

NORTH CAROLINA MATHEMATICS

Estimate, Then Check



Grade 2 | NC.2.MD.3

Estimate lengths in using standard units of inches, feet, yards, centimeters, and meters.

Teacher scripts • Visual models • Measurement tools and organizers
30 choice tasks + 30 open / performance tasks • Worked keys
Observation records • Short multi-session learning sequence

Aligned to current NC standards used in 2026-27 and 2027-28.
Select a few tasks per session. This bank is not a single test.

Free sample | Contents

NC.2.MD.3 | Second Grade mathematics

This sample contains 18 complete selected pages from the 67-page resource, plus this sample contents page. Original printed page numbers are retained. Gaps are intentional.

Included original pages: 1-15, 30, 49, 55

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) 17; original page(s) 30

Selected teacher prompts and keys: original page(s) 49, 55

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

Start here

What is in this packet

Pages 3-7: exact standard, materials, models and access. Pages 8-14: seven teaching scripts. Pages 15-29: choice bank. Pages 30-44: performance bank. Later pages: reusable organizers, scale-checked targets, worked keys, records and sources. Teacher-only keys and preparation are separate from student tasks.

Plan across several days

Session 1: warm-up and I Do, select M01, O01, M05 and O05. Session 2: We Do and partners, select M09, O09, M14 and O14. Session 3: independent check, select M19 and O19. Session 4 if needed: reteach M24/O24, then fresh exit M28/O28. Use 15-25 minute sessions, with movement and tool handling; the rest is a reusable bank.

Print and prepare

Print only selected student pages, organizers and needed targets. Print scale-critical pages at 100% / Actual Size, never Fit or Shrink. Verify both checkbars with a trusted real ruler. If either is wrong, reprint before measuring. Adult handles cutting. Other pictures are schematic and are not real object lengths.

Collect actual performance

Choice tasks reveal reasoning but cannot replace physically measuring. Observe the child selecting or using the tool and identifying endpoints. Record exactly what the child does and says, the unit, the access support and any answer-supplying cue.

TEACHER GUIDE

Standard and learning targets

Exact current standard

Estimate lengths in using standard units of inches, feet, yards, centimeters, and meters.

Learning targets

1. Estimate in inches, feet, yards, centimeters and meters.
2. Use a known unit benchmark before measuring.
3. Check an estimate and revise the strategy.

Coverage and essential question

How can a familiar unit help us estimate an unfamiliar length? All five named units appear in actual estimate-before-measure tasks: inches, feet, yards, centimeters and meters.

Evidence and mathematical practices

Ask students to use tools strategically, attend to endpoints and units, explain their reasoning, and critique a flawed measurement. Record observable actions and explanations, not a claimed mastery label. No official cut score or speed requirement is invented.

TEACHER GUIDE

Materials and preparation

Safe physical materials

Real centimeter/inch rulers, a meter stick, yardstick, and measuring tapes marked in needed units. Include a tape marked in feet and, if available, yards. If no yard scale is available, use a real yardstick end to end. Large paper blocks and supplied target sheets; pencils, books, shelves, desk edges, rugs and safe clear floor paths. No climbing or measuring another person.

Before students begin

Verify printed checkbars. Keep target labels visible but all dimensions and keys teacher-only. Prepare a separate benchmark of 1 inch, 1 foot, 1 yard, 1 centimeter and 1 meter using trusted real tools for estimation activities. Do not place repeated benchmarks along an estimate target until after the estimate is recorded.

Prerequisites and vocabulary

Count intervals rather than tick marks; compare lengths; count and subtract within 100 as needed. Teach endpoint, length, zero mark, unit, estimate, actual measurement, difference, centimeter, inch, foot, yard and meter. Read ft as feet, yd as yards, cm as centimeters, m as meters and in as inches.

Between marks

Do not pretend every object has a whole-number length. Allow "between 8 and 9 cm" or "about 9 cm" when supported by the scale. Differences of approximate measures are approximate. Choose whole-unit targets for a focused exact subtraction demonstration; the printed targets supply these.

Physical access

Use a stable nonslip surface, large high-contrast marks, tactile endpoint markers or an accessible digital display where appropriate. An adult may steady an object, not choose the answer. A student may direct an adult tool movement precisely when motor access is a barrier; record the route used.

TEACHER GUIDE

Teacher model: think aloud

Set up

Use a teacher-selected desk edge, a separate 1 foot benchmark and a tape in feet. Say: "I will estimate before putting a tool along the desk."

Model with actual evidence

"I imagine about four of this foot-long reference along the edge, so I estimate 4 feet." Write this estimate first. Measure the actual desk edge. Read the actual value; do not force the result to 4 feet. If the result is 5 feet, say: "My estimate was 1 foot short. Next time I will picture the reference more carefully."

Extend across units

Model separate benchmarks for cm, inches, yards and meters. Use an eraser for cm, a book for inches and a safe floor path for yards/meters. Each time estimate first, then measure. An estimate is reasoned, not a covert exact measurement.



TEACHER GUIDE

Anchor chart: a fair measurement

1. Name the job

What object or edge? Mark both endpoints. Say which unit you need.

2. Choose and use the tool

Choose a marked tool that fits the object and unit. Align zero, keep the tool along the measured path, and read the other endpoint. For repeated moves or blocks, leave no gaps and no overlaps.

3. Record meaningfully

Write the number AND unit. Keep separate rows for different objects or different unit sizes. If the endpoint lies between marks, report an interval or an honest approximation.

4. Think about the result

Estimate first using a familiar unit reference. Measure second. Compare the estimate with the actual measure. Was it high, low or equal? What could improve the next estimate?

Partner language

"I chose ___ because ___." "My endpoints are ___." "My measurement is ___ ___." "I checked by ___." Partners ask questions without supplying the count or pointing to the correct mark during individual evidence.

TEACHER GUIDE

Access, reteach and extension

Keep the mathematics visible

Read directions neutrally, define vocabulary before assessment, allow oral/AAC/signed/dictated responses, and provide larger tools or tactile marks. Do not count, choose a unit, move the ruler to the correct answer or name a benchmark count for the learner during independent evidence.

Respond to misconceptions

Counting tick marks: point out the space between two adjacent marks in teaching, then try a fresh object. Starting at the tool edge: compare edge and zero on a ruler with a margin. Gaps or overlaps: physically repair a practice row. Mixed units: remeasure with one shared unit. Comparing counts alone: place a long and short unit side by side.

Targeted support

Build a personal benchmark collection in all five units. Give a fresh object for each estimate; record which references were available.

Extension across sessions

Create a small classroom measurement exhibit. Choose three real objects, state the intended length, select units/tools, and gather measurements. Recheck one surprising result. Explain the change with evidence. For estimation, record estimates first. For unit comparison, measure each object twice. For differences, compare named pairs in one unit.

Scoring boundaries

Do not score handwriting, decoding, accent or speed. N/O means unobserved, inaccessible or insufficient evidence. A 0 requires an interpretable observed incorrect performance. Keep answer-supplying cues separate from allowed access. Use multiple observations, not a single choice response, to plan instruction.

TEACHER GUIDE

Warm-up teaching script

Purpose and selections

Focus: Estimate in inches, feet, yards, centimeters and meters. Bank allocation: M01-M04 and O01-O04. Select M01 and O01; reserve others for later conferences or fresh checks.

Launch | 2 minutes

Say: "Today we will estimate in inches, feet, yards, centimeters and meters." Invite the child to identify the object and endpoints. Ask what information a measurement needs. Do not announce the task answer.

Teach / work | 5-10 minutes

Ask the learner to act first, then explain. Read M01: "A cabinet edge looks about 3 copies of a 1 ft benchmark. Which estimate in ft fits?" Use the illustrated model if present. Then read O01: "Before measuring, estimate the front width of a cabinet in feet. Name your benchmark. Then measure and compare." Allow enough time for actual tool handling; stop before fatigue.

Listen and respond | 3 minutes

Ask: "How did you choose the unit? Show both endpoints. How can you check?" Listen for unit intervals rather than marks. If the result is unclear, ask for a demonstration. During independent or exit evidence, record the error before teaching; use a different item after support.

Teacher-only check

About 3 benchmark lengths of 1 ft give an estimate of 3 ft. This is information about this described object, not every cabinet. Actual estimate and length vary. Accept a justified estimate in feet based on a relevant benchmark; do not require the illustrative MC numbers. Check the actual measure of the same edge in ft, then describe whether the estimate was high, low or equal and how the benchmark could improve. Example only: estimate 5 ft, measure 6 ft; estimate was 1 ft short. Accuracy is descriptive, not a fixed pass/fail tolerance.

Record / next step | 2 minutes

Record item ID, exact action or words, measurements, unit, access and any cue. Use the evidence record. If needed, reteach one misconception with the model, then use a fresh bank item. Early finishers explain a second valid tool or checking strategy.

TEACHER GUIDE

I Do teaching script

Purpose and selections

Focus: Estimate in inches, feet, yards, centimeters and meters. Bank allocation: M05-M08 and O05-O08. Select M05 and O05; reserve others for later conferences or fresh checks.

Launch | 2 minutes

Say: "Today we will estimate in inches, feet, yards, centimeters and meters." Invite the child to identify the object and endpoints. Ask what information a measurement needs. Do not announce the task answer.

Teach / work | 5-10 minutes

Model aloud, then pause for a prediction. Read M05: "You estimate a hallway using a 1 m reference. Which unit belongs with your estimate?" Use the illustrated model if present. Then read O05: "Before measuring, estimate the marked straight path of a hallway in meters. Name your benchmark. Then measure and compare." Allow enough time for actual tool handling; stop before fatigue.

Listen and respond | 3 minutes

Ask: "How did you choose the unit? Show both endpoints. How can you check?" Listen for unit intervals rather than marks. If the result is unclear, ask for a demonstration. During independent or exit evidence, record the error before teaching; use a different item after support.

Teacher-only check

The reference is 1 m, so record the estimate in meters. Naming a unit makes the estimate interpretable. Actual estimate and length vary. Accept a justified estimate in meters based on a relevant benchmark; do not require the illustrative MC numbers. Check the actual measure of the same edge in m, then describe whether the estimate was high, low or equal and how the benchmark could improve. Example only: estimate 5 m, measure 6 m; estimate was 1 m short. Accuracy is descriptive, not a fixed pass/fail tolerance.

Record / next step | 2 minutes

Record item ID, exact action or words, measurements, unit, access and any cue. Use the evidence record. If needed, reteach one misconception with the model, then use a fresh bank item. Early finishers explain a second valid tool or checking strategy.

TEACHER GUIDE

We Do teaching script

Purpose and selections

Focus: Estimate in inches, feet, yards, centimeters and meters. Bank allocation: M09-M13 and O09-O13. Select M09 and O09; reserve others for later conferences or fresh checks.

Launch | 2 minutes

Say: "Today we will estimate in inches, feet, yards, centimeters and meters." Invite the child to identify the object and endpoints. Ask what information a measurement needs. Do not announce the task answer.

Teach / work | 5-10 minutes

Ask the learner to act first, then explain. Read M09: "A doorway measures 1 m. Which estimate in m is closest?" Use the illustrated model if present. Then read O09: "Before measuring, estimate the opening width of a doorway in meters. Name your benchmark. Then measure and compare." Allow enough time for actual tool handling; stop before fatigue.

Listen and respond | 3 minutes

Ask: "How did you choose the unit? Show both endpoints. How can you check?" Listen for unit intervals rather than marks. If the result is unclear, ask for a demonstration. During independent or exit evidence, record the error before teaching; use a different item after support.

Teacher-only check

Compare distances from 1. Estimate 1 is 0 m away; each other option is farther away. Checking estimates helps refine the benchmark. Actual estimate and length vary. Accept a justified estimate in meters based on a relevant benchmark; do not require the illustrative MC numbers. Check the actual measure of the same edge in m, then describe whether the estimate was high, low or equal and how the benchmark could improve. Example only: estimate 5 m, measure 6 m; estimate was 1 m short. Accuracy is descriptive, not a fixed pass/fail tolerance.

Record / next step | 2 minutes

Record item ID, exact action or words, measurements, unit, access and any cue. Use the evidence record. If needed, reteach one misconception with the model, then use a fresh bank item. Early finishers explain a second valid tool or checking strategy.

TEACHER GUIDE

Collaborative practice teaching script

Purpose and selections

Focus: Estimate in inches, feet, yards, centimeters and meters. Bank allocation: M14-M18 and O14-O18. Select M14 and O14; reserve others for later conferences or fresh checks.

Launch | 2 minutes

Say: "Today we will estimate in inches, feet, yards, centimeters and meters." Invite the child to identify the object and endpoints. Ask what information a measurement needs. Do not announce the task answer.

Teach / work | 5-10 minutes

Ask the learner to act first, then explain. Read M14: "You estimate a room using a 1 m reference. Which unit belongs with your estimate?" Use the illustrated model if present. Then read O14: "Before measuring, estimate the clear floor path of a room in meters. Name your benchmark. Then measure and compare." Partners alternate measurer and checker; each child completes a fresh individual measurement.

Listen and respond | 3 minutes

Ask: "How did you choose the unit? Show both endpoints. How can you check?" Listen for unit intervals rather than marks. If the result is unclear, ask for a demonstration. During independent or exit evidence, record the error before teaching; use a different item after support.

Teacher-only check

The reference is 1 m, so record the estimate in meters. Naming a unit makes the estimate interpretable. Actual estimate and length vary. Accept a justified estimate in meters based on a relevant benchmark; do not require the illustrative MC numbers. Check the actual measure of the same edge in m, then describe whether the estimate was high, low or equal and how the benchmark could improve. Example only: estimate 5 m, measure 6 m; estimate was 1 m short. Accuracy is descriptive, not a fixed pass/fail tolerance.

Record / next step | 2 minutes

Record item ID, exact action or words, measurements, unit, access and any cue. Use the evidence record. If needed, reteach one misconception with the model, then use a fresh bank item. Early finishers explain a second valid tool or checking strategy.

TEACHER GUIDE

Independent practice teaching script

Purpose and selections

Focus: Estimate in inches, feet, yards, centimeters and meters. Bank allocation: M19-M23 and O19-O23. Select M19 and O19; reserve others for later conferences or fresh checks.

Launch | 2 minutes

Say: "Today we will estimate in inches, feet, yards, centimeters and meters." Invite the child to identify the object and endpoints. Ask what information a measurement needs. Do not announce the task answer.

Teach / work | 5-10 minutes

Ask the learner to act first, then explain. Read M19: "A play area edge looks about 8 copies of a 1 yd benchmark. Which estimate in yd fits?" Use the illustrated model if present. Then read O19: "Before measuring, estimate the safe marked path of a play area in yards. Name your benchmark. Then measure and compare." Allow enough time for actual tool handling; stop before fatigue.

Listen and respond | 3 minutes

Ask: "How did you choose the unit? Show both endpoints. How can you check?" Listen for unit intervals rather than marks. If the result is unclear, ask for a demonstration. During independent or exit evidence, record the error before teaching; use a different item after support.

Teacher-only check

About 8 benchmark lengths of 1 yd give an estimate of 8 yd. This is information about this described object, not every play area. Actual estimate and length vary. Accept a justified estimate in yards based on a relevant benchmark; do not require the illustrative MC numbers. Check the actual measure of the same edge in yd, then describe whether the estimate was high, low or equal and how the benchmark could improve. Example only: estimate 5 yd, measure 6 yd; estimate was 1 yd short. Accuracy is descriptive, not a fixed pass/fail tolerance.

Record / next step | 2 minutes

Record item ID, exact action or words, measurements, unit, access and any cue. Use the evidence record. If needed, reteach one misconception with the model, then use a fresh bank item. Early finishers explain a second valid tool or checking strategy.

TEACHER GUIDE

Small-group reteach teaching script

Purpose and selections

Focus: Estimate in inches, feet, yards, centimeters and meters. Bank allocation: M24-M27 and O24-O27. Select M24 and O24; reserve others for later conferences or fresh checks.

Launch | 2 minutes

Say: "Today we will estimate in inches, feet, yards, centimeters and meters." Invite the child to identify the object and endpoints. Ask what information a measurement needs. Do not announce the task answer.

Teach / work | 5-10 minutes

Ask the learner to act first, then explain. Read M24: "A whiteboard measures 6 ft. Which estimate in ft is closest?" Use the illustrated model if present. Then read O24: "Before measuring, estimate the long edge of a whiteboard in feet. Name your benchmark. Then measure and compare." Allow enough time for actual tool handling; stop before fatigue.

Listen and respond | 3 minutes

Ask: "How did you choose the unit? Show both endpoints. How can you check?" Listen for unit intervals rather than marks. If the result is unclear, ask for a demonstration. During independent or exit evidence, record the error before teaching; use a different item after support.

Teacher-only check

Compare distances from 6. Estimate 7 is 1 ft away; each other option is farther away. Checking estimates helps refine the benchmark. Actual estimate and length vary. Accept a justified estimate in feet based on a relevant benchmark; do not require the illustrative MC numbers. Check the actual measure of the same edge in ft, then describe whether the estimate was high, low or equal and how the benchmark could improve. Example only: estimate 5 ft, measure 6 ft; estimate was 1 ft short. Accuracy is descriptive, not a fixed pass/fail tolerance.

Record / next step | 2 minutes

Record item ID, exact action or words, measurements, unit, access and any cue. Use the evidence record. If needed, reteach one misconception with the model, then use a fresh bank item. Early finishers explain a second valid tool or checking strategy.

TEACHER GUIDE

Exit ticket teaching script

Purpose and selections

Focus: Estimate in inches, feet, yards, centimeters and meters. Bank allocation: M28-M30 and O28-O30. Select M28 and O28; reserve others for later conferences or fresh checks.

Launch | 2 minutes

Say: "Today we will estimate in inches, feet, yards, centimeters and meters." Invite the child to identify the object and endpoints. Ask what information a measurement needs. Do not announce the task answer.

Teach / work | 5-10 minutes

Ask the learner to act first, then explain. Read M28: "A desk edge looks about 4 copies of a 1 ft benchmark. Which estimate in ft fits?" Use the illustrated model if present. Then read O28: "Before measuring, estimate the long edge of a desk in feet. Name your benchmark. Then measure and compare." Allow enough time for actual tool handling; stop before fatigue.

Listen and respond | 3 minutes

Ask: "How did you choose the unit? Show both endpoints. How can you check?" Listen for unit intervals rather than marks. If the result is unclear, ask for a demonstration. During independent or exit evidence, record the error before teaching; use a different item after support.

Teacher-only check

About 4 benchmark lengths of 1 ft give an estimate of 4 ft. This is information about this described object, not every desk. Actual estimate and length vary. Accept a justified estimate in feet based on a relevant benchmark; do not require the illustrative MC numbers. Check the actual measure of the same edge in ft, then describe whether the estimate was high, low or equal and how the benchmark could improve. Example only: estimate 5 ft, measure 6 ft; estimate was 1 ft short. Accuracy is descriptive, not a fixed pass/fail tolerance.

Record / next step | 2 minutes

Record item ID, exact action or words, measurements, unit, access and any cue. Use the evidence record. If needed, reteach one misconception with the model, then use a fresh bank item. Early finishers explain a second valid tool or checking strategy.

STUDENT CHOICE BANK

Choose and explain | 1-2

M01 A cabinet edge looks about 3 copies of a 1 ft benchmark.
Which estimate in ft fits?



cabinet (picture only)

A. 15

B. 16

C. 3

D. 5

M02 You estimate a shelf using a 1 ft reference. Which unit belongs with your estimate?



shelf (picture only)

A. feet

B. centimeters

C. meters

D. inches

STUDENT PERFORMANCE BANK

Measure and explain | 1-2

001 Before measuring, estimate the front width of a cabinet in feet. Name your benchmark. Then measure and compare.

BEFORE: estimate + unit

Benchmark I pictured

AFTER: actual length + unit

High, low or equal? Explain.

002 Before measuring, estimate the front edge of a shelf in feet. Name your benchmark. Then measure and compare.

BEFORE: estimate + unit

Benchmark I pictured

AFTER: actual length + unit

High, low or equal? Explain.

TEACHER ONLY

Choice keys | 1-5

M01: C. 3

About 3 benchmark lengths of 1 ft give an estimate of 3 ft. This is information about this described object, not every cabinet.

Target: Use a known unit benchmark before measuring.

M02: A. feet

The reference is 1 ft, so record the estimate in feet. Naming a unit makes the estimate interpretable.

Target: Estimate in inches, feet, yards, centimeters and meters.

M03: B. 6

Compare distances from 5. Estimate 6 is 1 cm away; each other option is farther away. Checking estimates helps refine the benchmark.

Target: Check an estimate and revise the strategy.

M04: A. 7

About 7 benchmark lengths of 1 yd give an estimate of 7 yd. This is information about this described object, not every hallway.

Target: Use a known unit benchmark before measuring.

M05: D. meters

The reference is 1 m, so record the estimate in meters. Naming a unit makes the estimate interpretable.

Target: Estimate in inches, feet, yards, centimeters and meters.

TEACHER ONLY

Performance keys | 1-3

001 | Estimate in inches, feet, yards, centimeters and meters.

Prepare: Use a safe real cabinet with named endpoints. Show a separate 1 ft reference (not laid along the target) if needed. Child records estimate before measuring. Provide a tool marked in feet; for yards use a yardstick and mark moves. Adult chooses a safe reachable path; no climbing.

Evidence / worked response: Actual estimate and length vary. Accept a justified estimate in feet based on a relevant benchmark; do not require the illustrative MC numbers. Check the actual measure of the same edge in ft, then describe whether the estimate was high, low or equal and how the benchmark could improve. Example only: estimate 5 ft, measure 6 ft; estimate was 1 ft short. Accuracy is descriptive, not a fixed pass/fail tolerance.

002 | Estimate in inches, feet, yards, centimeters and meters.

Prepare: Use a safe real shelf with named endpoints. Show a separate 1 ft reference (not laid along the target) if needed. Child records estimate before measuring. Provide a tool marked in feet; for yards use a yardstick and mark moves. Adult chooses a safe reachable path; no climbing.

Evidence / worked response: Actual estimate and length vary. Accept a justified estimate in feet based on a relevant benchmark; do not require the illustrative MC numbers. Check the actual measure of the same edge in ft, then describe whether the estimate was high, low or equal and how the benchmark could improve. Example only: estimate 5 ft, measure 6 ft; estimate was 1 ft short. Accuracy is descriptive, not a fixed pass/fail tolerance.

003 | Estimate in inches, feet, yards, centimeters and meters.

Prepare: Use a safe real eraser with named endpoints. Show a separate 1 cm reference (not laid along the target) if needed. Child records estimate before measuring. Provide a tool marked in centimeters; for yards use a yardstick and mark moves. Adult chooses a safe reachable path; no climbing.

Evidence / worked response: Actual estimate and length vary. Accept a justified estimate in centimeters based on a relevant benchmark; do not require the illustrative MC numbers. Check the actual measure of the same edge in cm, then describe whether the estimate was high, low or equal and how the benchmark could improve. Example only: estimate 5 cm, measure 6 cm; estimate was 1 cm short. Accuracy is descriptive, not a fixed pass/fail tolerance.