Grade 4 Lines, Symmetry, and Classifying Polygons

Points, rays, parallel and perpendicular sides, symmetry, triangles, and quadrilaterals

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every skill

Break a shape into sides, corners, and folds, then sort the whole.

A Strategy Spotlight with a worked example opens every page.

Traced to Georgia's K-12 Mathematics Standards. The teacher page lists every code.
Answer keys follow the student pages.

TOUCHSTONE STANDARDS

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TOUCHSTONE STANDARDS | Teacher Page: Standards and How to Use

Georgia's K-12 Mathematics Standards (2021, effective SY2023-24) covered

Standard 4.GSR.8: Identify and draw geometric objects, classify polygons based on properties, and solve problems involving area and perimeter of rectangular figures.

Code	Element (GaDOE wording)	Pages
4.GSR.8.1	Explore, investigate, and draw points, lines, line segments, rays, angles (right, acute, obtuse), perpendicular lines, parallel lines, and lines of symmetry. Identify these in two-dimensional figures.	3 to 7, 13, 14
4.GSR.8.2	Classify, compare, and contrast polygons based on lines of symmetry, the presence or absence of parallel or perpendicular line segments, or the presence or absence of angles of a specified size and based on side lengths.	8 to 14

GaDOE notes we follow (4.GSR.8.2): "Right angles should be indicated with a square symbol." "The focus should not be on having students memorize terminology." "This objective does not require students to create a hierarchy." "In Georgia resources and assessments, the inclusive definitions for the classification of shapes are used. Therefore, trapezoids are defined using the inclusive definition: at least one pair of parallel sides."

GaDOE triangle terms (4.GSR.8.2; a colon stands for the dash in the source): Isosceles triangle: A triangle containing at least two equal length sides and two equal interior angle measures. Sub-class includes equilateral triangles. Equilateral triangle: A triangle with three equal-length sides and three 60-degree interior angles. Also known as an equiangular triangle. Scalene triangle: A triangle containing three unequal side lengths and three unequal angle measures. Right triangle: a triangle with one right angle. Acute triangle: a triangle containing three acute angles. Obtuse triangle: a triangle containing one obtuse angle.

Page map

Page	Section	Items	Code	Focus
3	Points, Lines, Segments, Rays	6	4.GSR.8.1	endpoints, arrows
4	Draw Them	6	4.GSR.8.1	draw on dots
5	Parallel and Perpendicular	6	4.GSR.8.1	parallel, perpendicular
6	Find Them in Figures	6	4.GSR.8.1	in polygons
7	Lines of Symmetry	6	4.GSR.8.1	fold lines
8	Sort by Properties	6	4.GSR.8.2	three properties
9	Triangles	6	4.GSR.8.2	sides, angles
10	Quadrilaterals by Properties	5	4.GSR.8.2	two flagged items
11	Same and Different	6	4.GSR.8.2	shared, only one
12	Which Shape Am I?	4	4.GSR.8.2	property clues
13	Shape Code	4	4.GSR.8.1, 8.2	self-checking
14	Mixed Review	5	4.GSR.8.1, 8.2	review, two-part

Our Approach: Part-Whole Thinking

A shape breaks into pieces students already know: sides, corners, and folds. Test one piece at a time, then put the results back together to sort and compare the whole shape. Model the Strategy Spotlight out loud first, then let students try.

Teaching notes

Shapes on dots carry no marks on student pages (students test corners with a card corner and count dots for parallel and perpendicular sides); keys add a square on every right angle. Shapes off the dots carry a square on every right angle and on no other corner, and tick marks on equal sides. No arrow marks for parallel sides. Every corner is a right angle or at least 15 degrees from one. Polygons are triangles, kites, trapezoids, rectangles, squares, rhombuses, other parallelograms, and pentagons. Names always appear with their meaning, no item asks whether one kind of shape is also another kind, and no item names an equilateral triangle by its sides. Only the two flagged items on page 10 use the inclusive trapezoid definition. Page 4 keys show one drawing; on page 6 either letter order names a side.

How to use

Work in order, 15 to 20 minutes a page; keys are pages 15 to 26. Formats mirror Milestones: multiple choice, select all, number entry, and a two-part item. Students need a ruler or straight edge and a card corner.

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Find Them in Figures

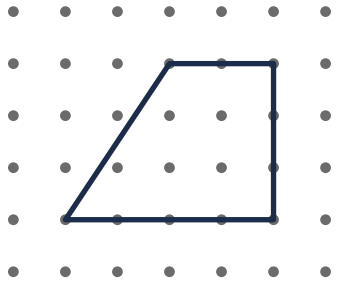
Name _____

Mark each right angle with a square, then answer.

Strategy Spotlight: Test Each Corner

Think: a card corner fits 3 corners exactly, so the shape has 3 right angles.

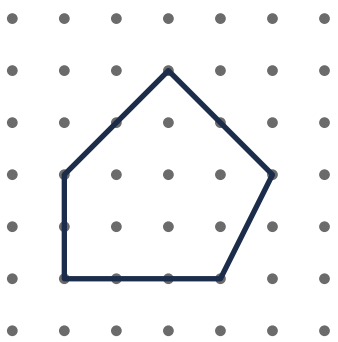
1



right angles ☐

pairs of parallel sides ☐

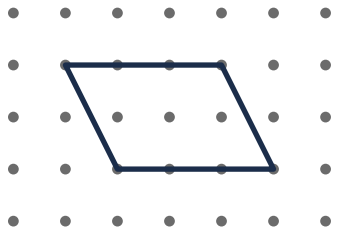
2



right angles ☐

pairs of parallel sides ☐

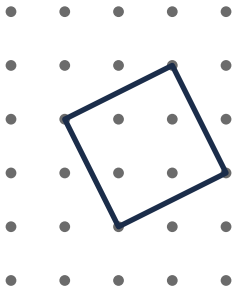
3



right angles ☐

pairs of parallel sides ☐

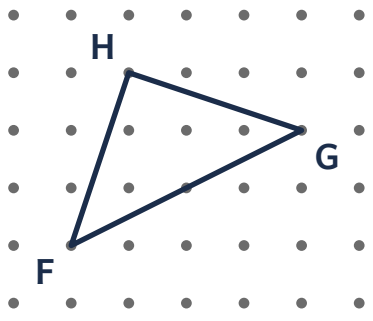
4



right angles ☐

pairs of parallel sides ☐

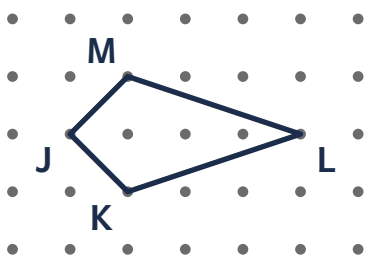
5 Name the pair of perpendicular sides.



side ☐

and side ☐

6 Name the pair of perpendicular sides.



side ☐

and side ☐

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Answer Key: Find Them in Figures

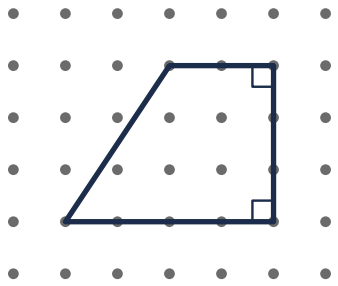
Name _____

Mark each right angle with a square, then answer.

Strategy Spotlight: Test Each Corner

Think: a card corner fits 3 corners exactly, so the shape has 3 right angles.

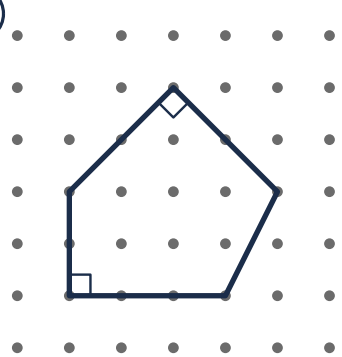
1



right angles: **2**

pairs of parallel sides: **1**

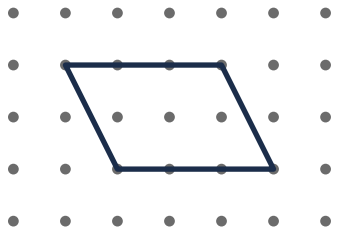
2



right angles: **2**

pairs of parallel sides: **0**

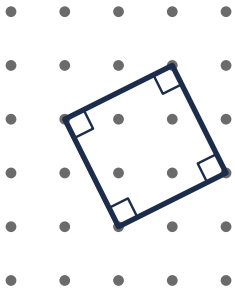
3



right angles: **0**

pairs of parallel sides: **2**

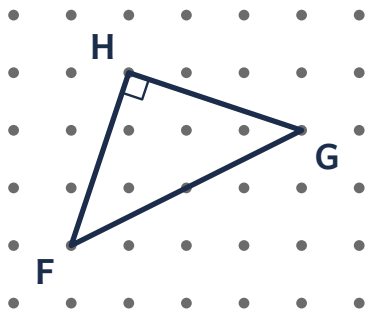
4



right angles: **4**

pairs of parallel sides: **2**

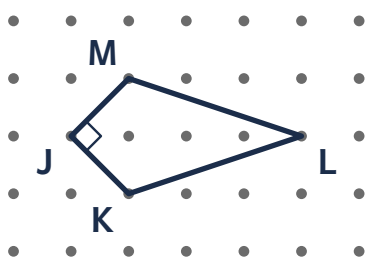
5 Name the pair of perpendicular sides.



side: **GH**

and side: **HF**

6 Name the pair of perpendicular sides.



side: **JK**

and side: **MJ**

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Quadrilaterals by Properties

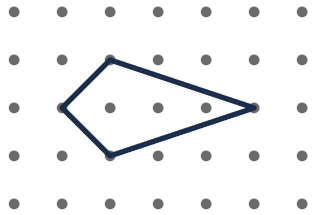
Name _____

Test the six shapes on the dots, then answer each question.

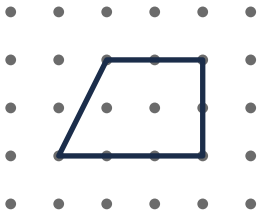
Strategy Spotlight: Test on the Dots

Think: a card corner fits all 4 corners, so the shape has 4 right angles.

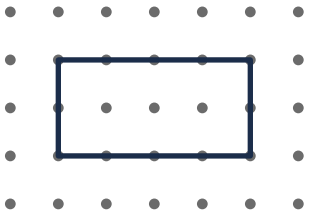
A



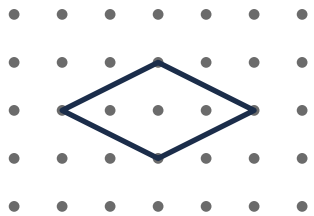
B



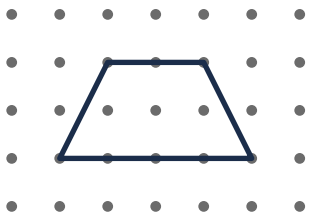
C



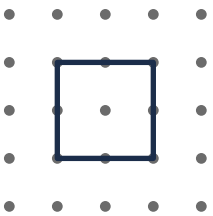
D



E



F



1 Select all the shapes that have exactly 1 pair of parallel sides.

☐ A ☐ B ☐ C ☐ D ☐ E ☐ F

2 Select all the shapes that have 4 right angles.

☐ A ☐ B ☐ C ☐ D ☐ E ☐ F

3 Select all the shapes that have 4 equal sides.

☐ A ☐ B ☐ C ☐ D ☐ E ☐ F

4 A trapezoid has at least 1 pair of parallel sides. Select all the trapezoids.

☐ A ☐ B ☐ C ☐ D ☐ E ☐ F

5 A trapezoid has at least 1 pair of parallel sides. Which is not a trapezoid?

A B C D E F

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Answer Key: Quadrilaterals by Properties

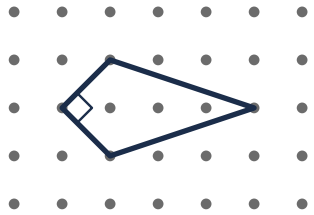
Name _____

Test the six shapes on the dots, then answer each question.

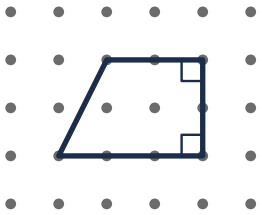
Strategy Spotlight: Test on the Dots

Think: a card corner fits all 4 corners, so the shape has 4 right angles.

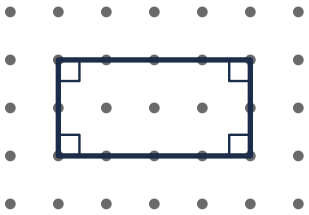
A



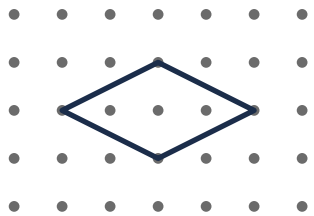
B



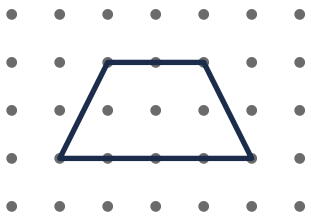
C



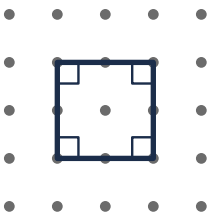
D



E



F



1 **Select all the shapes that have exactly 1 pair of parallel sides.**

☐ A ☑ B ☐ C ☐ D ☑ E ☐ F

2 **Select all the shapes that have 4 right angles.**

☐ A ☐ B ☑ C ☐ D ☐ E ☑ F

3 **Select all the shapes that have 4 equal sides.**

☐ A ☐ B ☐ C ☑ D ☐ E ☑ F

4 **A trapezoid has at least 1 pair of parallel sides. Select all the trapezoids.**

☐ A ☑ B ☑ C ☑ D ☑ E ☑ F GaDOE inclusive definition

5 **A trapezoid has at least 1 pair of parallel sides. Which is not a trapezoid?**

(A) B C D E F GaDOE inclusive definition

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