

Facts, Fluency and Families



Grade 3 | NC.3.OA.7

Teacher scripts • Original visual tools • 60-item bank
Worked solutions • Individual performance records

Current NC standards for 2026-27 and 2027-28. Select short lessons across several sessions. This reusable bank is not a single 60-item test.

Free sample | Contents

NC.3.OA.7 | Third 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

Demonstrate fluency with multiplication and division with factors, quotients and divisors up to and including 10.

- Know from memory all products with factors up to and including 10.
- Illustrate and explain using the relationship between multiplication and division.
- Determine the unknown whole number in a multiplication or division equation relating three whole numbers.

Learning targets

- Recall products with factors 0-10 from memory; use efficient, accurate division facts with divisors 1-10 and quotients 0-10.
- Illustrate and explain the multiplication-division relationship.
- Find an unknown product, factor, dividend, divisor or quotient when it is uniquely determined.

Mathematical practices: MP2 connects quantities and symbols; MP3 explains and critiques reasoning; MP5 chooses useful tools; MP7 uses mathematical structure. Record actual performances, not only correct choices.

TEACHER GUIDE

Plan, access and materials

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

Prerequisites: equal groups and fact families for operations; rows, columns and skip-counting for patterns; place-value units and exchanges for base-ten work. Check these before increasing complexity.

Materials: pencil, blank paper and the supplied reproducible tools. Optional large blocks support teaching; adults prepare any cut materials. All contexts are invented for instruction.

Read directions neutrally. Allow speech, signing, AAC, dictation and drawing. Enlarge print and offer breaks. Do not score handwriting, spelling or decoding. Record access supports separately from hints that supply a mathematical step.

Vocabulary: factor, product, divisor, quotient, equal groups, unknown, equation, pattern, estimate, expanded form and exchange. Invite learners to point, model and explain in a familiar language.

Fluency includes accuracy, efficiency and flexibility. For products, NC.3.OA.7 also requires memory. Observe initial answers before tools, then assess reasoning afterward. Do not invent a fixed speed cutoff or infer full fluency from multiple-choice recognition.

TEACHER GUIDE

Contents and bank navigation

Following these guide pages: visual models and reproducible tools; seven teaching scripts; choice bank; open performance bank; teacher-only worked keys; scoring and evidence records; source notes. Each page has a footer number; each task has a stable ID.

Warm-up: M01-M04 and O01-O04

I Do: M05-M08 and O05-O08

We Do: M09-M13 and O09-O13

Collaborative practice: M14-M18 and O14-O18

Independent practice: M19-M23 and O19-O23

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

Exit ticket: M28-M30 and O28-O30

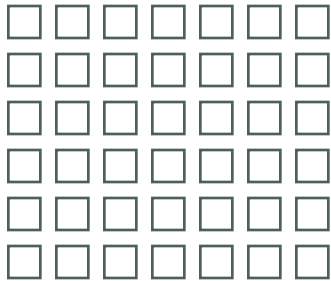
Give each learner their own response opportunity during partner work. Print only selected student pages. Keep worked examples, answers and answer-supplying support out of view during independent evidence collection.

WORKED TEACHER MODEL

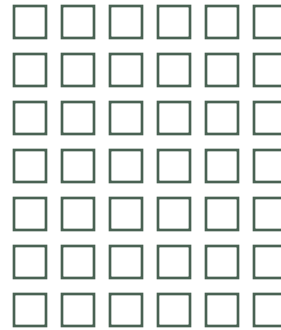
Equal groups connect the facts

$$6 \times 7 = 42; 42 \div 7 = 6; 42 \div 6 = 7$$

6 rows, 7 in each row



Turned: 7 rows, 6 in each



Say: "The number of squares does not change when I turn the array. Division asks how many groups or how many in each group make this same total."

$5 \times 7 = 35$ and $1 \times 7 = 7$, so $6 \times 7 = 42$. This is a useful derived strategy while building recall. A model-assisted answer is not evidence that the fact was known from memory.

REUSABLE STUDENT SUPPORT

Blank model and fact-family mat

Use after the initial independent response. Draw equal groups or an array. Label group count, group size and total.

Model A**Model B: turn or regroup the same total****Multiplication equation / related division equation**

REPRODUCIBLE TEACHER RECORD

Observe the full fact range

Teacher prompts, not a student answer chart. Across days, ask each product with factors 0-10 in a mixed order. Record the first response: R = recalled; D = derived; E = observed error; N/O = insufficient evidence. No timing threshold.

×	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Zero-factor facts: 0×0 ___ 0×1 ___ 0×2 ___ 0×3 ___ 0×4 ___ 0×5 ___
 0×6 ___ 0×7 ___ 0×8 ___ 0×9 ___ 0×10 ___; also ask reversed orders.
Division: for each divisor $d = 1-10$ and quotient $q = 0-10$, ask $(d \times q) \div d$. Record a separate dated sheet; never use $d = 0$ (including $0 \div 0$).

TEACHER GUIDE

Warm-up teaching script

Select M01 and O01; keep M02-M04 and O02-O04 for later evidence. Times are flexible teaching segments, not test limits.

1-2 minutes | Launch

Ask: "What does each factor count? Show three groups of four." Listen for equal groups, not adding the two factors.

3-6 minutes | Elicit

Use O01 before the choice item when assessing independent performance. Ask: "What do the quantities mean? What will you show?" During I Do, think aloud; during We Do invite each next step; during independent/exit work remain neutral.

3-5 minutes | Examine evidence

Ask: "How does your representation match your equation? Why does that step work?" Listen for the specific target: Recall products with factors 0-10 from memory; use efficient, accurate division facts with divisors 1-10 and quotients 0-10.

2-4 minutes | Respond

If reasoning is unclear, ask for a new example or a check. After recording the initial response, use the model page to rebuild the relevant structure. Label this later work as supported; do not replace the first record.

1-3 minutes | Close

Record the exact response, strategy, representation, explanation and support. Extension: create a new example that uses the same structure and explain why it fits. Select a fresh item from this section to check transfer on another day.

TEACHER GUIDE

I Do teaching script

Select M05 and O05; keep M06-M08 and O06-O08 for later evidence. Times are flexible teaching segments, not test limits.

1-2 minutes | Launch

Show the 6-by-7 array. Say: "I know $5 \times 7 = 35$; one more 7 makes 42. The same array shows $42 \div 7 = 6$." Then cover the model before recalling a fresh fact.

3-6 minutes | Elicit

Use O05 before the choice item when assessing independent performance. Ask: "What do the quantities mean? What will you show?" During I Do, think aloud; during We Do invite each next step; during independent/exit work remain neutral.

3-5 minutes | Examine evidence

Ask: "How does your representation match your equation? Why does that step work?" Listen for the specific target: Recall products with factors 0-10 from memory; use efficient, accurate division facts with divisors 1-10 and quotients 0-10.

2-4 minutes | Respond

If reasoning is unclear, ask for a new example or a check. After recording the initial response, use the model page to rebuild the relevant structure. Label this later work as supported; do not replace the first record.

1-3 minutes | Close

Record the exact response, strategy, representation, explanation and support. Extension: create a new example that uses the same structure and explain why it fits. Select a fresh item from this section to check transfer on another day.

TEACHER GUIDE

We Do teaching script

Select M09 and O09; keep M10-M13 and O10-O13 for later evidence. Times are flexible teaching segments, not test limits.

1-2 minutes | Launch

Use $8 \times n = 56$. Ask: "Which multiplication fact connects 8 and 56? How can division check it?" Record $n = 7$ and $56 \div 8 = 7$.

3-6 minutes | Elicit

Use O09 before the choice item when assessing independent performance. Ask: "What do the quantities mean? What will you show?" During I Do, think aloud; during We Do invite each next step; during independent/exit work remain neutral.

3-5 minutes | Examine evidence

Ask: "How does your representation match your equation? Why does that step work?" Listen for the specific target: Recall products with factors 0-10 from memory; use efficient, accurate division facts with divisors 1-10 and quotients 0-10.

2-4 minutes | Respond

If reasoning is unclear, ask for a new example or a check. After recording the initial response, use the model page to rebuild the relevant structure. Label this later work as supported; do not replace the first record.

1-3 minutes | Close

Record the exact response, strategy, representation, explanation and support. Extension: create a new example that uses the same structure and explain why it fits. Select a fresh item from this section to check transfer on another day.

TEACHER GUIDE

Collaborative practice teaching script

Select M14 and O14; keep M15-M18 and O15-O18 for later evidence. Times are flexible teaching segments, not test limits.

1-2 minutes | Launch

One partner names a fact; the other gives a related division fact and explains the group meaning. Switch roles. Record each learner separately.

3-6 minutes | Elicit

Use O14 before the choice item when assessing independent performance. Ask: "What do the quantities mean? What will you show?" During I Do, think aloud; during We Do invite each next step; during independent/exit work remain neutral.

3-5 minutes | Examine evidence

Ask: "How does your representation match your equation? Why does that step work?" Listen for the specific target: Find an unknown product, factor, dividend, divisor or quotient when it is uniquely determined.

2-4 minutes | Respond

If reasoning is unclear, ask for a new example or a check. After recording the initial response, use the model page to rebuild the relevant structure. Label this later work as supported; do not replace the first record.

1-3 minutes | Close

Record the exact response, strategy, representation, explanation and support. Extension: create a new example that uses the same structure and explain why it fits. Select a fresh item from this section to check transfer on another day.

TEACHER GUIDE

Independent practice teaching script

Select M19 and O19; keep M20-M23 and O20-O23 for later evidence. Times are flexible teaching segments, not test limits.

1-2 minutes | Launch

Hide tables and worked examples. Record initial responses before showing choices or allowing models. Afterward invite an illustration to assess the relationship separately.

3-6 minutes | Elicit

Use O19 before the choice item when assessing independent performance. Ask: "What do the quantities mean? What will you show?" During I Do, think aloud; during We Do invite each next step; during independent/exit work remain neutral.

3-5 minutes | Examine evidence

Ask: "How does your representation match your equation? Why does that step work?" Listen for the specific target: Find an unknown product, factor, dividend, divisor or quotient when it is uniquely determined.

2-4 minutes | Respond

If reasoning is unclear, ask for a new example or a check. After recording the initial response, use the model page to rebuild the relevant structure. Label this later work as supported; do not replace the first record.

1-3 minutes | Close

Record the exact response, strategy, representation, explanation and support. Extension: create a new example that uses the same structure and explain why it fits. Select a fresh item from this section to check transfer on another day.

TEACHER GUIDE

Small-group reteach teaching script

Select M24 and O24; keep M25-M27 and O25-O27 for later evidence. Times are flexible teaching segments, not test limits.

1-2 minutes | Launch

If a fact is not yet recalled, split one factor into a known fact plus another group. Build the relationship, then revisit without support later. Never divide by zero.

3-6 minutes | Elicit

Use O24 before the choice item when assessing independent performance. Ask: "What do the quantities mean? What will you show?" During I Do, think aloud; during We Do invite each next step; during independent/exit work remain neutral.

3-5 minutes | Examine evidence

Ask: "How does your representation match your equation? Why does that step work?" Listen for the specific target: Find an unknown product, factor, dividend, divisor or quotient when it is uniquely determined.

2-4 minutes | Respond

If reasoning is unclear, ask for a new example or a check. After recording the initial response, use the model page to rebuild the relevant structure. Label this later work as supported; do not replace the first record.

1-3 minutes | Close

Record the exact response, strategy, representation, explanation and support. Extension: create a new example that uses the same structure and explain why it fits. Select a fresh item from this section to check transfer on another day.

TEACHER GUIDE

Exit ticket teaching script

Select M28 and O28; keep M29-M30 and O29-O30 for later evidence. Times are flexible teaching segments, not test limits.

1-2 minutes | Launch

Ask for a fresh product, a division result and an unknown. Record recall versus derived strategy separately; do not impose seconds-per-fact cutoffs.

3-6 minutes | Elicit

Use O28 before the choice item when assessing independent performance. Ask: "What do the quantities mean? What will you show?" During I Do, think aloud; during We Do invite each next step; during independent/exit work remain neutral.

3-5 minutes | Examine evidence

Ask: "How does your representation match your equation? Why does that step work?" Listen for the specific target: Find an unknown product, factor, dividend, divisor or quotient when it is uniquely determined.

2-4 minutes | Respond

If reasoning is unclear, ask for a new example or a check. After recording the initial response, use the model page to rebuild the relevant structure. Label this later work as supported; do not replace the first record.

1-3 minutes | Close

Record the exact response, strategy, representation, explanation and support. Extension: create a new example that uses the same structure and explain why it fits. Select a fresh item from this section to check transfer on another day.

STUDENT BANK

Choice practice 1-2

M01 Find n : $0 \times 7 = n$.

A. 0

B. 5

C. 7

D. 10

Choose one. Explain your thinking to your teacher.

M02 Find n : $100 \div 10 = n$.

A. 0

B. 9

C. 10

D. 20

Choose one. Explain your thinking to your teacher.

STUDENT PERFORMANCE

001 | Warm-up

Find n : $5 \times 5 = n$. First give your answer without a chart or model. Then draw an equal-group or array model and explain a related multiplication and division equation.

First response (before support)

Afterward: model / related equations / explanation

STUDENT PERFORMANCE

002 | Warm-up

Find n : $63 \div 9 = n$. First give your answer without a chart or model. Then draw an equal-group or array model and explain a related multiplication and division equation.

First response (before support)

Afterward: model / related equations / explanation

TEACHER ONLY

M keys 1-2

M01: A. 0

$n = 0$. 0 equal groups of 7 have 0 objects. A model can show 0 rows of 7 squares; total 0. Zero groups have no objects. $0 \times 7 = 0$ and $0 \div 7 = 0$. Division by zero is undefined and is not a related fact.

Diagnostic follow-up: 5: Incorrect magnitude; ask the learner to show the calculation and compare it with the required operation or pattern. 7: Adds factors rather than multiplying or using the inverse relationship. 10: Incorrect magnitude; ask the learner to show the calculation and compare it with the required operation or pattern.

M02: C. 10

$n = 10$. $10 \times 10 = 100$, so $100 \div 10 = 10$. A model can show 10 rows of 10 squares; total 100. Related equations: $10 \times 10 = 100$; $10 \times 10 = 100$; $100 \div 10 = 10$; $100 \div 10 = 10$. The same total is organized into equal groups; division recovers a group count or size.

Diagnostic follow-up: 0: Incorrect magnitude; ask the learner to show the calculation and compare it with the required operation or pattern. 9: One group or one unit too few; inspect the chosen fact. 20: Adds factors rather than multiplying or using the inverse relationship.

TEACHER ONLY

0 keys 1-2

001: 25

$n = 25$. 5 equal groups of 5 have 25 objects. A model can show 5 rows of 5 squares; total 25. Related equations: $5 \times 5 = 25$; $5 \times 5 = 25$; $25 \div 5 = 5$; $25 \div 5 = 5$. The same total is organized into equal groups; division recovers a group count or size.

Accept equivalent accurate models/equations and explanations. Evaluate the requested reasoning separately from the numerical answer.

002: 7

$n = 7$. $9 \times 7 = 63$, so $63 \div 9 = 7$. A model can show 7 rows of 9 squares; total 63. Related equations: $7 \times 9 = 63$; $9 \times 7 = 63$; $63 \div 9 = 7$; $63 \div 7 = 9$. The same total is organized into equal groups; division recovers a group count or size.

Accept equivalent accurate models/equations and explanations. Evaluate the requested reasoning separately from the numerical answer.