

# Keeping a Record You Can Trust

GRADE 1

5 LESSONS

5 × 30 MINUTES

3 SOURCE BOOKS

150 MINUTES

THE QUESTION THIS UNIT FOLLOWS

**What does this record actually settle?**

## About this unit

Tally marks are often taught merely as a way to write numbers down. This unit teaches them as a way to create a trustworthy record.

The mark is made while the response or object is still present. One mark stands for one thing. The record must count back to the collection from which it was built.

The unit ends where much Grade 1 data work does not: with a tally that counts every piece accurately but still cannot answer the question asked. Children build that accurate-but-unhelpful record and then state the rule that would make it useful.

## The mathematical arc

|   |                                                                |
|---|----------------------------------------------------------------|
| 1 | One mark for one vote, made as the vote lands                  |
| 2 | Run the procedure live: ask, mark, and cross the fifth         |
| 3 | Read the record back: fives, then leftover ones                |
| 4 | Keep two labelled tallies apart while objects arrive           |
| 5 | Judge a record that is accurate but cannot settle the question |

|                                        |  |              |
|----------------------------------------|--|--------------|
| Source books and how to use this guide |  |              |
| SOURCE BOOK                            |  | LESSONS USED |

|                                               |   |  |
|-----------------------------------------------|---|--|
| Sir Cumference and the Off-the-Charts Dessert | 1 |  |
| Let's Make a Tally Chart                      | 1 |  |
| Tally Cat Keeps Track                         | 3 |  |

## Open the source lesson before teaching

Each day identifies one already-published Math lesson. This guide provides the sequence, connection and evidence to collect; the source lesson provides its full steps, printables and answers.

## Thirty minutes a day

Use five minutes to connect, twenty minutes for the source core, and five minutes to close. If time is short, use a one-minute close that captures the stated success evidence; do not omit it.

## Teach any lesson on its own

Every lesson includes a short Taught on its own entry point.

## Stop after a checkpoint

The unit can pause after either checkpoint. Resume with the next lesson when the class is ready.

# Where this fits in your year - Iowa

## Grade 1 data collection and representation

Use this unit during Iowa Grade 1 work on organizing, representing, and interpreting categorical data. It belongs after students can count reliably to twenty and before picture graphs or bar graphs become the main representation. Lessons 1 and 2 establish the essential recording rule: one mark is made while each vote or object is present, and every fifth mark is crossed to make the record easier to read.

Lessons 3 and 4 move from producing a tally to interpreting and checking one. Students count complete groups by fives, switch to leftover ones, keep two labelled categories separate, and compare every column with the objects it represents. The checkpoints make both the procedure and the one-to-one correspondence visible. Lesson 5 then adds an important limit: an accurate tally of pieces does not automatically answer a question about height.

The unit provides substantial practice with organizing and representing data and with answering questions about totals and category counts. Students identify which category has more, but they do not calculate exactly how many more or fewer one category has than another. Add that comparison question before using the complete Grade 1 data expectation as assessment evidence. The unit also

prepares students for later graphing by making labels, categories, and the meaning of one recorded mark explicit.

## STRONGEST CURRICULUM CONNECTIONS - OUR SUMMARY

### Reinforces · Lessons 1-5

1.MD.D.4 - Organize, represent, and interpret data with up to three categories; ask and answer questions about totals, category counts, and how many more or fewer.

Student evidence: Students conduct a live survey, record objects in one or two labelled tally columns, read totals by fives and ones, check the tallies against the collections, and identify the greater category.

Limitation: Students do not determine the numerical difference between two category counts.

### Teacher must add

- Ask students how many more or fewer are in one category than another and require the numerical difference.

Official curriculum source: Iowa Academic Standards: Mathematics — <https://educate.iowa.gov/pk-12/standards/academics/mathematics>

| Unit at a glance                                         |                                   |                                               |
|----------------------------------------------------------|-----------------------------------|-----------------------------------------------|
| # MATHEMATICAL MOVE                                      | SOURCE                            | COLLECT                                       |
| 1 One mark for one vote, made as the vote lands          | Sir Cumference lesson 1           | Four towers on one baseline                   |
| 2 Run the procedure live: ask, mark, and cross the fifth | Let's Make a Tally Chart lesson 1 | Live five-response tally and respondent count |
| 3 Read the record back: fives, then leftover ones        | Tally Cat lesson 2                | Card totals read by fives, then ones          |
| 4 Keep two labelled tallies apart while objects arrive   | Tally Cat lesson 3                | Two-column tally checked against two boxes    |

|                                                                  |                    |                                                      |
|------------------------------------------------------------------|--------------------|------------------------------------------------------|
| Judge a record that is accurate but cannot settle the 5 question | Tally Cat lesson 5 | Accurate tally beneath a misleading tower comparison |
|------------------------------------------------------------------|--------------------|------------------------------------------------------|

## Unit vocabulary

### tally

A record made one mark at a time.

### group of five

Four upright marks crossed by the fifth.

### leftover

Marks after the final complete group, counted by ones.

### fair

Whether the comparison uses the same rule or unit for both groups.

## Materials

### From the source lessons

Use the daily materials shown on each lesson page and the source lesson printables.

### New for this unit

- Checkpoint 1 page, one per child
- Checkpoint 2 page, one per child
- Performance-task set: two labelled boxes and about twenty objects of two kinds per pair
- Two-column recording sheet and performance-task page, one per child

## Evidence rhythm

Keep the live tally from Lesson 2, the read-back observation from Lesson 3, and the two-column sheet from Lesson 4. Each can be checked against what it records.

# Assessment plan

## Checkpoint 1 - after Lesson 2: One mark, one thing

Hand over twelve objects one at a time. The child makes one mark as each object arrives, crosses every fifth mark, then counts the record and the objects and states whether the totals agree.

Look for: twelve marks in two crossed groups and two singles; both counts equal twelve. A child who records afterwards from memory has not yet met the recording rule.

## Checkpoint 2 - after Lesson 4: Read it back

Give the printed card containing three crossed groups and four single marks. The child reads it by fives and then ones and states the total.

Look for: nineteen, reached as five, ten, fifteen, then sixteen through nineteen, with each group tracked exactly once.

## Culminating task: Two columns, and what they can tell you

Pairs prepare two labelled columns. One student drops objects of two kinds into corresponding boxes in no fixed order while the other records each object in the matching column as it lands. They read both columns by fives and ones, count each box against its column, and explain one question the record answers and one it cannot answer.

Collect: the two-column sheet with both totals and each child's two spoken conclusions.

Assesses: live one-to-one recording, crossed groups of five, accurate read-back, category separation, and judgement about what a record establishes.

## The closing evidence is essential

If a lesson runs long, reduce the close to one prompt and record the observable response. Do not remove the close: it is where the unit checks whether the procedure has become an idea.

## LESSON 1 · 30 MINUTES

# One mark for one vote: the mark is made as the vote lands, and it stands for a person

### SKILL LESSON

Sir Cumference and the Off-the-Charts Dessert - lesson 1, One Mark, One Vote: Building the Towers

Building a count picture with one mark for one vote

## **I can**

I can make one mark for one vote.

## **Big idea**

A mark stands for a person. A cube in a tower is a count of people, not a picture of a treat.

## **Success evidence**

The child can point to any single cube and say what it stands for.

## **Connect - 5 min**

First lesson. Ask how the class could find out which of four treats is most popular. Take suggestions without settling the question.

## **Taught on its own**

The book invents two recording methods, and both rest on one rule: one mark for one vote.

## **Source core - 20 min**

Each child drops one bean into the bowl for the treat they prefer while the recorder draws one short line under that treat. Groups then snap one cube per vote into a tower and stand all four towers on the same floor line.

## **Collect**

Four towers on one common baseline, each built one cube per vote, with their bases and tops checked.

## **Close - 5 min**

Each child points to one cube and says what it represents, then names the total and the treat. A partner counts the tower back.

## **Materials from the source lesson**

Four treat pictures and bowls; one dried bean per child; wide recording strip; thick marker; snap cubes in four colours; floor tape; word cards: vote, tally, each, tallest.

## **Watch for**

A tower is propped up so it appears taller. Check every base against the tape before reading any tower.

## LESSON 2 · 30 MINUTES

# Run the procedure live: ask, mark while the classmate is present, and cross the fifth

### SKILL LESSON

Let's Make a Tally Chart - lesson 1, One person, one mark: building a tally chart from a class survey

Recording data with tally marks, one mark per response

### I can

I can make the record while the person is still there.

### Big idea

A trustworthy record is made as each response arrives, not reconstructed later from memory.

### Success evidence

Every classmate asked has exactly one mark, and the sheet counts back to the number of people asked.

### Connect - 5 min

Yesterday the recorder marked while the beans landed. Today the votes walk up to the recorder.

### Taught on its own

The book gives the procedure in plain language: ask each person, mark the food named, and cross every fifth mark.

### Source core - 20 min

Each child takes a list of three foods to five classmates, asks the same question, and makes one straight mark beside the answer while the respondent is still present. The fifth mark is drawn diagonally across the first four.

### Collect

A marking sheet with one mark per person asked, the fifth crossed correctly, and the number of respondents written beside it.

## Close - 5 min

Each child touches the marks beside one food and states the total. A partner recounts the same row and confirms or repairs the result.

## Materials from the source lesson

Food list with three choices; pencil; partner checking sheet; one counter per mark; completed marking sheet; word cards: tally, data.

## Watch for

A child collects several answers and records them later. Prompt the rule while the child is still beside the respondent.

Checkpoint 1 follows this lesson: One mark, one thing.

## LESSON 3 · 30 MINUTES

# Read a record back: fives to the end of the groups, then ones

### SKILL LESSON

Tally Cat Keeps Track - lesson 2, Five, Ten, Fifteen, Sixteen

Counting a tally record by fives and then by ones

## I can

I can read a tally record back.

## Big idea

Count crossed groups by five and leftover marks by one. The switch is where the count is won or lost.

## Success evidence

The child says switch at the moment the crossed groups run out and reaches the correct total.

## Connect - 5 min

You have made records as responses arrived. Today a finished record has to be turned back into a number.

## Taught on its own

The book states the counting rule and supplies a record that ends with a partial group, so the rule must actually be used.

## Source core - 20 min

Pairs read cards containing crossed groups of five. They cover each complete group with a flat finger while counting by fives, say switch after the final complete group, and count remaining marks on by ones.

## Collect

Each card total stated aloud, with the switch announced at the correct place.

## Close - 5 min

One partner reads a card by fives and ones. The other checks by touching every individual mark. If totals differ, they recount only the group where their tracking diverged.

## Materials from the source lesson

Ten tally cards containing crossed groups and leftover marks; twenty counting cubes per child; word cards: group, leftover, total.

## Watch for

A child counts marks inside a crossed group. The flat finger covers the whole group; individual marks inside it are not retouched.

## LESSON 4 · 30 MINUTES

# Two tallies at once: prepare two labelled places before anything arrives

### SKILL LESSON

Tally Cat Keeps Track - lesson 3, Two Names, Two Tallies

Keeping two tallies simultaneously and reading each separately

## I can

I can keep two tallies at once.

## Big idea

The record needs two labelled places before counting begins so every mark has a home when it arrives.

## Success evidence

Each column counts back to its own box with nothing omitted or counted twice.

## Connect - 5 min

Yesterday you read one finished record. Today two kinds of objects arrive in no fixed order and both must be recorded live.

## Taught on its own

The book explains that a tally can track more than one thing at a time and describes how to keep the records apart.

## Source core - 20 min

Pairs rule a sheet into two labelled columns before anything is counted. One partner drops cubes into two boxes in no fixed order while the other makes one mark in the matching column as each cube lands, crossing every fifth.

## Collect

A two-column sheet with both columns read back and checked against their corresponding boxes.

## Close - 5 min

Pairs swap jobs and repeat with a new set. They check each column against its own box and state which column has the greater total.

## Materials from the source lesson

Two-column tally sheet; two labelled sorting boxes; twenty counting cubes per child; word cards: each, more, total, track.

## Watch for

A recorder waits and catches up. The mark must go down with the cube; that timing makes it a live record.

Checkpoint 2 follows this lesson: Read it back.

## LESSON 5 · 30 MINUTES

# A record can count every piece honestly and still fail to settle the question

### SKILL LESSON

Tally Cat Keeps Track - lesson 5, One Can, One Mark

Judging whether a count is a useful record of the question asked

### I can

I can say what my record does and does not settle.

### Big idea

An accurate record may still fail to answer the question being asked. A shared comparison rule is needed before the record can support a conclusion.

### Success evidence

The child names both totals, identifies what was counted, and explains why the tally does not determine which tower is taller.

### Connect - 5 min

Your records have been accurate and useful. Today you will deliberately build one that is accurate but cannot answer the question.

### Taught on its own

The book reveals that its hero used an unfair construction and states the rule that would have made the comparison meaningful.

### Source core - 20 min

Pairs build Tower A from 6 full-height cubes and Tower B from 10 half-height blocks. They add one piece at a time, record one mark in the matching column as each piece is added, and check each tally against its tower. Tower B has more pieces but is shorter: ten half-height blocks stand as tall as five full cubes. The tally stays accurate about pieces, not height.

### Collect

Two unequal-height towers and an accurate two-column tally in which the larger count belongs to the shorter tower.

## Close - 5 min

Groups state one construction rule that would let the tally settle the height question, rebuild both towers using only full-height cubes, and read the records again.

## Materials from the source lesson

Twenty counting cubes per child; ten half-height blocks per pair; two-column tally sheet; word cards: each, fair, more.

## Watch for

A child declares the tally wrong. Ask what the marks counted before accepting a verdict. The tally is accurate about pieces and uninformative about height.

# Culminating performance task

## Two columns, and what they can tell you

Each pair labels two columns and two boxes. One partner drops objects of two kinds into the boxes in no fixed order; the recorder makes one mark in the matching column as each object lands. Students read both columns by fives and ones, count each box against its column, and state one thing the record settles and one thing it does not.

## Teacher key

- Checkpoint 1: twelve marks; the object count and tally count both equal twelve.
- Checkpoint 2: nineteen.
- Performance task: column totals vary, should sum to the supplied number of objects, and must match their boxes. The record settles how many of each kind arrived. It does not establish which kind is larger, heavier, preferable or otherwise better unless that attribute was recorded.

## Analytic rubric

### STRAND

### SECURE

### DEVELOPING

### NOT YET

Recording

Marks each object as it arrives; crosses every fifth.

Maintains one-to-one marking with an occasional prompt or repairs one grouping error.

Records from memory, omits or duplicates objects, or groups marks inconsistently.

|                  |                                                                                |                                                                        |                                                                             |
|------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Read-back        | Counts complete groups by fives, switches once, then counts leftovers by ones. | Reaches the correct total with a tracking prompt or recount.           | Counts groups or leftovers more than once, or cannot reconstruct the total. |
| Category meaning | Labels both columns before recording and checks each against its matching box. | Keeps categories separate with a reminder or repairs a misplaced mark. | Combines categories or cannot say what a column represents.                 |

Conclusion

States one supported conclusion and one question the tally cannot settle.

States what the tally shows but needs a prompt to name its limit.

Makes a claim about an attribute the tally did not record.

#### CHECKPOINT 1 • GRADE 1

## One Mark, One Thing

Name \_\_\_\_\_ Date \_\_\_\_\_ Your teacher will hand you twelve objects, one at a time. Make one tally mark as each object arrives. Cross every fifth mark. Then count your marks and count the objects.

My tally total: \_\_\_\_\_ My object total: \_\_\_\_\_ Do the two totals agree? Yes / Not yet

### Make your live tally here

#### CHECKPOINT 2 • GRADE 1

## Read It Back

Name \_\_\_\_\_ Date \_\_\_\_\_ Read the tally card below. Count complete crossed groups by fives. Say switch, then count the remaining marks by ones.

The total is: \_\_\_\_\_ How did you count it?

Teacher check: grouped fives tracked once / switched to ones / total correct

## CULMINATING TASK · GRADE 1

# Two Columns, and What They Can Tell You

Name \_\_\_\_\_ Date \_\_\_\_\_ Label the two columns before your partner begins. Make one mark in the correct column as each object lands. Read each column by fives and ones, then check it against its own box.

Column 1 label: \_\_\_\_\_

Column 2 label: \_\_\_\_\_

My record settles: \_\_\_\_\_

My record does not settle: \_\_\_\_\_

### Teacher planning and handoff

- Students who record from memory need Lesson 2 again before further data collection.
- Students who count inside crossed groups need Lesson 3 with a flat-finger tracking routine.
- Lesson 5 carries forward into graphing: a display answers only the question its categories and measures were designed to record.