

TEACHER + STUDENT RESOURCE

Grade 6 | The Number System

Long division in context



NC.6.NS.2

Current North Carolina Standard Course of Study

Aligned for 2026-27 and 2027-28; 2026-adopted standards start in 2028-29.

Seven instructional sections • 30 multiple-choice tasks • 30 open / performance tasks •
Worked visual and algorithm keys • Reusable organizers and evidence records

Choose a short core across several sessions. This resource bank is not a 60-item test or a
timed-fluency requirement.

Free sample | Contents

NC.6.NS.2 | Sixth Grade mathematics

This sample contains 19 complete selected pages from the 107-page resource, plus this sample contents page. Original printed page numbers are retained. Gaps are intentional.

Included original pages: 1-14, 29-30, 59, 74-75

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, 74-75

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

Plan the learning

Navigation: exact standard and targets follow on page 3, access and prerequisites on page 4, then worked teaching models and seven lesson scripts. Student organizers come next, followed by the 30-item choice bank and the 30-item open/performance bank.

Teacher-only worked keys, evidence records, and source notes complete the packet. Each page is labelled by its function.

A flexible 4-session core

Session 1: warm-up and I Do, about 20 minutes. Session 2: We Do and collaborative practice, about 25 minutes. Session 3: independent work and a responsive small group, about 25 minutes. Session 4: exit conference and transfer, about 15 minutes. Adjust time and item selection to observed needs; these are planning estimates, not student speed cutoffs.

Each section offers M and O item ranges of 4 / 4 / 5 / 5 / 5 / 4 / 3. Begin with the selected pair in its script. Use the remaining items for later practice, alternate examples, or conferences. A coached response is not an independent assessment sample.

Materials: pencils, plain paper, ruler for organizing work, and optional full paper strips. All essential blank organizers and model examples appear here. Adults handle any cutting. Print selected student pages separately from teacher keys. Printed diagrams represent mathematical units and are not promised physical measurement scales.

Mathematical practices: MP2 (units and quantities), MP3 (justify and critique), MP4 (model situations), MP6 (precision), and MP7 (place-value or factor structure). Use an individual explanation and work sample as evidence.

TEACHER GUIDE

Exact standard and targets

Fluently divide using long division with a minimum of a four-digit dividend and interpret the quotient and remainder in context.

A | I can: Use long division fluently with dividends of at least four digits.

B | I can: Interpret both quotient and remainder in context and verify the result.

Evidence: An individually executed long-division algorithm with at least a four-digit dividend, accurate quotient and remainder, verification, and a context-based decision about the remainder. Five-digit examples are included.

TEACHER GUIDE

Access, prerequisites, response

Prerequisites: Place value, multiplication facts and estimation, subtraction with regrouping, and the equation $\text{dividend} = \text{divisor} \times \text{quotient} + \text{remainder}$. A four-digit dividend is a minimum here, not a maximum.

Access: read directions neutrally, enlarge print, allow a straightedge or place-value grid, or accept oral, signed, AAC, or dictated explanations. A learner can direct an adult to write exact algorithm steps or model partitions when motor access requires it. Do not supply the operation, calculation, quotient digit, factor, grouping, or partition being assessed.

Record access separately from answer-supplying help. Calculator use can verify completed work during teaching, but it cannot establish independent algorithm computation. For supported work, preserve the support record and collect a fresh independent example later.

Respond to a misconception: If a quotient digit is missing, name the place of every dividend digit and show why a zero is needed when a partial dividend is smaller than the divisor. If a remainder is at least the divisor, ask whether another full group can be made.

Fluency evidence: accuracy, sensible efficiency, and independent, reliable use across varied examples over time. Observe explanations and self-checks. No fixed timer, official cut score, or automatic mastery claim is introduced by this packet.

Essential question: How can place value organize division, and how does context change what we report?

TEACHER MODEL | NOT ASSESSMENT

Think aloud: B

Say: “Estimate a quotient digit → multiply → subtract → compare remainder with divisor → bring down the next digit → retain necessary zero digits → interpret and check.”

Share 6408 meters of cord equally among 9 groups. What exact length does each receive? Show the complete long-division algorithm, including zero digits when needed. Check with multiplication and addition. Explain the quotient and remainder in the situation.

Model and explain: $6408 \div 9 = 712$ remainder 0. Use 64: write 7, multiply $7 \times 9 = 63$, subtract to leave 1; bring down the next digit. Use 10: write 1, multiply $1 \times 9 = 9$, subtract to leave 1; bring down the next digit. Use 18: write 2, multiply $2 \times 9 = 18$, subtract to leave 0. Check: $9 \times 712 + 0 = 6408$; $0 \leq 0 < 9$. Each receives $712 + 0/9 = 712$ meters; the remaining 0 meters is divided into 9 equal shares.

$$\begin{array}{r}
 712 \\
 9 \overline{) 6408} \\
 \underline{- 63} \\
 10 \\
 \underline{- 9} \\
 18 \\
 \underline{- 18} \\
 0
 \end{array}$$

Ask: “Which unit or relationship justifies each step? How does the check connect to the original quantity?”

LESSON SCRIPT | Warm-up

Warm-up teaching moves

Optional bank: M01-M04 and O01-O04. Selected core: M01 and O01. Target B: Interpret both quotient and remainder in context and verify the result.

0-3 minutes: Ask learners to name the units or factors before computing. Collect one estimate or factor relationship. Say, “What do you know before doing the algorithm?”

Next 5-8 minutes: Learners complete the selected O item; observe the actual model or algorithm and record supports.

Selected-task solution for the teacher: $4827 \div 6 = 804$ remainder 3. Use 48: write 8, multiply $8 \times 6 = 48$, subtract to leave 0; bring down the next digit. Use 2: write 0, multiply $0 \times 6 = 0$, subtract to leave 2; bring down the next digit. Use 27: write 4, multiply $4 \times 6 = 24$, subtract to leave 3. Check: $6 \times 804 + 3 = 4827$; $0 \leq 3 < 6$. Each receives $804 + 3/6 = 1609/2$ meters; the remaining 3 meters is divided into 6 equal shares.

Final 3-5 minutes: discuss M01. Correct response: $1609/2$. Ask a learner to explain one wrong choice without relying on option position.

Look / listen for: place-aligned quotient digits, remainder smaller than divisor, a product-plus-remainder check, and a defensible context interpretation.

If stuck: If a quotient digit is missing, name the place of every dividend digit and show why a zero is needed when a partial dividend is smaller than the divisor. If a remainder is at least the divisor, ask whether another full group can be made.

Extension: produce a second valid representation or check, compare it with the first, and explain which is more useful here. Record item/date, individual work, reasoning, access, help, and next teaching step. Timing is flexible.

LESSON SCRIPT | I Do

I Do teaching moves

Optional bank: M05-M08 and O05-O08. Selected core: M05 and O05. Target B: Interpret both quotient and remainder in context and verify the result.

0-4 minutes: Use the worked teacher model. Point to each model unit or algorithm column. Say, “I will explain why each step keeps the quantity unchanged.”

Next 5-8 minutes: Teacher models the selected O item and explains each step; learners annotate a separate organizer.

Selected-task solution for the teacher: $6408 \div 9 = 712$ remainder 0. Use 64: write 7, multiply $7 \times 9 = 63$, subtract to leave 1; bring down the next digit. Use 10: write 1, multiply $1 \times 9 = 9$, subtract to leave 1; bring down the next digit. Use 18: write 2, multiply $2 \times 9 = 18$, subtract to leave 0. Check: $9 \times 712 + 0 = 6408$; $0 \leq 0 < 9$. Each receives $712 + 0/9 = 712$ meters; the remaining 0 meters is divided into 9 equal shares.

Final 3-5 minutes: discuss M05. Correct response: 712. Ask a learner to explain one wrong choice without relying on option position.

Look / listen for: place-aligned quotient digits, remainder smaller than divisor, a product-plus-remainder check, and a defensible context interpretation.

If stuck: If a quotient digit is missing, name the place of every dividend digit and show why a zero is needed when a partial dividend is smaller than the divisor. If a remainder is at least the divisor, ask whether another full group can be made.

Extension: produce a second valid representation or check, compare it with the first, and explain which is more useful here. Record item/date, individual work, reasoning, access, help, and next teaching step. Timing is flexible.

LESSON SCRIPT | We Do

We Do teaching moves

Optional bank: M09-M13 and O09-O13. Selected core: M09 and O09. Target A: Use long division fluently with dividends of at least four digits.

0-4 minutes: Start the selected O item together. Pause before a key grouping, regrouping, or factor decision. Say, “What would you write next, and what makes it valid?”

Next 5-8 minutes: Learners complete the selected O item; observe the actual model or algorithm and record supports.

Selected-task solution for the teacher: $25056 \div 32 = 783$ remainder 0. Use 250: write 7, multiply $7 \times 32 = 224$, subtract to leave 26; bring down the next digit. Use 265: write 8, multiply $8 \times 32 = 256$, subtract to leave 9; bring down the next digit. Use 96: write 3, multiply $3 \times 32 = 96$, subtract to leave 0. Check: $32 \times 783 + 0 = 25056$; $0 \leq 0 < 32$. The quotient is 783 and the remainder is 0. Example context: pack 25056 cards in groups of 32; 783 complete packs with 0 cards left.

Final 3-5 minutes: discuss M09. Correct response: 783 R 0. Ask a learner to explain one wrong choice without relying on option position.

Look / listen for: place-aligned quotient digits, remainder smaller than divisor, a product-plus-remainder check, and a defensible context interpretation.

If stuck: If a quotient digit is missing, name the place of every dividend digit and show why a zero is needed when a partial dividend is smaller than the divisor. If a remainder is at least the divisor, ask whether another full group can be made.

Extension: produce a second valid representation or check, compare it with the first, and explain which is more useful here. Record item/date, individual work, reasoning, access, help, and next teaching step. Timing is flexible.

LESSON SCRIPT | Collaborative practice

Collaborative practice teaching moves

Optional bank: M14-M18 and O14-O18. Selected core: M14 and O14. Target B: Interpret both quotient and remainder in context and verify the result.

0-3 minutes: Partner A calculates and explains. Partner B checks units and one step without supplying the answer. Switch roles on the last O item in this section; each person records individual work.

Next 5-8 minutes: Learners complete the selected O item; observe the actual model or algorithm and record supports.

Selected-task solution for the teacher: $8424 \div 27 = 312$ remainder 0. Use 84: write 3, multiply $3 \times 27 = 81$, subtract to leave 3; bring down the next digit. Use 32: write 1, multiply $1 \times 27 = 27$, subtract to leave 5; bring down the next digit. Use 54: write 2, multiply $2 \times 27 = 54$, subtract to leave 0. Check: $27 \times 312 + 0 = 8424$; $0 \leq 0 < 27$. 312 vehicles; the division is exact, so no extra vehicle is needed.

Final 3-5 minutes: discuss M14. Correct response: 312. Ask a learner to explain one wrong choice without relying on option position.

Look / listen for: place-aligned quotient digits, remainder smaller than divisor, a product-plus-remainder check, and a defensible context interpretation.

If stuck: If a quotient digit is missing, name the place of every dividend digit and show why a zero is needed when a partial dividend is smaller than the divisor. If a remainder is at least the divisor, ask whether another full group can be made.

Extension: produce a second valid representation or check, compare it with the first, and explain which is more useful here. Record item/date, individual work, reasoning, access, help, and next teaching step. Timing is flexible.

LESSON SCRIPT | Independent practice

Independent practice teaching moves

Optional bank: M19-M23 and O19-O23. Selected core: M19 and O19. Target B: Interpret both quotient and remainder in context and verify the result.

0-2 minutes: Read directions neutrally if needed. Say, “Show your steps and explain your check.” Provide no answer-supplying prompt; allow time for thought.

Next 5-8 minutes: Learners complete the selected O item; observe the actual model or algorithm and record supports.

Selected-task solution for the teacher: $9012 \div 4 = 2253$ remainder 0. Use 9: write 2, multiply $2 \times 4 = 8$, subtract to leave 1; bring down the next digit. Use 10: write 2, multiply $2 \times 4 = 8$, subtract to leave 2; bring down the next digit. Use 21: write 5, multiply $5 \times 4 = 20$, subtract to leave 1; bring down the next digit. Use 12: write 3, multiply $3 \times 4 = 12$, subtract to leave 0. Check: $4 \times 2253 + 0 = 9012$; $0 \leq 0 < 4$. 2253 full packs and 0 cards remain.

Final 3-5 minutes: discuss M19. Correct response: 2253 packs, 0 cards. Ask a learner to explain one wrong choice without relying on option position.

Look / listen for: place-aligned quotient digits, remainder smaller than divisor, a product-plus-remainder check, and a defensible context interpretation.

If stuck: If a quotient digit is missing, name the place of every dividend digit and show why a zero is needed when a partial dividend is smaller than the divisor. If a remainder is at least the divisor, ask whether another full group can be made.

Extension: produce a second valid representation or check, compare it with the first, and explain which is more useful here. Record item/date, individual work, reasoning, access, help, and next teaching step. Timing is flexible.

LESSON SCRIPT | Small-group reteach

Small-group reteach teaching moves

Optional bank: M24-M27 and O24-O27. Selected core: M24 and O24. Target B: Interpret both quotient and remainder in context and verify the result.

0-4 minutes: Ask the learner to show a previously difficult step. Locate the precise error; use the anchor to rebuild that step. Do not substitute a recognition item for the performance.

Next 5-8 minutes: Learners complete the selected O item; observe the actual model or algorithm and record supports.

Selected-task solution for the teacher: $5097 \div 17 = 299$ remainder 14. Use 50: write 2, multiply $2 \times 17 = 34$, subtract to leave 16; bring down the next digit. Use 169: write 9, multiply $9 \times 17 = 153$, subtract to leave 16; bring down the next digit. Use 167: write 9, multiply $9 \times 17 = 153$, subtract to leave 14. Check: $17 \times 299 + 14 = 5097$; $0 \leq 14 < 17$. 299 full packs and 14 cards remain.

Final 3-5 minutes: discuss M24. Correct response: 299 packs, 14 cards. Ask a learner to explain one wrong choice without relying on option position.

Look / listen for: place-aligned quotient digits, remainder smaller than divisor, a product-plus-remainder check, and a defensible context interpretation.

If stuck: If a quotient digit is missing, name the place of every dividend digit and show why a zero is needed when a partial dividend is smaller than the divisor. If a remainder is at least the divisor, ask whether another full group can be made.

Extension: produce a second valid representation or check, compare it with the first, and explain which is more useful here. Record item/date, individual work, reasoning, access, help, and next teaching step. Timing is flexible.

LESSON SCRIPT | Exit ticket

Exit ticket teaching moves

Optional bank: M28-M30 and O28-O30. Selected core: M28 and O28. Target B: Interpret both quotient and remainder in context and verify the result.

0-2 minutes: Ask for one fresh independent explanation. Say, “Show what your answer means, and one check that convinces you.”

Next 5-8 minutes: Learners complete the selected O item; observe the actual model or algorithm and record supports.

Selected-task solution for the teacher: $6051 \div 19 = 318$ remainder 9. Use 60: write 3, multiply $3 \times 19 = 57$, subtract to leave 3; bring down the next digit. Use 35: write 1, multiply $1 \times 19 = 19$, subtract to leave 16; bring down the next digit. Use 161: write 8, multiply $8 \times 19 = 152$, subtract to leave 9. Check: $19 \times 318 + 9 = 6051$; $0 \leq 9 < 19$. 318 full packs and 9 cards remain.

Final 3-5 minutes: discuss M28. Correct response: 318 packs, 9 cards. Ask a learner to explain one wrong choice without relying on option position.

Look / listen for: place-aligned quotient digits, remainder smaller than divisor, a product-plus-remainder check, and a defensible context interpretation.

If stuck: If a quotient digit is missing, name the place of every dividend digit and show why a zero is needed when a partial dividend is smaller than the divisor. If a remainder is at least the divisor, ask whether another full group can be made.

Extension: produce a second valid representation or check, compare it with the first, and explain which is more useful here. Record item/date, individual work, reasoning, access, help, and next teaching step. Timing is flexible.

REUSABLE STUDENT ORGANIZER

Make the structure visible

Name: _____ Date: _____

Estimate a quotient digit → multiply → subtract → compare remainder with divisor → bring down the next digit → retain necessary zero digits → interpret and check.

A. Quantities, units, estimate / factor relationships**B. My labelled model / algorithm / factor work****C. Check, explanation, and interpretation**

STUDENT CHOICE BANK

M01 and M02

M01 | Warm-up

4827 meters of cord is shared equally among 6 groups. Which exact length does each group receive?

A. $1609\frac{1}{2}$

B. 803

C. 802

D. 804

My check / reasoning: _____

M02 | Warm-up

7064 meters of cord is shared equally among 8 groups. Which exact length does each group receive?

A. 884

B. 881

C. 882

D. 883

My check / reasoning: _____

STUDENT OPEN / PERFORMANCE BANK

001 | Warm-up

Name: _____ Date: _____

Share 4827 meters of cord equally among 6 groups. What exact length does each receive? Show the complete long-division algorithm, including zero digits when needed. Check with multiplication and addition. Explain the quotient and remainder in the situation.

A. Model / algorithm / factor work**B. Check, units, and explanation**

STUDENT OPEN / PERFORMANCE BANK

002 | Warm-up

Name: _____ Date: _____

Share 7064 meters of cord equally among 8 groups. What exact length does each receive? Show the complete long-division algorithm, including zero digits when needed. Check with multiplication and addition. Explain the quotient and remainder in the situation.

A. Model / algorithm / factor work**B. Check, units, and explanation**

TEACHER-ONLY CHOICE KEYS

M01 and M02

M01 | target B | A. 1609/2

$4827 \div 6 = 804$ remainder 3. Use 48: write 8, multiply $8 \times 6 = 48$, subtract to leave 0; bring down the next digit. Use 2: write 0, multiply $0 \times 6 = 0$, subtract to leave 2; bring down the next digit. Use 27: write 4, multiply $4 \times 6 = 24$, subtract to leave 3. Check: $6 \times 804 + 3 = 4827$; $0 \leq 3 < 6$. Each receives $804 + \frac{3}{6} = 1609\frac{1}{2}$ meters; the remaining 3 meters is divided into 6 equal shares.

Possible reasoning behind each distractor (confirm with the learner):

803: subtracts one from the whole-number quotient and drops any fractional remainder.

802: subtracts two from the whole-number quotient and drops any fractional remainder.

804: drops the fractional share of the remainder.

M02 | target B | D. 883

$7064 \div 8 = 883$ remainder 0. Use 70: write 8, multiply $8 \times 8 = 64$, subtract to leave 6; bring down the next digit. Use 66: write 8, multiply $8 \times 8 = 64$, subtract to leave 2; bring down the next digit. Use 24: write 3, multiply $3 \times 8 = 24$, subtract to leave 0. Check: $8 \times 883 + 0 = 7064$; $0 \leq 0 < 8$. Each receives $883 + \frac{0}{8} = 883$ meters; the remaining 0 meters is divided into 8 equal shares.

Possible reasoning behind each distractor (confirm with the learner):

884: rounds every share up without enough cord.

881: subtracts two from the whole-number quotient and drops any fractional remainder.

882: subtracts one from the whole-number quotient and drops any fractional remainder.

TEACHER-ONLY PERFORMANCE KEY

001 | target B

$4827 \div 6 = 804$ remainder 3. Use 48: write 8, multiply $8 \times 6 = 48$, subtract to leave 0; bring down the next digit. Use 2: write 0, multiply $0 \times 6 = 0$, subtract to leave 2; bring down the next digit. Use 27: write 4, multiply $4 \times 6 = 24$, subtract to leave 3. Check: $6 \times 804 + 3 = 4827$; $0 \leq 3 < 6$. Each receives $804 + \frac{3}{6} = 1609\frac{1}{2}$ meters; the remaining 3 meters is divided into 6 equal shares.

$$\begin{array}{r}
 804 \\
 6 \overline{) 4827} \\
 \underline{- 48} \\
 2 \\
 \underline{- 0} \\
 27 \\
 \underline{- 24} \\
 3
 \end{array}$$

Accept mathematically equivalent notation and valid alternate models or factor trees. Require the representation / algorithm named in the task. Record computation, reasoning, and interpretation separately; a bare correct answer is incomplete evidence.

TEACHER-ONLY PERFORMANCE KEY

002 | target B

$7064 \div 8 = 883$ remainder 0. Use 70: write 8, multiply $8 \times 8 = 64$, subtract to leave 6; bring down the next digit. Use 66: write 8, multiply $8 \times 8 = 64$, subtract to leave 2; bring down the next digit. Use 24: write 3, multiply $3 \times 8 = 24$, subtract to leave 0. Check: $8 \times 883 + 0 = 7064$; $0 \leq 0 < 8$. Each receives $883 + 0/8 = 883$ meters; the remaining 0 meters is divided into 8 equal shares.

$$\begin{array}{r}
 883 \\
 8 \overline{) 7064} \\
 \underline{- 64} \\
 66 \\
 \underline{- 64} \\
 24 \\
 \underline{- 24} \\
 0
 \end{array}$$

Accept mathematically equivalent notation and valid alternate models or factor trees. Require the representation / algorithm named in the task. Record computation, reasoning, and interpretation separately; a bare correct answer is incomplete evidence.