder by the divisor, so it does not recover the dividend.

Evidence: require the requested method, labelled model and meaningful explanation. Equivalent correct approaches and language are valid. Score computation, representation and explanation separately.

003 | Warm-up

Answer: 87 R7

Partial quotients: $703 - (8 \times 80) = 63$; $63 - (8 \times 7) = 7$. Add the partial quotients: $80 + 7 = 87$. Model a rectangle of height 8 and widths $80 + 7$; the covered area is 696, with 7 units left outside. Check: $8 \times 87 + 7 = 703$; $0 \leq 7 < 8$. The quotient is 87 and remainder is 7. Equal-group drawings with 8 groups of 87 and 7 leftovers are also valid.

Evidence: require the requested method, labelled model and meaningful explanation. Equivalent correct approaches and language are valid. Score computation, representation and explanation separately.