

NORTH CAROLINA MATHEMATICS

Pairs, Equal Groups, Odd and Even



Grade 2 | Operations and Algebraic Thinking

NC.2.OA.3

Pair and count by twos, test two equal groups, and express even totals as two equal addends.

Seven instructional sections; 30 multiple-choice items and 30 open/performance tasks. Select short sessions across days. This is a reusable bank, not a 60-item test.

Teacher scripts, original block models, student organizers, detailed keys, evidence records, differentiation, and sources.

Aligned to current NC standards used in 2026-27 and 2027-28. Revised standards adopted in 2026 begin in 2028-29.

Free sample | Contents

NC.2.OA.3 | Second Grade mathematics

This sample contains 21 complete selected pages from the 81-page resource, plus this sample contents page. Original printed page numbers are retained. Gaps are intentional.

Included original pages: 1-18, 33-34, 66

Representative activities

M01: sample PDF page(s) 19; original page(s) 18

M02: sample PDF page(s) 19; original page(s) 18

O01: sample PDF page(s) 20; original page(s) 33

O02: sample PDF page(s) 21; original page(s) 34

Selected teacher prompts and keys: original page(s) 2, 66

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

Choose a short-session pathway

Print only selected learner pages. Keep teacher models and all keys separate. The first portion of the bank holds choice pages; the second holds open/performance pages. Match IDs, not page proximity.

Day 1 (15-20 minutes): warm-up and I Do. Day 2: We Do. Day 3: collaborative practice. Day 4: independent practice and a short needs-based group. Day 5: exit evidence and revisit. Split a session further when needed.

Suggested core: M01/O01, M05/O05, M09/O09, M14/O14, M19/O19, M24/O24, M28/O28. Before teaching, choose additional tasks to cover every target below. Remaining items are for later dates and fresh evidence.

Allocation for both banks: warm-up 01-04; I Do 05-08; We Do 09-13; collaboration 14-18; independent 19-23; reteach 24-27; exit 28-30. Only selected examples are used in a lesson.

Contents: exact standard and targets; access and preparation; worked models; seven phase scripts; blank tools; choice bank; open bank; scoring and evidence records; inquiry and extension; worked keys; sources.

Use mathematical practices through sense-making, models, explaining a choice, checking, and revising. A correct multiple-choice selection does not replace the standard's actual performance.

TEACHER GUIDE

Exact NC standard

NC.2.OA.3: Determine whether a group of objects, within 20, has an odd or even number of members by:

- Pairing objects, then counting them by 2s.
- Determining whether objects can be placed into two equal groups.
- Writing an equation to express an even number as a sum of two equal addends.

Source: NC DPI Second Grade Quick Reference Guide. Current source-verified standard, not a Common Core substitution.

Essential question: How do pairs and equal groups explain odd and even?

TEACHER GUIDE

Learning targets and evidence

A: Pair objects and count by twos

B: Determine whether two equal groups are possible

C: Write an even total as two equal addends

Collect the actual performance named by the target, plus an explanation or check in any accessible mode. Target IDs appear in the included worked keys; use them with the evidence record.

Boundaries: Groups contain 1-20 whole objects. Even-number equations use exactly two equal whole-number addends. Odd totals cannot be split equally without splitting objects.

Use fresh tasks on different dates before concluding that a skill is reliable. This packet supplies instructional evidence, not state endorsement or an official mastery threshold.

TEACHER GUIDE

Prepare, access, and language

Prerequisites: count objects one-to-one; connect numerals and quantities; understand joining, removing, and equal quantities. Briefly check these before introducing symbolic work.

Materials: pencils, crayons, blank paper, and large age-appropriate blocks or counters; 100 for OA.1 if needed, 20 for OA.2/OA.3, 25 for OA.4. For quantities to 100, groups of ten may replace loose objects. Adults handle cutting. All printed diagrams are conceptual models, not scale-measurement tools.

Vocabulary: odd, even, pair, leftover, equal groups, equal addends.

Read directions and choices neutrally. Allow oral, signed, AAC, pointed, drawn, built, or dictated responses. Enlarge print or use tactile blocks as access requires. Do not give a missing number, pair the child's objects, or supply the next operation during independent evidence.

Separate access help from mathematical cues in the record. Do not score decoding, spelling, handwriting, accent, or speech speed. If evidence is inaccessible or unclear, record N/O and revise access.

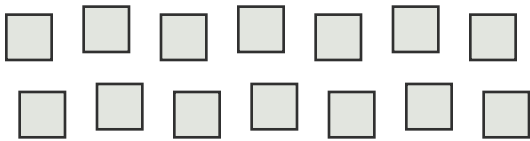
Visual support: original loose square blocks give actual quantities without pre-pairing them. Learners create pairs and equal groups in separate workspaces.

TEACHER MODEL | ADULT ONLY

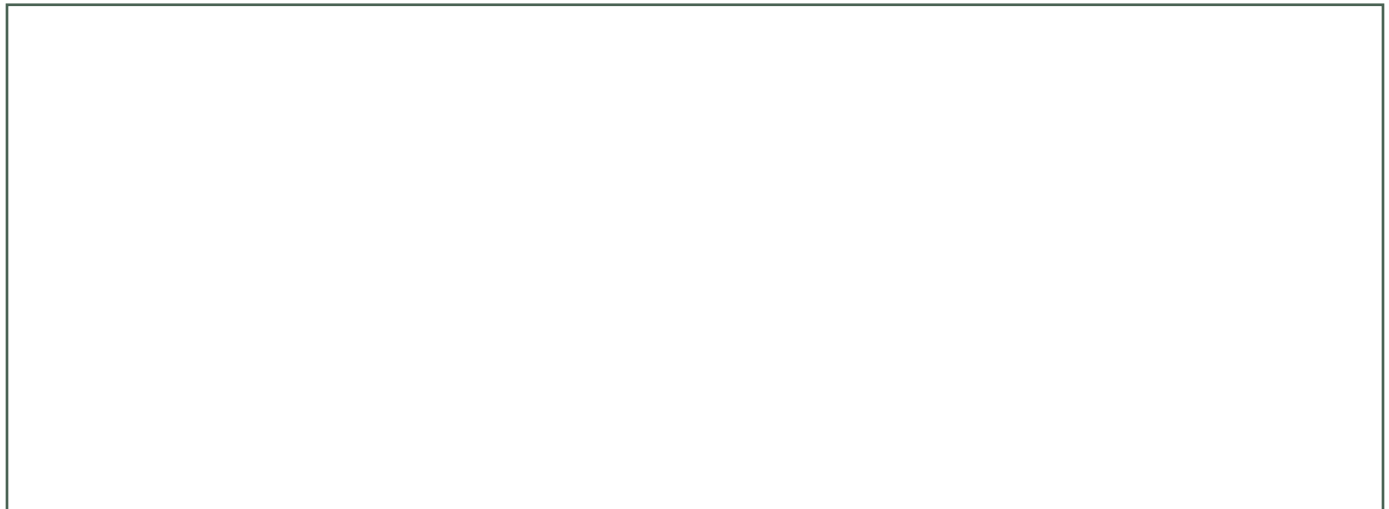
Pair and count

Show 14 loose blocks. Say: "I put every block with one partner." Make 7 pairs and count 2, 4, 6, 8, 10, 12, 14. No block is left, so 14 is even. Do not confuse 7 pairs with 14 individual blocks.

Say: "What does each part of the picture mean? What could we check?" Let the learner connect actions, the diagram, and the equation. These completed models are for instruction; keep them covered during fresh independent checks.



Rearrange with physical blocks; connect the explanation

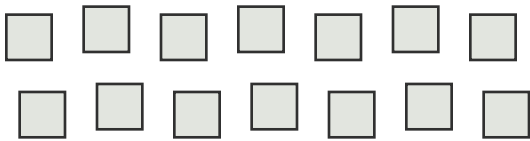


TEACHER MODEL | ADULT ONLY

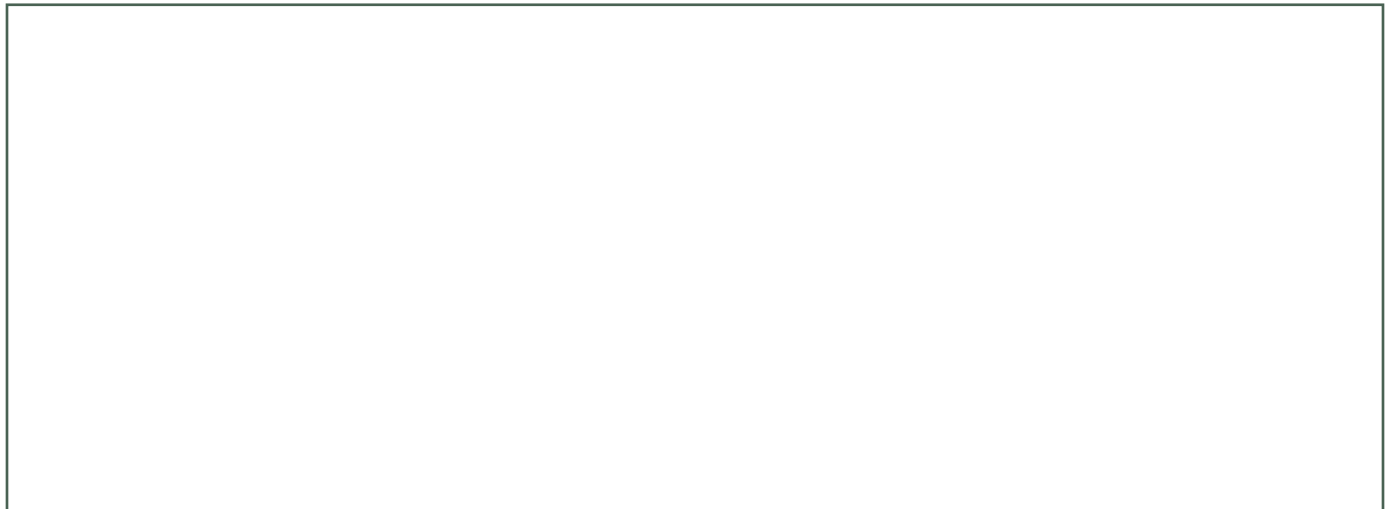
Test two equal groups

Move the same 14 blocks into two groups of 7. Say: "The groups have the same number and use every block." Write $7 + 7 = 14$. Connect each pair by placing one member in each group.

Say: "What does each part of the picture mean? What could we check?" Let the learner connect actions, the diagram, and the equation. These completed models are for instruction; keep them covered during fresh independent checks.



Rearrange with physical blocks; connect the explanation

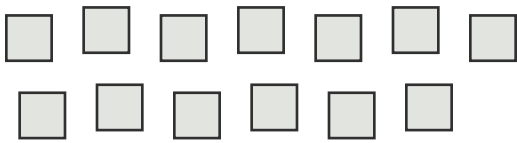


TEACHER MODEL | ADULT ONLY

Explain an odd total

With 13 blocks, make 6 pairs and leave one. Count 2, 4, 6, 8, 10, 12, then one more is 13. Two whole-object groups would have 6 and 7, which are unequal. No two equal whole-number addends total 13. Cutting a block in half changes this whole-object task.

Say: "What does each part of the picture mean? What could we check?" Let the learner connect actions, the diagram, and the equation. These completed models are for instruction; keep them covered during fresh independent checks.



Rearrange with physical blocks; connect the explanation

TEACHER GUIDE

Warm-up | teaching moves

Bank: M01-M04 and O01-O04. Selected core: M01/O01. Target for the open core: A: Pair objects and count by twos

0-2 minutes: Invite one familiar quantity or relationship. Ask what the child notices before evaluating it.

2-6 minutes: Have each learner attempt the selected open task. Ask "How does your model match?" Wait without supplying a number or operation.

6-10 minutes: Compare a correct explanation with an incomplete one. Ask what can be checked. Use the worked key only after the learner's attempt.

10-12 minutes (or stop sooner): Invite a new example or a different valid representation. Close by asking what the child can now explain.

Exact neutral prompt: "Show me how you know. What does this number or group represent?" Listen for: Pair and count by twos, test two equal groups, and express even totals as two equal addends.

If evidence shows a misconception: If the child says 7 pairs means 7 blocks, touch both blocks in each pair and count by twos. If equal groups omit a leftover, require every block to be used once. If two addends differ, compare their modeled group sizes.

Extension: Add one block and predict how pairing changes; then test the prediction.

Record item/date, exact response, model or strategy, access supports, mathematical cues, and one next step. When teaching cues are used, do not label that attempt independent.

TEACHER GUIDE

I Do | teaching moves

Bank: M05-M08 and O05-O08. Selected core: M05/O05. Target for the open core: A: Pair objects and count by twos

0-2 minutes: Read the selected task neutrally. Ask the child to name what needs to be found or shown.

2-6 minutes: Model one adult-only example above. Think aloud each step and match the equation to the representation. Let students watch before asking them to perform.

6-10 minutes: Compare a correct explanation with an incomplete one. Ask what can be checked. Use the worked key only after the learner's attempt.

10-12 minutes (or stop sooner): Invite a new example or a different valid representation. Close by asking what the child can now explain.

Exact neutral prompt: "Show me how you know. What does this number or group represent?" Listen for: Pair and count by twos, test two equal groups, and express even totals as two equal addends.

If evidence shows a misconception: If the child says 7 pairs means 7 blocks, touch both blocks in each pair and count by twos. If equal groups omit a leftover, require every block to be used once. If two addends differ, compare their modeled group sizes.

Extension: Add one block and predict how pairing changes; then test the prediction.

Record item/date, exact response, model or strategy, access supports, mathematical cues, and one next step. When teaching cues are used, do not label that attempt independent.

TEACHER GUIDE

We Do | teaching moves

Bank: M09-M13 and O09-O13. Selected core: M09/O09. Target for the open core: A: Pair objects and count by twos

0-2 minutes: Read the selected task neutrally. Ask the child to name what needs to be found or shown.

2-6 minutes: Have each learner attempt the selected open task. Ask "How does your model match?" Wait without supplying a number or operation.

6-10 minutes: Compare a correct explanation with an incomplete one. Ask what can be checked. Use the worked key only after the learner's attempt.

10-12 minutes (or stop sooner): Invite a new example or a different valid representation. Close by asking what the child can now explain.

Exact neutral prompt: "Show me how you know. What does this number or group represent?" Listen for: Pair and count by twos, test two equal groups, and express even totals as two equal addends.

If evidence shows a misconception: If the child says 7 pairs means 7 blocks, touch both blocks in each pair and count by twos. If equal groups omit a leftover, require every block to be used once. If two addends differ, compare their modeled group sizes.

Extension: Add one block and predict how pairing changes; then test the prediction.

Record item/date, exact response, model or strategy, access supports, mathematical cues, and one next step. When teaching cues are used, do not label that attempt independent.

TEACHER GUIDE

Collaborative practice | teaching moves

Bank: M14-M18 and O14-O18. Selected core: M14/O14. Target for the open core: B: Determine whether two equal groups are possible

0-2 minutes: Read the selected task neutrally. Ask the child to name what needs to be found or shown.

2-6 minutes: Have each learner attempt the selected open task. Ask "How does your model match?" Wait without supplying a number or operation.

6-10 minutes: Partners take turns explaining and checking. Each learner makes a separate record; a shared answer alone is not individual evidence.

10-12 minutes (or stop sooner): Invite a new example or a different valid representation. Close by asking what the child can now explain.

Exact neutral prompt: "Show me how you know. What does this number or group represent?" Listen for: Pair and count by twos, test two equal groups, and express even totals as two equal addends.

If evidence shows a misconception: If the child says 7 pairs means 7 blocks, touch both blocks in each pair and count by twos. If equal groups omit a leftover, require every block to be used once. If two addends differ, compare their modeled group sizes.

Extension: Add one block and predict how pairing changes; then test the prediction.

Record item/date, exact response, model or strategy, access supports, mathematical cues, and one next step. When teaching cues are used, do not label that attempt independent.

TEACHER GUIDE

Independent practice | teaching moves

Bank: M19-M23 and O19-O23. Selected core: M19/O19. Target for the open core: A: Pair objects and count by twos

0-2 minutes: Read the selected task neutrally. Ask the child to name what needs to be found or shown.

2-6 minutes: Have each learner attempt the selected open task. Ask "How does your model match?" Wait without supplying a number or operation.

6-10 minutes: Compare a correct explanation with an incomplete one. Ask what can be checked. Use the worked key only after the learner's attempt.

10-12 minutes (or stop sooner): Collect the response without coaching, note access and strategy, and choose a fresh task for the next date.

Exact neutral prompt: "Show me how you know. What does this number or group represent?" Listen for: Pair and count by twos, test two equal groups, and express even totals as two equal addends.

If evidence shows a misconception: If the child says 7 pairs means 7 blocks, touch both blocks in each pair and count by twos. If equal groups omit a leftover, require every block to be used once. If two addends differ, compare their modeled group sizes.

Extension: Add one block and predict how pairing changes; then test the prediction.

Record item/date, exact response, model or strategy, access supports, mathematical cues, and one next step. When teaching cues are used, do not label that attempt independent.

TEACHER GUIDE

Small-group reteach | teaching moves

Bank: M24-M27 and O24-O27. Selected core: M24/O24. Target for the open core: C: Write an even total as two equal addends

0-2 minutes: Read the selected task neutrally. Ask the child to name what needs to be found or shown.

2-6 minutes: Have each learner attempt the selected open task. Ask "How does your model match?" Wait without supplying a number or operation.

6-10 minutes: Compare a correct explanation with an incomplete one. Ask what can be checked. Use the worked key only after the learner's attempt.

10-12 minutes (or stop sooner): Invite a new example or a different valid representation. Close by asking what the child can now explain.

Exact neutral prompt: "Show me how you know. What does this number or group represent?" Listen for: Pair and count by twos, test two equal groups, and express even totals as two equal addends.

If evidence shows a misconception: If the child says 7 pairs means 7 blocks, touch both blocks in each pair and count by twos. If equal groups omit a leftover, require every block to be used once. If two addends differ, compare their modeled group sizes.

Extension: Add one block and predict how pairing changes; then test the prediction.

Record item/date, exact response, model or strategy, access supports, mathematical cues, and one next step. When teaching cues are used, do not label that attempt independent.

TEACHER GUIDE

Exit ticket | teaching moves

Bank: M28-M30 and O28-O30. Selected core: M28/O28. Target for the open core: A: Pair objects and count by twos

0-2 minutes: Read the selected task neutrally. Ask the child to name what needs to be found or shown.

2-6 minutes: Have each learner attempt the selected open task. Ask "How does your model match?" Wait without supplying a number or operation.

6-10 minutes: Compare a correct explanation with an incomplete one. Ask what can be checked. Use the worked key only after the learner's attempt.

10-12 minutes (or stop sooner): Collect the response without coaching, note access and strategy, and choose a fresh task for the next date.

Exact neutral prompt: "Show me how you know. What does this number or group represent?" Listen for: Pair and count by twos, test two equal groups, and express even totals as two equal addends.

If evidence shows a misconception: If the child says 7 pairs means 7 blocks, touch both blocks in each pair and count by twos. If equal groups omit a leftover, require every block to be used once. If two addends differ, compare their modeled group sizes.

Extension: Add one block and predict how pairing changes; then test the prediction.

Record item/date, exact response, model or strategy, access supports, mathematical cues, and one next step. When teaching cues are used, do not label that attempt independent.

TEACHER GUIDE

Anchor reminders

PAIR -> COUNT BY TWOS -> TEST TWO GROUPS. No leftover means even. One leftover means odd. For an even total, two equal groups give two equal addends.

Ask: Did I use every object exactly once? Does my equation match my picture? Does my answer describe what was asked?

These reminders are for instruction and supported practice. During independent evidence, record whether the reminder was supplied. Support should clarify access without silently supplying the tested relationship.

REUSABLE STUDENT ORGANIZER

Show, explain, and check

Pairs and counting by 2s

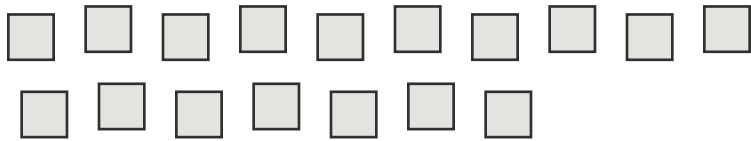
Two groups

Equation or explanation

STUDENT CHOICE BANK

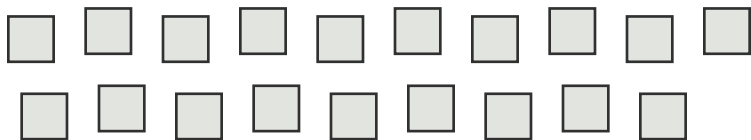
Choose and explain 01-02

M01 Which description fits the pictured blocks?



- A. even; 1 block is left without a partner
- B. odd; 1 block is left without a partner
- C. odd; every block has a partner
- D. even; every block has a partner

M02 Which description fits the pictured blocks?



- A. even; 1 block is left without a partner
- B. odd; every block has a partner
- C. even; every block has a partner
- D. odd; 1 block is left without a partner

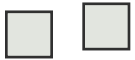
STUDENT PERFORMANCE | WARM-UP

001 | Show your thinking

Name _____ Date _____

Use 2 blocks. Is the number odd or even?

1. Draw pairs and count by 2s.
2. Try two equal groups.
3. For an even total, write two equal addends. For an odd total, explain why that is not possible.



1. Pairs and counting by 2s

2. Two groups

3. Equal-addend equation or odd-total explanation

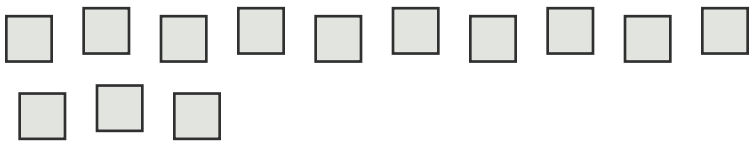
You may explain aloud, point, build, draw, or write.

STUDENT PERFORMANCE | WARM-UP

002 | Show your thinking

Name _____ Date _____

A partner asks whether 13 is odd or even. Prove your answer in three ways: pairs with counting by 2s; a two-group test; and an equal-addend equation or an explanation of why one is impossible.



1. Pairs and counting by 2s

2. Two groups

3. Equal-addend equation or odd-total explanation

You may explain aloud, point, build, draw, or write.

TEACHER-ONLY WORKED KEYS

Items 01-02

M01 | B: odd; 1 block is left without a partner

Target: B: Determine whether two equal groups are possible

17 is odd. Make 8 complete pairs with 1 block left over. Count complete pairs: 2, 4, 6, 8, 10, 12, 14, 16. Two whole-object groups cannot be equal: 8 and 9. No sum of two equal whole-number addends equals 17.

Distractor check: Other choices do not match the required grouping direction, equal group sizes, or parity description. Check every addend and object.

001 | Sample performance

Target: A: Pair objects and count by twos

2 is even. Make 1 complete pair with no leftover. Count complete pairs: 2. Two groups each contain 1: $1 + 1 = 2$.

M02 | D: odd; 1 block is left without a partner

Target: B: Determine whether two equal groups are possible

19 is odd. Make 9 complete pairs with 1 block left over. Count complete pairs: 2, 4, 6, 8, 10, 12, 14, 16, 18. Two whole-object groups cannot be equal: 9 and 10. No sum of two equal whole-number addends equals 19.

Distractor check: Other choices do not match the required grouping direction, equal group sizes, or parity description. Check every addend and object.

002 | Sample performance

Target: C: Write an even total as two equal addends

13 is odd. Make 6 complete pairs with 1 block left over. Count complete pairs: 2, 4, 6, 8, 10, 12. Two whole-object groups cannot be equal: 6 and 7. No sum of two equal whole-number addends equals 13.

Accept equivalent correct models and accessible explanations. Record actual strategy, access support, and mathematical cues separately.