

North Carolina mathematics

Grade 2 | Geometry

Draw and describe shapes



NC.2.G.1

Teacher scripts • original visual models • 30 choice checks • 30 open/performance tasks • worked keys • observation records

Current NC standards for 2026-27 and 2027-28. Adopted 2026 replacements begin 2028-29. Short sessions across days; print selected student pages.

Free sample | Contents

NC.2.G.1 | Second Grade mathematics

This sample contains 22 complete selected pages from the 97-page resource, plus this sample contents page. Original printed page numbers are retained. Gaps are intentional.

Included original pages: 1-21, 78

Representative activities

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

M02: sample PDF page(s) 21; original page(s) 20

O01: sample PDF page(s) 20; original page(s) 19

O02: sample PDF page(s) 22; original page(s) 21

Selected teacher prompts and keys: original page(s) 78

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.

Contents

Use the next useful task

Teacher guide: exact standard, targets, materials, access, selected-session plan and complete worked model. Seven instructional scripts follow. Original anchors and neutral student organizers precede the bank.

Student bank: M01-M30 choice tasks and O01-O30 open/performance tasks, each on its own labeled page. Teacher-only worked keys follow the student bank. Assessment pages include scoring, an observation form, coverage log and extension. Sources close the packet.

Use page footers and item IDs to select copies. Solved teacher models are for instruction, not independent assessment. All supplied graph data are instructional. No literary passage is needed.

Target key

A | Recognize polygons using specified attributes.

B | Draw triangles, quadrilaterals, pentagons and hexagons with specified attributes.

C | Recognize and describe rectangular prisms and cubes.

Teacher guide

Exact standard and targets

NC.2.G.1 Recognize and draw triangles, quadrilaterals, pentagons, and hexagons, having specified attributes; recognize and describe attributes of rectangular prisms and cubes.

Target A

Recognize polygons using specified attributes.

Target B

Draw triangles, quadrilaterals, pentagons and hexagons with specified attributes.

Target C

Recognize and describe rectangular prisms and cubes.

Evidence to collect

Collect drawings with specified attributes for triangles, quadrilaterals, pentagons and hexagons. Observe identification and descriptions of both real solids, including hidden faces. Correct MC names alone do not establish drawing or description.

Teacher guide

Prepare and preserve access

Prerequisites

Distinguish flat shapes from solids; count to 12; trace a boundary; use informal square-corner and same-length comparisons. Formal angle measures and area formulas are not required.

Materials and safety

Pencil, ruler if desired, blank paper, paper corner, large safe cube block and non-cube rectangular box. Remove distracting labels from boxes. Show several orientations. Actual solids are essential for hidden-face checks; printed projections supplement handling.

Vocabulary

Triangle, quadrilateral, pentagon, hexagon, straight side, vertex/vertices, face, edge, cube, rectangular prism. A square is a rectangle and a quadrilateral; a cube is a special rectangular prism.

Neutral access

Read directions and choices neutrally; accept pointing, AAC, sign, oral explanation or dictation. Adult drawing/cutting may follow exact learner directions for motor access. Record who made each mathematical decision. Do not score handwriting, spelling or accent. Larger outlines and tactile boundaries are allowed; supplied centers, counts, shape names or completed models are answer-supplying cues, not neutral access.

Teacher guide

Plan short sessions

Use 10-20 minute sessions across several days. Select one or two tasks at a time. This 60-item bank is not one sitting or a timed test. Repeat accessible fresh attempts until each required target has evidence. No official mastery threshold or speed cutoff is implied.

Warm-up: M01-M04 and O01-O04; 4 choice and 4 open/performance tasks.

I Do: M05-M08 and O05-O08; 4 choice and 4 open/performance tasks.

We Do: M09-M13 and O09-O13; 5 choice and 5 open/performance tasks.

Collaborative practice: M14-M18 and O14-O18; 5 choice and 5 open/performance tasks.

Independent practice: M19-M23 and O19-O23; 5 choice and 5 open/performance tasks.

Small-group reteach: M24-M27 and O24-O27; 4 choice and 4 open/performance tasks.

Exit ticket: M28-M30 and O28-O30; 3 choice and 3 open/performance tasks.

Suggested sequence

Days 1-2 trace and name polygons; days 3-4 draw all four families with stated attributes; days 5-6 handle both solids and describe hidden features; days 7-8 independent drawing/description conferences.

Separate teaching from evidence

I Do and We Do are supported instruction. Independent practice and exit tasks use fresh materials without solved anchors in view. Collaborative work still requires each learner to act and explain individually.

Teacher model

Say, show, solve

Draw $(0,0),(4,0),(2,3)$, closing the boundary. Say: Three straight sides meet at three vertices, so it is a triangle. Turn the drawing; its attributes remain. Draw a five-sided shape and count only real corners. Handle a cube: mark each of six faces once. Four edges surround the front, four the back, four connect them: 12. Four front vertices plus four back vertices: 8. All six faces are equal squares. Compare a longer box: six rectangles, 12 edges, 8 vertices; not all faces are squares.

Respond to a misconception

If a child names by orientation, turn the same model and trace unchanged properties. If every quadrilateral is called a square, compare a slanted four-sided polygon with the square. If only visible prism faces are counted, turn the actual block and mark each face once.

Prompt for proof

Ask: How could you show that? Give wait time. Record the learner explanation before offering a model. Use a new example after teaching to check transfer.

Teacher script | Warm-up

Warm-up in action

Purpose and selected evidence

Bank: M01-M04, O01-O04. Choose 1-2 per meeting; the selections below may span days.

0-2 minutes | Invite

State the task, offer its materials and ask the learner to propose a first step. Do not preview an independent answer.

2-9 minutes | Exact teacher moves

Use O01-O04 across sessions before modeling. Ask: What must stay true about the sides? Save the four baseline drawings.

9-13 minutes | Check and respond

Ask: Show how you know. Listen for actual specified side/corner properties, closed boundaries, and descriptions of the whole solid including hidden parts.

If a child names by orientation, turn the same model and trace unchanged properties. If every quadrilateral is called a square, compare a slanted four-sided polygon with the square. If only visible prism faces are counted, turn the actual block and mark each face once.

Extend and record

Vary proportions and orientation without changing the requested properties; explain a near nonexample. Record item, exact action, response, access, answer-supplying cues and a next step. Timing is flexible.

Teacher script | I Do

I Do in action

Purpose and selected evidence

Bank: M05-M08, O05-O08. Choose 1-2 per meeting; the selections below may span days.

0-2 minutes | Invite

State the task, offer its materials and ask the learner to propose a first step. Do not preview an independent answer.

2-9 minutes | Exact teacher moves

Draw the worked triangle and pentagon. Model checking specified corners or unequal lengths, then let learners try O05-O08. Name a property rather than a color.

9-13 minutes | Check and respond

Ask: Show how you know. Listen for actual specified side/corner properties, closed boundaries, and descriptions of the whole solid including hidden parts.

If a child names by orientation, turn the same model and trace unchanged properties. If every quadrilateral is called a square, compare a slanted four-sided polygon with the square. If only visible prism faces are counted, turn the actual block and mark each face once.

Extend and record

Vary proportions and orientation without changing the requested properties; explain a near nonexample. Record item, exact action, response, access, answer-supplying cues and a next step. Timing is flexible.

Teacher script | We Do

We Do in action

Purpose and selected evidence

Bank: M09-M13, O09-O13. Choose 1-2 per meeting; the selections below may span days.

0-2 minutes | Invite

State the task, offer its materials and ask the learner to propose a first step. Do not preview an independent answer.

2-9 minutes | Exact teacher moves

Handle both actual solids in O09/O10. Turn them to find hidden faces. Then compare drawing families in O11-O13. Record where a supplied word was needed.

9-13 minutes | Check and respond

Ask: Show how you know. Listen for actual specified side/corner properties, closed boundaries, and descriptions of the whole solid including hidden parts.

If a child names by orientation, turn the same model and trace unchanged properties. If every quadrilateral is called a square, compare a slanted four-sided polygon with the square. If only visible prism faces are counted, turn the actual block and mark each face once.

Extend and record

Vary proportions and orientation without changing the requested properties; explain a near nonexample. Record item, exact action, response, access, answer-supplying cues and a next step. Timing is flexible.

Teacher script | Collaborative practice

Collaborative practice in action

Purpose and selected evidence

Bank: M14-M18, O14-O18. Choose 1-2 per meeting; the selections below may span days.

0-2 minutes | Invite

State the task, offer its materials and ask the learner to propose a first step. Do not preview an independent answer.

2-9 minutes | Exact teacher moves

Partners alternate drawer and attribute-checker in O14-O18. Count sides by tracing once around; show the actual solids during the comparison. Each child explains.

9-13 minutes | Check and respond

Ask: Show how you know. Listen for actual specified side/corner properties, closed boundaries, and descriptions of the whole solid including hidden parts.

If a child names by orientation, turn the same model and trace unchanged properties. If every quadrilateral is called a square, compare a slanted four-sided polygon with the square. If only visible prism faces are counted, turn the actual block and mark each face once.

Extend and record

Vary proportions and orientation without changing the requested properties; explain a near nonexample. Record item, exact action, response, access, answer-supplying cues and a next step. Timing is flexible.

Teacher script | Independent practice

Independent practice in action

Purpose and selected evidence

Bank: M19-M23, O19-O23. Choose 1-2 per meeting; the selections below may span days.

0-2 minutes | Invite

State the task, offer its materials and ask the learner to propose a first step. Do not preview an independent answer.

2-9 minutes | Exact teacher moves

Present O19-O23 one at a time, with fresh blank workspaces. Ask: Tell me how your drawing meets every part of the request. Do not repair it before recording.

9-13 minutes | Check and respond

Ask: Show how you know. Listen for actual specified side/corner properties, closed boundaries, and descriptions of the whole solid including hidden parts.

If a child names by orientation, turn the same model and trace unchanged properties. If every quadrilateral is called a square, compare a slanted four-sided polygon with the square. If only visible prism faces are counted, turn the actual block and mark each face once.

Extend and record

Vary proportions and orientation without changing the requested properties; explain a near nonexample. Record item, exact action, response, access, answer-supplying cues and a next step. Timing is flexible.

Teacher script | Small-group reteach

Small-group reteach in action

Purpose and selected evidence

Bank: M24-M27, O24-O27. Choose 1-2 per meeting; the selections below may span days.

0-2 minutes | Invite

State the task, offer its materials and ask the learner to propose a first step. Do not preview an independent answer.

2-9 minutes | Exact teacher moves

Contrast a closed shape with an open one, then draw a fresh example. Handle a cube and count the three edges meeting at a corner. Use O24-O27 for transfer.

9-13 minutes | Check and respond

Ask: Show how you know. Listen for actual specified side/corner properties, closed boundaries, and descriptions of the whole solid including hidden parts.

If a child names by orientation, turn the same model and trace unchanged properties. If every quadrilateral is called a square, compare a slanted four-sided polygon with the square. If only visible prism faces are counted, turn the actual block and mark each face once.

Extend and record

Vary proportions and orientation without changing the requested properties; explain a near nonexample. Record item, exact action, response, access, answer-supplying cues and a next step. Timing is flexible.

Teacher script | Exit ticket

Exit ticket in action

Purpose and selected evidence

Bank: M28-M30, O28-O30. Choose 1-2 per meeting; the selections below may span days.

0-2 minutes | Invite

State the task, offer its materials and ask the learner to propose a first step. Do not preview an independent answer.

2-9 minutes | Exact teacher moves

Use O28 and O29 on separate days for polygon drawings; O30 for both actual solids. Check the coverage log for any family not yet drawn with specified attributes.

9-13 minutes | Check and respond

Ask: Show how you know. Listen for actual specified side/corner properties, closed boundaries, and descriptions of the whole solid including hidden parts.

If a child names by orientation, turn the same model and trace unchanged properties. If every quadrilateral is called a square, compare a slanted four-sided polygon with the square. If only visible prism faces are counted, turn the actual block and mark each face once.

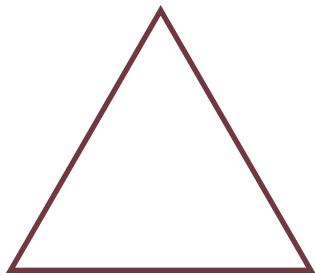
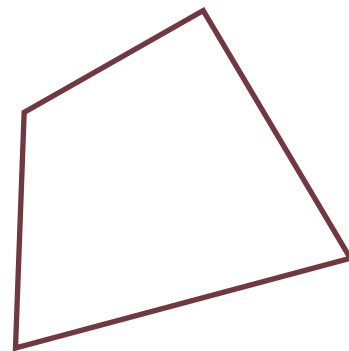
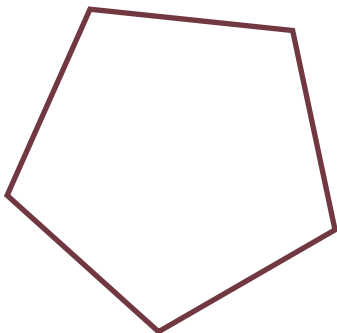
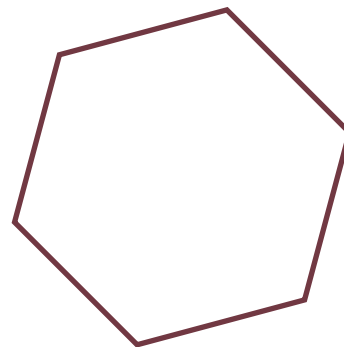
Extend and record

Vary proportions and orientation without changing the requested properties; explain a near nonexample. Record item, exact action, response, access, answer-supplying cues and a next step. Timing is flexible.

Teacher anchor | polygons

Trace sides and vertices

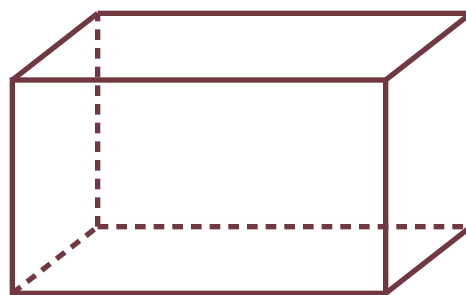
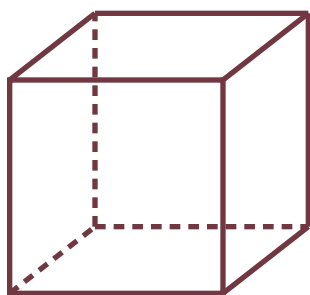
These examples do not limit orientation or size. Straight sides meet at vertices. Every figure is closed. A square and rectangle are both quadrilaterals.

**triangle****quadrilateral****pentagon****hexagon**

Teacher anchor | solids

Look beyond visible faces

Parallel-projection drawings show structure, not measurable face lengths. Dashed edges are hidden. Handle actual blocks to check all faces; do not call a perspective parallelogram a non-square cube face.



Cube

6 equal square faces, 12 edges, 8 vertices; 3 edges meet at every vertex.

Rectangular prism

6 rectangular faces in opposite matching pairs, 12 edges, 8 vertices. A cube is a special rectangular prism. This wider example is not a cube.

Teacher-only drawing models

Examples with specified attributes

Coordinates below are teacher construction checks, not student prerequisites. Connect in order, close the last to the first, and use a consistent unit. Turn or enlarge without changing properties.

Triangle, one square corner

$[(0, 0), (4, 0), (0, 3)]$

Quadrilateral, four square corners

$[(0, 0), (4, 0), (4, 2), (0, 2)]$

Pentagon, unequal sides, vertical side

$[(0, 0), (4, 0), (4, 2), (2, 4), (0, 3)]$

Irregular hexagon, horizontal side

$[(0, 0), (4, 0), (5, 2), (3, 4), (1, 3), (-1, 1)]$

Additional valid examples

Isosceles triangle: $(0,0),(4,0),(2,3)$. Scalene triangle: $(0,0),(5,0),(1,2)$. Non-square rhombus: $(0,0),(3,0),(4,\sqrt{8}),(1,\sqrt{8})$; all four sides are length 3, with no square corners. Count real direction-changing vertices; collinear extra dots do not add sides.

Student organizer

Explain and check

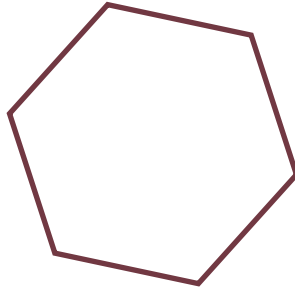
My task: _____

I know because: _____

Student | Warm-up

M01 | Choose and explain

Name: _____ Date: _____

How many vertices does this hexagon have?

- A. 4
- B. 6
- C. 5
- D. 3

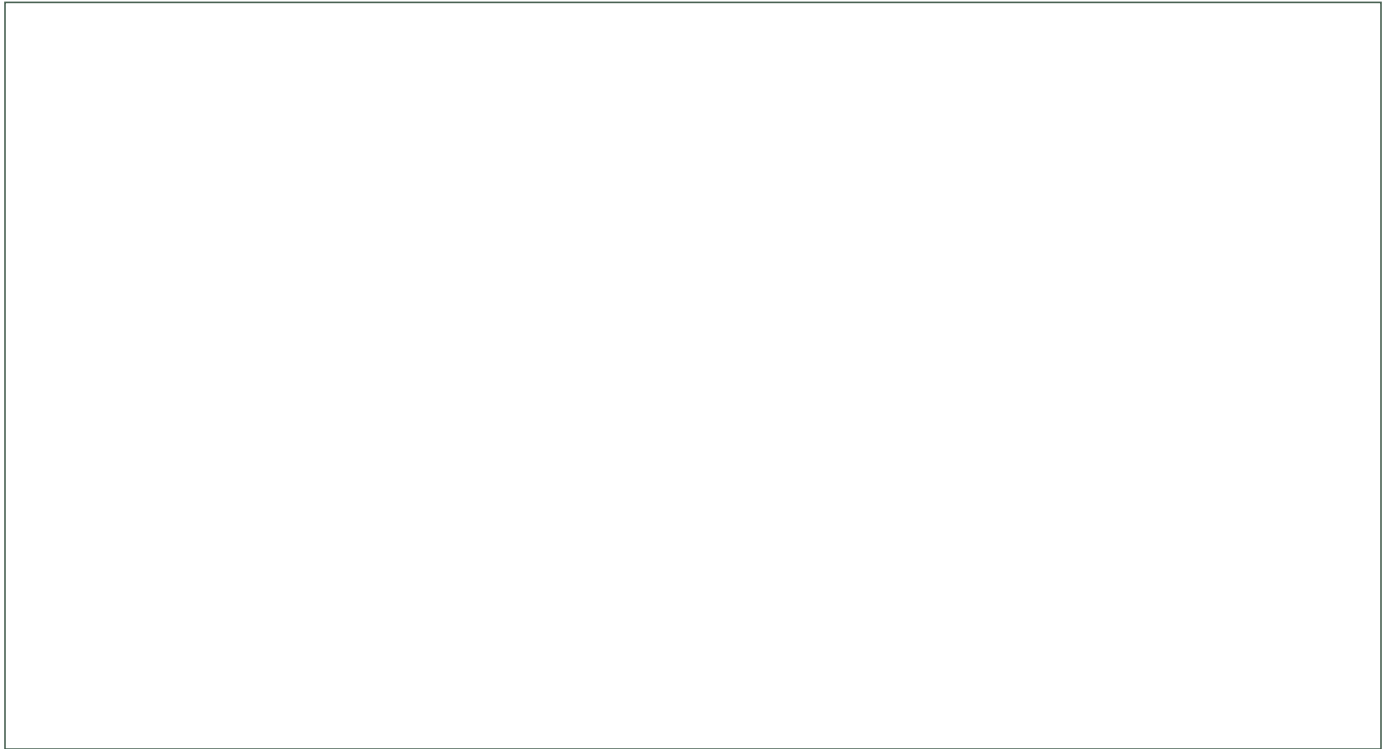
Tell or show how you know.

Student | Warm-up

001 | Make and explain

Name: _____ Date: _____

Draw a triangle with 3 straight sides. Mark and count its vertices.



Tell or show how you know. An adult may record your words.

My explanation: _____

Student | Warm-up

M02 | Choose and explain

Name: _____ Date: _____

A closed shape has 5 straight sides. Which name fits?

- A. hexagon
- B. quadrilateral
- C. pentagon
- D. triangle

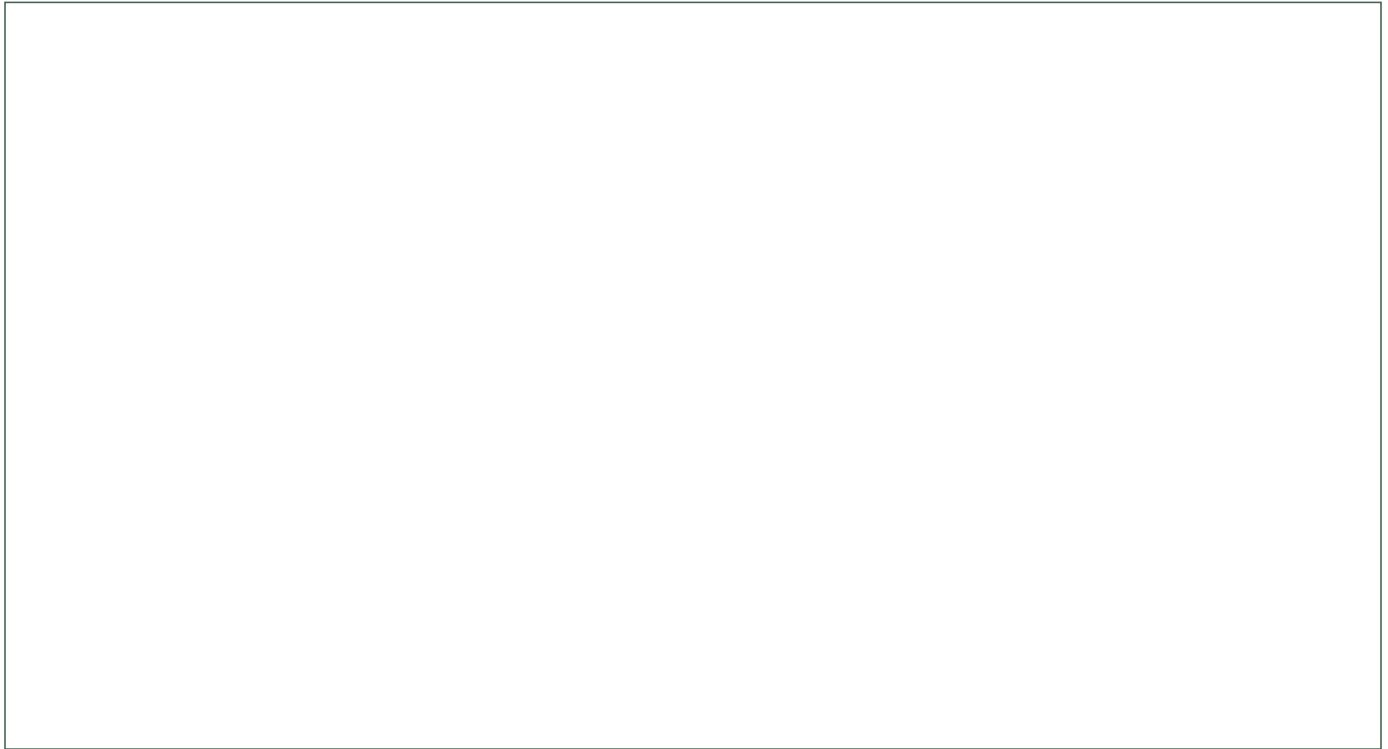
Tell or show how you know.

Student | Warm-up

002 | Make and explain

Name: _____ Date: _____

**Draw a quadrilateral with 4 straight sides, not all equal.
Mark and count its vertices.**



Tell or show how you know. An adult may record your words.

My explanation: _____

Teacher-only worked keys

Items 01-02

M01 | B - 6

Target A. Its 6 sides meet at 6 vertices.

001 | Accepted evidence

Target B. An acceptable closed triangle has 3 sides/vertices and 3 straight sides. Example coordinates are in the teacher drawing models. Accept rotations and other valid non-self-intersecting examples.

Accept mathematically equivalent explanations; record actual work and any mathematical cue separately.

M02 | C - pentagon

Target A. 5 straight sides define a pentagon.

002 | Accepted evidence

Target B. An acceptable closed quadrilateral has 4 sides/vertices and 4 straight sides, not all equal. Example coordinates are in the teacher drawing models. Accept rotations and other valid non-self-intersecting examples.

Accept mathematically equivalent explanations; record actual work and any mathematical cue separately.