

MATH UNIT

Even and odd

Grade 2

8 lessons

8 × 30 minutes

4 source books

240 minutes in all

THE QUESTION THIS UNIT FOLLOWS

Is this number even or odd — and how would you prove it to somebody who disagreed?

ABOUT THIS UNIT

This is the second unit the 2026-09-02 audit could not build: it needed a third Grade 2 book on parity, and the shelf now carries fifteen. The four chosen here between them supply the test, two ways of drawing it, the rule for what adding one does, the rules for joining two groups, the odd numbers as a run on a number path, and a fluency round where every call can be challenged.

The unit is built so that the reason always arrives with the verdict. A child never says five is odd on its own; they say five is odd, one is left alone, with a finger on the counter that has no partner. Two lessons then make the structure visible rather than asserted: adding one flips the verdict every time because the newcomer either partners the leftover or becomes it, and joining two odd groups comes out even because the two lonely riders find each other. The class settles one rule the book never states — what happens when two even groups join — from the counters, and marks it as theirs.

THE MATHEMATICAL ARC

Each lesson does one job the lesson before it made possible.

- 1 The pair test, and the leftover is the reason
- 2 Run the same test on people, and never two left over
- 3 The same test lying down: two equal rows, or a bulge

- 4 A drawing that carries the number and the verdict on its own
- 5 Adding one flips the answer, every single time
- 6 Join two groups and predict before the strips touch
- 7 The odd numbers are a run with a jump of two
- 8 Call it fast, and be ready to prove it

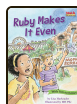
SOURCE BOOKS

Every lesson in this unit is already published under Math lessons. Nothing here asks you to teach anything you cannot open today.



Even or Odd

3 lessons in this unit



Ruby Makes It Even

3 lessons in this unit



Ocean Counting Odd Numbers

1 lesson in this unit



Splitting the Herd

1 lesson in this unit

HOW TO USE THIS GUIDE

Open the source lesson before you teach.

Each day names one lesson that already exists under Math lessons, with its book, its number and its title. This guide says what that lesson is doing in the sequence and what to collect from it; the lesson itself carries the steps, the printables and the answers.

Thirty minutes a day.

Five minutes to connect to yesterday, the twenty-minute source lesson, five minutes to close on something you can see. A day that runs long should lose the close, never the core.

Teach a lesson on its own if you need to.

Every day carries a one-sentence opening for a teacher who is using that lesson outside the sequence.

Stop after a checkpoint.

The unit holds together if you stop after either checkpoint and come back to it. Stopping between a checkpoint and the next one leaves a lesson without the evidence it was built on.

WHERE THIS FITS IN YOUR YEAR

When to teach it

Any time after the class can count reliably to twenty. It pairs well with early multiplication work, because pairing off is the first equal grouping most children do.

What students need first

Children can count to twenty and can move counters into pairs without losing the ones already paired.

What this unit develops

The pair test and the leftover as its proof; parity shown as two equal rows; a drawing that carries the number and the verdict; what adding one does; the three joining rules; the odd numbers as a run with a fixed jump; naming a number's parity at speed with a proof available.

What it prepares them for

Equal groups and early multiplication, remainders in Grade 3 division, and any later work where a structural claim has to be defended rather than recalled.

CURRICULUM CONNECTIONS

None claimed. The lessons in this unit carry their own standards classifications on their own pages, checked lesson by lesson. A unit-level expectation is a different claim, and none has been verified for this unit, so none is printed here. Use the placement guide above to site the unit in your year, and the individual lesson pages for the codes.

UNIT AT A GLANCE

#	MATHEMATICAL MOVE	SOURCE LESSON	COLLECT
1	The pair test, and the leftover is the reason	Even or Odd lesson 1, The Pair Test	A two-column chart headed even and odd, with every number entered only after its pair test has been run.
2	Run the same test on people, and never two left over	Ruby Makes It Even lesson 1, Odd Kid Out	Four seatings run and recorded in the two columns, each entered only after its seating.
3	The same test lying down: two equal rows, or a bulge <i>Checkpoint after this lesson</i>	Even or Odd lesson 4, Two Rows Tell You	Three labelled two-row drawings, at least one even and one odd, with the bulge drawn where it happens.
4	A drawing that carries the number and the verdict on its own	Ruby Makes It Even lesson 4, Draw the Benches	Four drawings with shaded empty seats and written counts, read back cold by another pair.
5	Adding one flips the answer, every single time	Even or Odd lesson 3, One More Changes Everything	A verdict strip carrying the alternating row, with the always sentence written underneath it.
6	Join two groups and predict before the strips touch <i>Checkpoint after this lesson</i>	Ruby Makes It Even lesson 2, Odd Plus Odd Makes an Even	Three of the book's joins predicted, built and reported, and two even groups settled from the counters where the book says nothing.
7	The odd numbers are a run with a jump of two	Ocean Counting Odd Numbers lesson 4, Walk the Number Path by Twos	A marked path to forty-nine, read up and back, with the bare squares named as a group.
8	Call it fast, and be ready to prove it	Splitting the Herd lesson 5, Yours or Mine	The full run to twenty called, with a built proof on every fourth card.

UNIT VOCABULARY

Words students say, not words they are taught to define.

pair	Two things together. The unit's whole test is whether everybody gets one.
left over	The one thing with no partner. It is the reason an odd verdict is given, and it is never two.
two equal rows	Lesson 3's second face of the same test: even numbers make a clean rectangle and odd numbers bulge.
flip	Lesson 5's word for what adding one does to the verdict, every time.
jump of two	Lesson 7. The fixed distance between one odd number and the next on a number path.

MATERIALS

From the source lessons

Each day's materials are listed on that day's page below and on the source lesson itself. Nothing is duplicated here.

New for this unit

- Checkpoint 1 page, one per child
- Checkpoint 2 page, one per child
- Performance task set: twenty counters, two paper strips, a sheet of bench paper ruled in twos, a crayon, and number cards one to twenty, one set per pair
- Performance task page, one per child

ASSESSMENT PLAN

Daily evidence

Keep the verdict strip from lesson 5 and the bench drawings from lesson 4. The strip shows whether the child predicted before testing; the drawings show whether the shaded empty seat appeared without being asked for, which is the whole of the reasoning made visible.

Checkpoint 1, after lesson 3: Prove it with the counters

Nine counters. The child runs the pair test, gives the verdict with its reason, and then tries to make nine into two equal rows and says what happens.

Book-free. Counters, no book.

Look for. The verdict arrives with a finger on the leftover. A bare odd is not yet an answer in this unit, and the two-row attempt has to be made rather than predicted.

Checkpoint 2, after lesson 6: Predict, then join

Five counters on one strip and three on another. The child predicts the parity of the joined group before the strips move, then joins and pairs off and says whether the prediction held.

Book-free. Counters and two strips, no book.

Look for. The prediction is made and said before the strips touch. A child who joins first and announces afterwards has not used the rule, however right the answer is.

Culminating task: Test it, draw it, predict it, call it

Each pair does four things. They run the pair test on three numbers the teacher names and give each verdict with its reason. They draw one odd number on bench paper with the empty seat shaded and the count written underneath, and hand it to another pair to read back cold. They predict the parity of two joined groups before the strips move, then join and check. Finally they take number cards at speed and call even or odd, proving every fourth call with the counters.

Collect. Three verdicts with their reasons, one bench drawing read back by another pair, the prediction said before the join, and the fast round with its proofs.

What it assesses. The pair test with its leftover, a drawing that carries the verdict, a prediction made from a rule, and a call that can be challenged — the four things the unit built, with no verdict given from memory alone.

DAILY LESSON PAGES

Lesson 1 The pair test, and the leftover is the reason

SKILL LESSON **Even or Odd** (/math-library/475.html) · lesson 1, The Pair Test · Grade 2 · 20 minutes
Even and odd by grouping in twos

I CAN	I can find out whether a number is even or odd by pairing it off.
BIG IDEA	Even and odd are the two outcomes of a test anyone can run. The test never asks how big the number is, only whether somebody is left without a partner.
SUCCESS	The child gives each verdict with its reason — five is odd, one is left alone — rather than the verdict on its own.
CONNECT 5 MIN	First lesson. Write 5 and 6 on the board and ask which is even. Take the answers, then ask how they would prove it to somebody who said the opposite.
TAUGHT ON ITS OWN	The book states the whole idea in two sentences: even numbers can be grouped by twos, odd numbers cannot.
SOURCE CORE 20 MIN	Children build each of the book's ten sets in counters and run the pair test on it — six jacks, five jacks, four red cars, three oranges, eight triangles — saying the verdict with its reason every time.
COLLECT	A two-column chart headed even and odd, with every number entered only after its pair test has been run.
CLOSE 5 MIN	Children take any odd set from the round, put a finger on the single leftover counter, and say the book's own sentence for it: this number cannot be grouped by twos.

From the source lesson: 10 counters per student; Printed source passage in this step; Set list card per pair of students; Two-column chart per student; Pencil per student; Word cards: even, odd, pairs

Watch for: A verdict given from the look of the number. Ask for the counters and the finger.

Lesson 2 **Run the same test on people, and never two left over**

SKILL LESSON **Ruby Makes It Even** (/math-library/399.html) · lesson 1, Odd Kid Out · Grade 2 ·

20 minutes

Deciding whether a group is odd or even by pairing everyone off

I CAN	I can seat a group two to a bench and read the verdict off the seating.
BIG IDEA	The test does not care what is being paired. Seated two to a bench, an odd group always leaves exactly one rider alone, and two left over is impossible because two would take a bench.
SUCCESS	The child answers both questions after each seating — how many benches are full, and is anybody sitting with an empty seat beside them — before giving the verdict.
CONNECT 5 MIN	Yesterday the pairs were counters on a desk. Today they are riders on benches, and the leftover is a child with an empty seat beside her.
TAUGHT ON ITS OWN	The book runs one test four times and never names it: everybody pairs up, and the group is even if nobody is left over and odd if exactly one rider is.
SOURCE CORE 20 MIN	Children seat three counters on the bench strip one rider per seat, filling a bench before starting the next, then clear and seat four, seven and ten, answering the two questions aloud after each seating and giving the verdict in the book's own frame.
COLLECT	Four seatings run and recorded in the two columns, each entered only after its seating.
CLOSE 5 MIN	Children look back at the odd seatings, seat five and then nine to check that exactly one rider is alone every time, and say why two riders left over could not happen.

From the source lesson: Bench strip of five two-seat rows, one per pair of students; 20 two-colour counters per pair of students; Verdict card, odd on one face and even on the other, one per pair of students; Printed source passage in this step; Group cards marked 3, 4, 7 and 10, one set per pair of

students; Two-column chart headed even and odd, one per student; Pencil per student; Word cards: odd, even, pair

Watch for: A bench started before the one before it is full. The rule is fill a bench, then start the next, or the leftover stops meaning anything.

Lesson 3 The same test lying down: two equal rows, or a bulge

SKILL LESSON **Even or Odd** (/math-library/475.html) · lesson 4, Two Rows Tell You · Grade 2 ·

20 minutes

Showing even and odd with two equal rows

I CAN	I can show even and odd as two equal rows.
BIG IDEA	Grouped by twos and two equal rows are one test in two positions. Even numbers make a clean rectangle; odd numbers always bulge, and the bulge is the leftover.
SUCCESS	The child's drawings carry the verdict in their shape, so that a stranger reading the page gets the answers from the pictures before the labels.
CONNECT 5 MIN	The pair test has been run standing up, two to a bench. Today the pairs lie down, and the answer becomes a shape.
TAUGHT ON ITS OWN	The pair test has a second face: try to arrange the group as two equal rows.
SOURCE CORE 20 MIN	Children build six as two rows of three matched one above the other, then build five the same way and watch the bulge appear, giving five one honest chance at two equal rows before saying precisely that it cannot.
COLLECT	Three labelled two-row drawings, at least one even and one odd, with the bulge drawn where it happens.
CLOSE 5 MIN	Pages go face up and partners read each other's drawings verdict first, saying what the shape shows before checking the label; a drawing whose shape and label disagree goes back to the counters.

From the source lesson: 10 counters per student; Printed source passage in this step; Paper per student; Pencil per student; Word cards: rows

Watch for: A drawing tidied so the bulge disappears. The bulge is the mathematics; ask them to count each row.

Checkpoint after this lesson: Prove it with the counters. The page is at the end of this guide.

Lesson 4

A drawing that carries the number and the verdict on its own

SKILL LESSON

Ruby Makes It Even (/math-library/399.html) · lesson 4, Draw the Benches · Grade 2 ·

20 minutes

Showing a number as a set of pairs with or without one left over

I CAN	I can draw a group two to a bench so somebody else can read it.
BIG IDEA	A picture is only a record if it works without the person who drew it. The shaded empty seat is what makes the verdict readable cold.
SUCCESS	Another pair reads the drawing back — how many riders, how many full benches, odd or even — without asking anything.
CONNECT 5 MIN	Your two-row drawings were read by a partner who had just built the same thing. Today the reader has not seen your counters at all.
TAUGHT ON ITS OWN	The book draws the idea before it names it: Beth takes the front bench, Millie slides in beside her, there is no room for a third, and Ruby ends up on the bench behind.
SOURCE CORE 20 MIN	On bench paper ruled in twos children draw the book's four groups — three riders, then four, seven and ten — one rider per box, filling a bench before starting the next and shading any box left empty, with the count written underneath.
COLLECT	Four drawings with shaded empty seats and written counts, read back cold by another pair.
CLOSE 5 MIN	Children put the odd drawings together and the even drawings together, say in one sentence what every odd drawing has that no even drawing has, and mark that feature on each one.

From the source lesson: Printed source passage in this step; Bench paper with rows of two boxes, two sheets per student; Crayon or coloured pencil per student; Word cards: bench, pair, left over

Watch for: An empty seat left unshaded. It is the only part of the drawing that carries the verdict; ask the reader what is missing.

Lesson 5**Adding one flips the answer, every single time****SKILL LESSON****Even or Odd** (/math-library/475.html) · lesson 3, One More Changes Everything ·

Grade 2 · 20 minutes

What adding one does to even and odd

I CAN

I can say what happens to even and odd when one more arrives.

BIG IDEA

One more always changes the verdict, because the newcomer either partners the leftover or becomes the leftover. That is a claim about every number, not a fact about a few.

SUCCESS

The child records the alternating row and can act out both newcomer cases with the counters moving.

CONNECT | 5 MIN

Every group so far has sat still while it was tested. Today one counter at a time joins, and the answer will not sit still with it.

TAUGHT ON ITS OWN

Still-life groups get classified in the book; this lesson sets the groups in motion, starting from the book's four apples.

SOURCE CORE | 20 MIN

Children build four, run the pair test, then add one counter at a time to nine — predicting the verdict with a reason before each test and recording the verdict letter in a row: E, O, E, O, E, O.

COLLECT

A verdict strip carrying the alternating row, with the always sentence written underneath it.

CLOSE | 5 MIN

Children act the two cases with counters — when the group is odd the newcomer partners the leftover, when it is even the newcomer becomes the leftover — and rehearse saying both while the counters move.

From the source lesson: 10 counters per pair of students; Printed source passage in this step; Verdict strip per pair of students; Pencil per student; Word cards: flip, predict**Watch for:** A prediction offered after the counter has landed. Collect the prediction and its reason before anything is built.

Lesson 6 Join two groups and predict before the strips touch

SKILL LESSON Ruby Makes It Even (/math-library/399.html) · lesson 2, Odd Plus Odd Makes an Even · Grade 2 · 20 minutes

Predicting whether a joined group is odd or even before counting it

I CAN	I can say whether two joined groups will be even or odd before I count them.
BIG IDEA	Two odd groups come out even because the two lonely riders find each other. The rule is a prediction, which means it has to be said before the counters move.
SUCCESS	The child states the three rules with a build behind each that a partner can check, and marks which one the class settled for itself.
CONNECT 5 MIN	Adding one flipped the answer. Today whole groups are added to whole groups, and the rule has to cover both.
TAUGHT ON ITS OWN	Ruby works out the rule on the spot: her three plus Rob's one has to come out even, and even means nobody rides alone.
SOURCE CORE 20 MIN	Children build three on one strip and one on the other, predict aloud what the joined row will do, slide the strips together and pair the row off, then run the book's other two joins the same way — prediction first, outcome after.
COLLECT	Three of the book's joins predicted, built and reported, and two even groups settled from the counters where the book says nothing.
CLOSE 5 MIN	Children state the three rules they can now defend, each with a build behind it, and mark which two Ruby says out loud and which one is theirs, found on the desk.

From the source lesson: Two paper strips per pair of students, one for each group being joined; 20 two-colour counters per pair of students; Printed source passage in this step; Group cards marked 3, 4, 7 and 10, one set per pair of students; Rule card with three blank lines, one per pair of students; Pencil per student; Word cards: plus, makes, odd, even

Watch for: The prediction skipped on the easy joins. The prediction is the lesson; the join is only the check.

Checkpoint after this lesson: Predict, then join. The page is at the end of this guide.

Lesson 7 The odd numbers are a run with a jump of two

SKILL LESSON **Ocean Counting Odd Numbers** (/math-library/87.html) · lesson 4, Walk the Number

Path by Twos · Grade 2 · 20 minutes

Representing the odd numbers to 49 on a number path

I CAN	I can mark the odd numbers on a path and say why the bare squares are bare.
BIG IDEA	The odd numbers are not a scattered list. They sit at a fixed distance from each other, and the squares between them are all the same kind of number.
SUCCESS	The child marks the path to forty-nine, reads it up and back, and can say why no marker sits on fifty using a bare square as the reason.
CONNECT 5 MIN	The class can test any single number now. Today all the odd numbers get put in one place so the pattern between them can be seen.
TAUGHT ON ITS OWN	Counting by twos is stated and then shown: every other number gets a page and the numbers in between never appear.
SOURCE CORE 20 MIN	Children put a marker on 1, 3, 5, 7 and 9 saying each number as it lands, run a finger between markers to count the squares crossed, then keep the same jump until the path runs out of numbers the book counts.
COLLECT	A marked path to forty-nine, read up and back, with the bare squares named as a group.
CLOSE 5 MIN	On their own paper path children circle every number the book counts to twenty-five, draw an arrow from each circle to the next, write the size of the jump above one arrow and check every other arrow is the same length.

From the source lesson: Number path, 1 to 50, one per pair; Round markers, 25 per pair; Paper number path, 1 to 25, one per student; Crayons; Word cards: jump of two, odd

Watch for: A marker on a bare square. Move it deliberately yourself and ask a partner to say what went wrong; the gap is easier to see than to explain.

Lesson 8 **Call it fast, and be ready to prove it**

SKILL LESSON **Splitting the Herd** (/math-library/540.html) · lesson 5, Yours or Mine · Grade 2 ·

20 minutes

Naming a number even or odd, fast

I CAN	I can say whether a number is even or odd quickly, and prove any call I am challenged on.
BIG IDEA	Fluency is a call with a proof behind it. The counters stay on the desk as the referee, and every fourth call gets built.
SUCCESS	The child calls the sides to twenty at speed and proves every fourth call by pairing, and can tell the two questions in the last round apart.
CONNECT 5 MIN	Seven lessons of testing. Today the calls come fast, and the counters are on the desk for anything anybody argues about.
TAUGHT ON ITS OWN	Kirby's rule turns every number into a side: evens to Emma, odds to Kirby, and the book walks that rule out loud over the numbers one to twenty.
SOURCE CORE 20 MIN	Number cards come up one at a time and children call the side as fast as they can read the card; on every fourth card one pair builds that many counters and pushes them into twos to prove the call, and the class waits for the proof.
COLLECT	The full run to twenty called, with a built proof on every fourth card.
CLOSE 5 MIN	The teacher says one number twice — first as one cow's number, so the child calls the mat it goes to, then as a whole pasture count, so the child deals that many counters and says what lands on each mat — for seven and for twelve, and says which answer is one cow and which is two counts.

From the source lesson: Number cards 1 to 20 per pair; Printed source passage in this step; 20 counters per pair of students; Two mats per pair, one labelled Emma and one labelled Kirby; Word cards: even, odd

Watch for: Speed without proof. If the fourth-card build is being skipped, slow the round down; the challenge is the point of the game.

CULMINATING PERFORMANCE TASK

Test it, draw it, predict it, call it

Each pair does four things. They run the pair test on three numbers the teacher names and give each verdict with its reason. They draw one odd number on bench paper with the empty seat shaded and the count written underneath, and hand it to another pair to read back cold. They predict the parity of two joined groups before the strips move, then join and check. Finally they take number cards at speed and call even or odd, proving every fourth call with the counters.

Collect. Three verdicts with their reasons, one bench drawing read back by another pair, the prediction said before the join, and the fast round with its proofs.

What it assesses. The pair test with its leftover, a drawing that carries the verdict, a prediction made from a rule, and a call that can be challenged — the four things the unit built, with no verdict given from memory alone.

TEACHER KEY AND RUBRIC

Key

- Checkpoint 1: odd, with one counter left over, and nine will not make two equal rows — one row is always longer.
- Checkpoint 2: even. Five and three are both odd, and the two leftovers pair with each other.
- Task: for the fast round, keep the cards inside twenty and make sure a proof really is built every fourth card. The speed is worth nothing without the challenge, and the challenge is what the counters are on the desk for.

Rubric

STRAND	SECURE LOOKS LIKE	DEVELOPING	NOT YET
Representation	A group is physically paired off, or drawn two to a bench with the empty seat shaded, before a verdict is given.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.
Calculation	The pair test is run by moving counters into twos without losing the pairs already made, and a jump of two is the same size every time on the number path.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.
Meaning	Every verdict carries its reason, and the reason for odd is one thing left over — never two.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.
Explanation	A prediction is said before the groups are joined, and a child can act out both newcomer cases to say why adding one always flips the answer.	Does it with the arrangement in front of them.	Produces an answer without the arrangement or the reason.

PRINT-READY STUDENT PAGES

CHECKPOINT 1 · GRADE 2

Prove it with the counters

Name

Date

Are these even or odd? Show me how you know. Now try to make them into two equal rows. What happened?

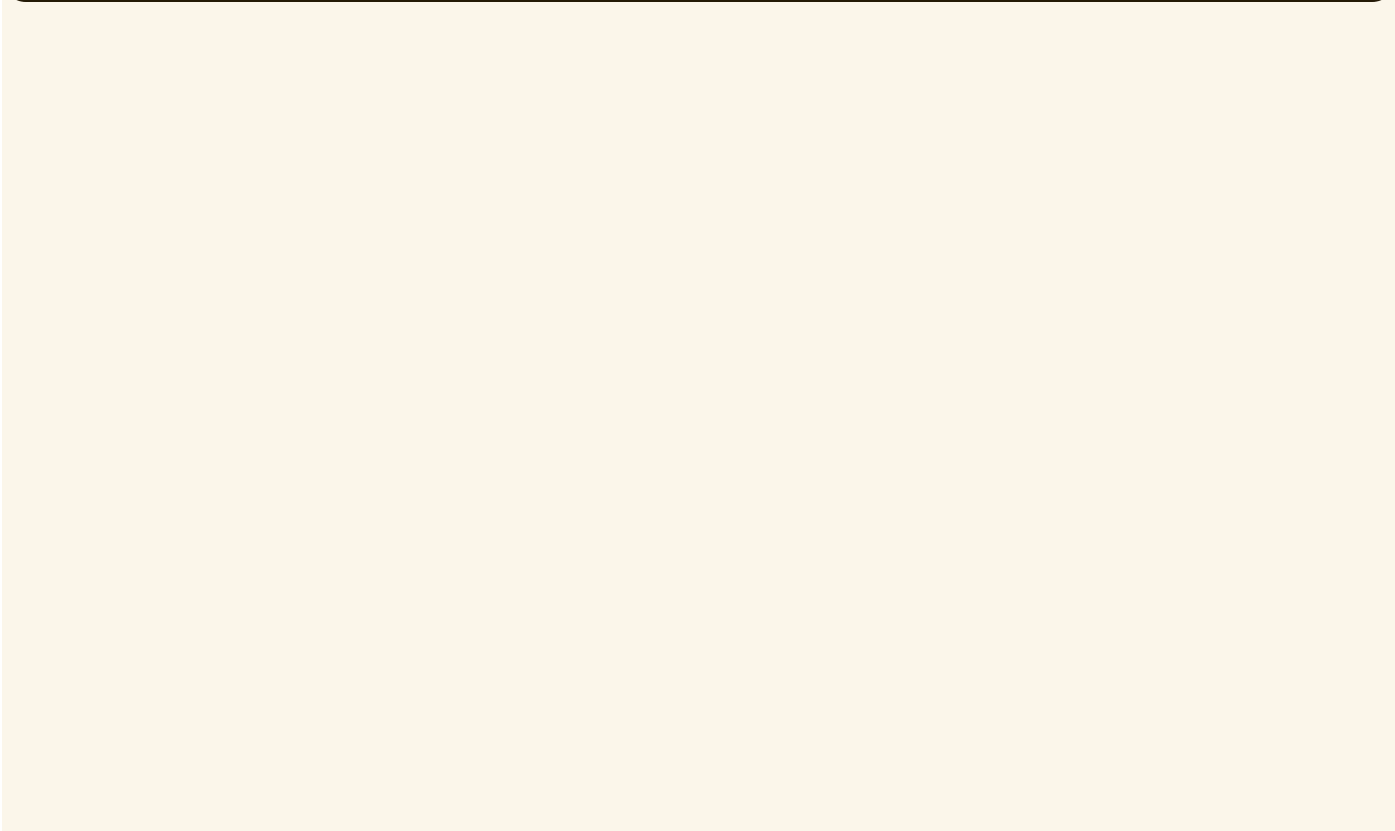
CHECKPOINT 2 • GRADE 2

Predict, then join

Name

Date

Do not move anything yet. If these two groups join, will the answer be even or odd? Say it first. Now join them and pair them off.



CULMINATING TASK • GRADE 2**Test it, draw it, predict it, call it**

Name _____

Date _____

Are these even or odd? Show me how you know. Now draw one odd number on the bench paper, shade the empty seat and write the number underneath — then swap with another pair and read theirs. Next: do not move these two groups yet. If they join, even or odd? Say it first. Last, I will hold up number cards; call the side, and every fourth one you have to prove.

**TEACHER PLANNING AND HANDOFF**

- A child who gives bare verdicts in the performance task has the vocabulary and not the test. Put the counters back in front of them before any division work, where the leftover becomes a remainder.
- Lesson 6 is the one to keep if time is short. Settling a rule the book never states, from the counters, is the only place on this shelf where a class establishes something the text does not.

- Even or Odd's second lesson and Ruby Makes It Even's third were left out because classifying small numbers is carried by lesson 1 and the two-way vote is a consequence of parity rather than a test of it.

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