

Plan, Solve and Check



Grade 4 | NC.4.OA.3

Teacher scripts • Visual models and organizers
30 choice + 30 open/performance tasks
Worked keys • Individual evidence records

Current NC standards: 2026-27 and 2027-28. A reusable bank across several sessions, not a single 60-item test.

Free sample | Contents

NC.4.OA.3 | Fourth Grade mathematics

This sample contains 19 complete selected pages from the 92-page resource, plus this sample contents page. Original printed page numbers are retained. Gaps are intentional.

Included original pages: 1-15, 30-31, 60, 75

Representative activities

M01: sample PDF page(s) 16; original page(s) 15

M02: sample PDF page(s) 16; original page(s) 15

O01: sample PDF page(s) 17; original page(s) 30

O02: sample PDF page(s) 18; original page(s) 31

Selected teacher prompts and keys: original page(s) 60, 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

Standard and learning targets

Solve two-step word problems involving the four operations with whole numbers.

- Use estimation strategies to assess reasonableness of answers.
- Interpret remainders in word problems.
- Represent problems using equations with a letter standing for the unknown quantity.

I can...

- Represent and solve two linked steps using the four operations and a letter for the unknown.
- Interpret a remainder according to the question, including leftovers and an extra container.
- Estimate before solving and use the estimate to judge reasonableness.

Essential question: How can a model and an equation explain why my answer makes sense? MP2 connects quantities to symbols; MP3 supports explanation and critique; MP5 selects tools; MP7 examines structure.

TEACHER GUIDE

Plan, access and materials

Use four sessions of about 20-30 minutes, adjusted to need. Session 1: warm-up and model (M01, O01, M05, O05). Session 2: shared and partner work (M09, O09, M14, O14). Session 3: independent evidence (M19, O19). Session 4: reteach and exit (M24, O24, M28, O28). Remaining tasks are optional spaced practice and fresh checks.

Prerequisites: Whole-number operations, equal-group division, basic estimation and following a two-event story.

Materials: pencil, paper and the supplied organizers. Optional large square blocks are teaching supports. All required diagrams are printed; no companion file is needed. Adults handle any cutting. Contexts are invented for instruction.

Vocabulary: estimate, reasonable, remainder, quotient, capacity, unknown. Model and gesture before asking for formal language. Invite explanations in a familiar language, then connect the terms.

Allow neutral read-aloud, enlarged print, breaks, AAC, signing and dictated explanations. Do not score handwriting, decoding or accent. Preserve the mathematical task: naming an operation, providing a factor or completing a rule is an answer-supplying cue, not neutral access.

Collect individual evidence even during partner work. Observe models, equations, calculation and interpretation separately. Keep keys and worked examples out of view during independent checks. No fixed speed cutoff or official mastery threshold is claimed.

TEACHER GUIDE

Contents and coverage

Guide and model pages come first, followed by seven teaching scripts, the student choice and performance banks, teacher-only worked keys, scoring, a reusable evidence record and sources. Print only selected student pages.

Warm-up: M01-M04 / O01-O04

I Do: M05-M08 / O05-O08

We Do: M09-M13 / O09-O13

Collaborative practice: M14-M18 / O14-O18

Independent practice: M19-M23 / O19-O23

Small-group reteach: M24-M27 / O24-O27

Exit ticket: M28-M30 / O28-O30

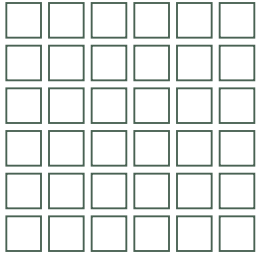
Every open task collects the actual performance, not just recognition. Use task IDs to match each page with its key. Targets printed with keys clarify the evidence expected. Revisit with a fresh item rather than treating a corrected response as new independent evidence.

WORKED TEACHER MODEL

A remainder changes meaning

27 students + 14 adults = 41 people. Vans hold 6.

36 seats in six full vans



5 people still need seats



$27 + 14 = 6 \times q + r$; $q = 6$ full vans, $r = 5$ people.

The leftover people need one more van: $n = q + 1 = 7$.

Here n is the total number of whole vans needed.

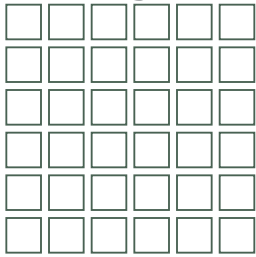
Check: $6 \times 7 = 42$ seats; $6 \times 6 = 36$ is too few.

Estimate: $27 + 14$ is near 42, and $42 \div 6 = 7$. The exact answer fits the estimate. For 41 pencils in FULL packs of 6, however, the answer is 6 full packs with 5 pencils left. The question decides what to do with the remainder.

STUDENT VISUAL TOOL

Groups and leftovers

Use this picture during shared practice: 41 people, with 6 seats in each van. Each square represents one person. Circle each full group; decide what the leftover group needs.

Six full groups**People left over**

Both steps / van count / explain the remainder

STUDENT TOOL

Reusable reasoning organizer

Name: _____ Date: _____

Use words, drawings, blocks or equations. Label quantities.

Known quantities / final question / estimate**Step 1: model and calculate****Step 2: model and calculate****Unknown equation / remainder / reasonable answer**

TEACHER GUIDE

Warm-up teaching script

Select M01 and O01. Save the remaining items in this section for later practice. Timing is flexible; the whole bank is never assigned at once.

1-2 minutes | Launch

Ask: "What happens before we can answer the final question?" Have learners retell the two linked steps without computing.

3-6 minutes | Model or elicit

Use O01 before M01 when collecting independent evidence. During I Do, think aloud and connect each drawing part to its equation. During We Do, pause for learners to suggest the next step. During independent and exit work, remain neutral.

3-5 minutes | Examine

Listen for: Represent and solve two linked steps using the four operations and a letter for the unknown. Estimate before solving and use the estimate to judge reasonableness. Ask: "What does each quantity mean? How can you check that your model matches?"

2-4 minutes | Respond

After recording the first response, use the worked model or blank organizer to revisit the structure. Ask the learner to locate the first mismatch. Record any supplied step separately; do not overwrite the initial evidence.

1-3 minutes | Close

Ask the learner to create a different example following the same structure and justify it. Record the exact response, support and next teaching step. Use a fresh item from this section on another day to check transfer.

TEACHER GUIDE

I Do teaching script

Select M05 and O05. Save the remaining items in this section for later practice. Timing is flexible; the whole bank is never assigned at once.

1-2 minutes | Launch

Model 27 students plus 14 adults, six seats per van: $27+14=41$; $41\div6=6$ remainder 5. Seven vans are needed. Estimate $42\div6=7$.

3-6 minutes | Model or elicit

Use O05 before M05 when collecting independent evidence. During I Do, think aloud and connect each drawing part to its equation. During We Do, pause for learners to suggest the next step. During independent and exit work, remain neutral.

3-5 minutes | Examine

Listen for: Interpret a remainder according to the question, including leftovers and an extra container. Estimate before solving and use the estimate to judge reasonableness. Ask: "What does each quantity mean? How can you check that your model matches?"

2-4 minutes | Respond

After recording the first response, use the worked model or blank organizer to revisit the structure. Ask the learner to locate the first mismatch. Record any supplied step separately; do not overwrite the initial evidence.

1-3 minutes | Close

Ask the learner to create a different example following the same structure and justify it. Record the exact response, support and next teaching step. Use a fresh item from this section on another day to check transfer.

TEACHER GUIDE

We Do teaching script

Select M09 and O09. Save the remaining items in this section for later practice. Timing is flexible; the whole bank is never assigned at once.

1-2 minutes | Launch

Compare 41 objects packed six per box: six FULL boxes, five loose. Ask why the same division gives a different requested answer from vans.

3-6 minutes | Model or elicit

Use O09 before M09 when collecting independent evidence. During I Do, think aloud and connect each drawing part to its equation. During We Do, pause for learners to suggest the next step. During independent and exit work, remain neutral.

3-5 minutes | Examine

Listen for: Represent and solve two linked steps using the four operations and a letter for the unknown. Estimate before solving and use the estimate to judge reasonableness. Ask: "What does each quantity mean? How can you check that your model matches?"

2-4 minutes | Respond

After recording the first response, use the worked model or blank organizer to revisit the structure. Ask the learner to locate the first mismatch. Record any supplied step separately; do not overwrite the initial evidence.

1-3 minutes | Close

Ask the learner to create a different example following the same structure and justify it. Record the exact response, support and next teaching step. Use a fresh item from this section on another day to check transfer.

TEACHER GUIDE

Collaborative practice teaching script

Select M14 and O14. Save the remaining items in this section for later practice. Timing is flexible; the whole bank is never assigned at once.

1-2 minutes | Launch

Partners choose operations independently, then compare what n represents. Require each learner's estimate, equation, both steps and contextual answer.

3-6 minutes | Model or elicit

Use O14 before M14 when collecting independent evidence. During I Do, think aloud and connect each drawing part to its equation. During We Do, pause for learners to suggest the next step. During independent and exit work, remain neutral.

3-5 minutes | Examine

Listen for: Represent and solve two linked steps using the four operations and a letter for the unknown. Estimate before solving and use the estimate to judge reasonableness. Ask: "What does each quantity mean? How can you check that your model matches?"

2-4 minutes | Respond

After recording the first response, use the worked model or blank organizer to revisit the structure. Ask the learner to locate the first mismatch. Record any supplied step separately; do not overwrite the initial evidence.

1-3 minutes | Close

Ask the learner to create a different example following the same structure and justify it. Record the exact response, support and next teaching step. Use a fresh item from this section on another day to check transfer.

TEACHER GUIDE

Independent practice teaching script

Select M19 and O19. Save the remaining items in this section for later practice. Timing is flexible; the whole bank is never assigned at once.

1-2 minutes | Launch

Read neutrally. Do not underline words that select an operation. Require a check tied to an estimate and a written interpretation of any remainder.

3-6 minutes | Model or elicit

Use O19 before M19 when collecting independent evidence. During I Do, think aloud and connect each drawing part to its equation. During We Do, pause for learners to suggest the next step. During independent and exit work, remain neutral.

3-5 minutes | Examine

Listen for: Represent and solve two linked steps using the four operations and a letter for the unknown. Estimate before solving and use the estimate to judge reasonableness. Ask: "What does each quantity mean? How can you check that your model matches?"

2-4 minutes | Respond

After recording the first response, use the worked model or blank organizer to revisit the structure. Ask the learner to locate the first mismatch. Record any supplied step separately; do not overwrite the initial evidence.

1-3 minutes | Close

Ask the learner to create a different example following the same structure and justify it. Record the exact response, support and next teaching step. Use a fresh item from this section on another day to check transfer.

TEACHER GUIDE

Small-group reteach teaching script

Select M24 and O24. Save the remaining items in this section for later practice. Timing is flexible; the whole bank is never assigned at once.

1-2 minutes | Launch

If a learner stops after one step, map the intermediate quantity and final question in separate boxes. If rounding up automatically, ask what a partial group means in this story.

3-6 minutes | Model or elicit

Use O24 before M24 when collecting independent evidence. During I Do, think aloud and connect each drawing part to its equation. During We Do, pause for learners to suggest the next step. During independent and exit work, remain neutral.

3-5 minutes | Examine

Listen for: Interpret a remainder according to the question, including leftovers and an extra container. Estimate before solving and use the estimate to judge reasonableness. Ask: "What does each quantity mean? How can you check that your model matches?"

2-4 minutes | Respond

After recording the first response, use the worked model or blank organizer to revisit the structure. Ask the learner to locate the first mismatch. Record any supplied step separately; do not overwrite the initial evidence.

1-3 minutes | Close

Ask the learner to create a different example following the same structure and justify it. Record the exact response, support and next teaching step. Use a fresh item from this section on another day to check transfer.

TEACHER GUIDE

Exit ticket teaching script

Select M28 and O28. Save the remaining items in this section for later practice. Timing is flexible; the whole bank is never assigned at once.

1-2 minutes | Launch

Use a new context. Record equation, computations, remainder meaning and estimate separately. An estimate supports but does not prove the exact answer.

3-6 minutes | Model or elicit

Use O28 before M28 when collecting independent evidence. During I Do, think aloud and connect each drawing part to its equation. During We Do, pause for learners to suggest the next step. During independent and exit work, remain neutral.

3-5 minutes | Examine

Listen for: Interpret a remainder according to the question, including leftovers and an extra container. Estimate before solving and use the estimate to judge reasonableness. Ask: "What does each quantity mean? How can you check that your model matches?"

2-4 minutes | Respond

After recording the first response, use the worked model or blank organizer to revisit the structure. Ask the learner to locate the first mismatch. Record any supplied step separately; do not overwrite the initial evidence.

1-3 minutes | Close

Ask the learner to create a different example following the same structure and justify it. Record the exact response, support and next teaching step. Use a fresh item from this section on another day to check transfer.

STUDENT BANK

Choice practice 1-2

M01 A shop has 33 red pencils and 19 blue pencils. It mixes them into full packs of 4. How many FULL packs can it make?

- | | |
|-------|------|
| A. 11 | B. 3 |
| C. 13 | D. 8 |

Choose one. Be ready to explain your reasoning.

M02 A shop has 36 red pencils and 26 blue pencils. It mixes them into full packs of 5. How many FULL packs can it make?

- | | |
|-------|-------|
| A. 2 | B. 13 |
| C. 22 | D. 12 |

Choose one. Be ready to explain your reasoning.

STUDENT PERFORMANCE

001 | Warm-up

A team has 4 boxes of 6 markers and 19 loose markers. How many markers does it have? Estimate first. Write an equation using n for the requested unknown. Show both steps, explain any remainder, and check whether your answer is reasonable.

Estimate and unknown equation

Step 1 / step 2 / remainder / reasonableness check

STUDENT PERFORMANCE

002 | Warm-up

A club has 61 sheets of paper. It gives 5 groups 7 sheets each. How many sheets remain? Estimate first. Write an equation using n for the requested unknown. Show both steps, explain any remainder, and check whether your answer is reasonable.

Estimate and unknown equation

Step 1 / step 2 / remainder / reasonableness check

TEACHER ONLY

M keys 1-2

M01: C. 13

Target: Interpret a remainder according to the question, including leftovers and an extra container. Estimate before solving and use the estimate to judge reasonableness.

$33 + 19 = 4 \times n + r$, with $0 \leq r < 4$. 52 pencils $\div 4 = 13$ remainder 0. It makes 13 full packs, with 0 pencils unpacked. A partial pack is not counted. Use nearby 52 pencils: $52 \div 4 = 13$ packs. 13 full packs is close; 52 pencils are packed and 0 remain.

Other choices: 11, 3, 8. Each fails the stated calculation or rule. Ask the learner to show the operation/model before attributing a misconception; one choice alone cannot diagnose thinking.

M02: D. 12

Target: Interpret a remainder according to the question, including leftovers and an extra container. Estimate before solving and use the estimate to judge reasonableness.

$36 + 26 = 5 \times n + r$, with $0 \leq r < 5$. 62 pencils $\div 5 = 12$ remainder 2. It makes 12 full packs, with 2 pencils unpacked. A partial pack is not counted. Use nearby 60 pencils: $60 \div 5 = 12$ packs. 12 full packs is close; 60 pencils are packed and 2 remain.

Other choices: 2, 13, 22. Each fails the stated calculation or rule. Ask the learner to show the operation/model before attributing a misconception; one choice alone cannot diagnose thinking.

TEACHER ONLY

0 keys 1-2

001: 43

Target: Represent and solve two linked steps using the four operations and a letter for the unknown. Estimate before solving and use the estimate to judge reasonableness.

$n = (4 \times 6) + 19$. $4 \times 6 = 24$ boxed markers; $24 + 19 = 43$ markers. Round the boxed total and loose count to tens: $20 + 20 = 40$. The exact 43 differs by 3, consistent with rounding both quantities.

Accept equivalent correct models and explanations. Score each requested dimension separately; the sample is not required wording.

002: 26

Target: Represent and solve two linked steps using the four operations and a letter for the unknown. Estimate before solving and use the estimate to judge reasonableness.

$n = 61 - (5 \times 7)$. $5 \times 7 = 35$ sheets given away. $61 - 35 = 26$ sheets remain. Round to tens: $60 - 40 = 20$. The exact answer 26 differs by 6, within the combined rounding changes.

Accept equivalent correct models and explanations. Score each requested dimension separately; the sample is not required wording.