

Grade 3 - Quadrilaterals and Partitioning Shapes

- Lesson

Common Core 3.G.A.1, 3.G.A.2 · maths-pdf.fr/en/

This **quadrilaterals lesson** for 3rd Grade covers quadrilaterals and partitioning shapes (Common Core 3.G.A.1, 3.G.A.2), with a free PDF to print.

A quadrilateral is a closed shape with exactly 4 straight sides and 4 corners. Squares, rectangles, rhombuses, and trapezoids are quadrilaterals, and shapes can be sorted by attributes such as equal sides and right angles. A shape cut into equal areas has parts named by unit fractions, like one fourth.

Grade 3 · Common Core State Standards: **3.G.A.1, 3.G.A.2**

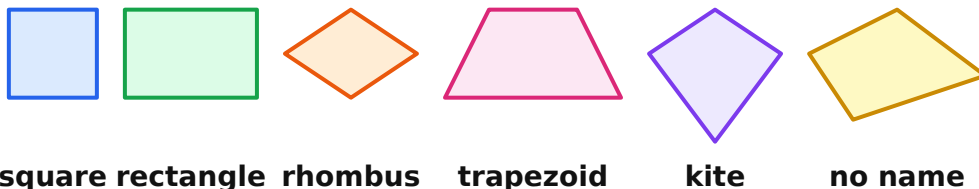
Key facts in this quadrilaterals lesson

Key facts

- A quadrilateral has exactly 4 straight sides and 4 corners.
- A rhombus has 4 equal sides; a rectangle has 4 right angles.
- A square is a rhombus and a rectangle at the same time.
- Some quadrilaterals are not rhombuses, rectangles, or squares.
- Equal parts have equal area, and each of n equal parts is $1/n$ of the whole.

What is a quadrilateral?

A **quadrilateral** is a closed shape with exactly 4 straight sides and 4 corners. The word comes from "quad," which means four, and "lateral," which means side. Squares, rectangles, rhombuses, and trapezoids are all quadrilaterals. So are many shapes that have no special name.

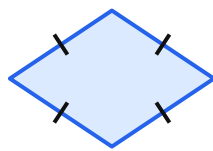


Six quadrilaterals, each with 4 straight sides: a square, a rectangle, a rhombus, a trapezoid, a kite, and a four-sided shape with no special name

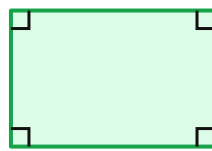
How do you sort quadrilaterals by their attributes?

An *attribute* is something you can notice about a shape, like how many sides are equal, how many right angles it has, or whether sides are parallel. Parallel sides always stay the same distance apart and never meet. Shapes that share an attribute can go in the same group.

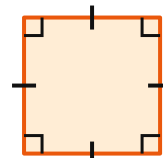
Shape	Equal sides	Right angles	Parallel pairs
Square	all 4	4	2
Rectangle	opposite sides	4	2
Rhombus	all 4	not needed	2
Trapezoid	not needed	not needed	1



4 equal sides



4 right angles



both

A rhombus with tick marks on 4 equal sides, a rectangle with 4 right angle marks, and a square with both

Can one shape belong to more than one group?

Sharing groups

A square has 4 equal sides, so it is a rhombus. It also has 4 right angles, so it is a rectangle. A square is a rhombus, a rectangle, and a quadrilateral all at once.

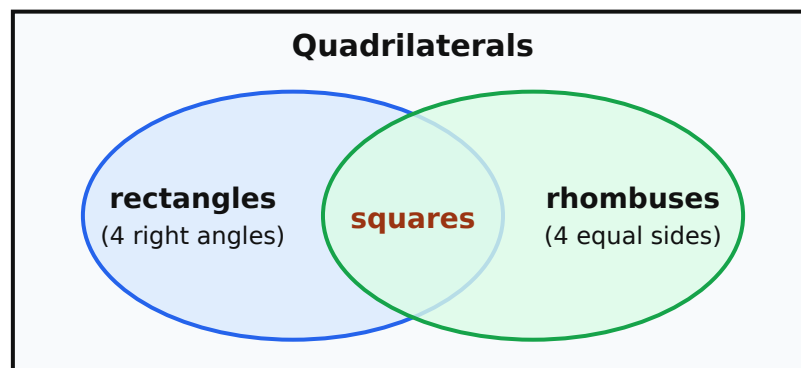
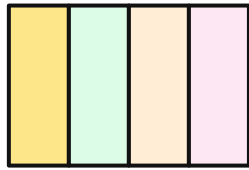


Diagram: rectangles and rhombuses overlap, squares are in the overlap, and both groups sit inside the group of quadrilaterals

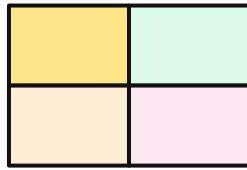
Some quadrilaterals are not rhombuses, rectangles, or squares. A kite and a four-sided shape with sides of 4 different lengths are two examples. You can draw one by joining 4 points with straight sides.

How do you cut a shape into equal parts?

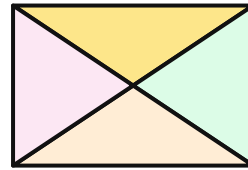
Equal parts have the same **area**, which is the amount of flat space a part covers. The parts do not have to look alike. If a shape is cut into 4 parts with equal area, each part is **one fourth** of the whole, written $\frac{1}{4}$.



4 columns



4 squares

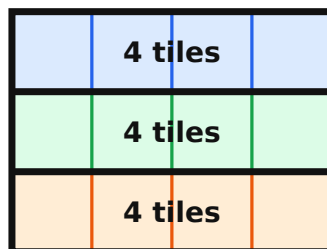


4 triangles

One rectangle cut into 4 equal-area parts three ways: 4 columns, 4 squares, and 4 triangles; each part is one fourth of the whole

1. Count how many equal parts the shape must make.
2. Draw lines that make parts with the same area.
3. Name one part with a unit fraction: 1 over the number of parts.

Example. Priya has a mat of 12 tiles. She wants 3 equal parts. Each part gets $12 \div 3 = 4$ tiles, so each part is $\frac{1}{3}$ of the mat.



A mat of 12 tiles in 4 columns and 3 rows, cut into 3 rows of 4 tiles each; each row is one third of the mat

Quadrilaterals lesson: questions and answers

How many sides does a quadrilateral have?

A quadrilateral has exactly 4 straight sides and 4 corners. If a closed shape has 3, 5, or 6 sides, it is not a quadrilateral.

Is a square a rectangle?

Yes. A rectangle is a quadrilateral with 4 right angles, and every square has 4 right angles. A square is a special rectangle whose sides are all equal.

What is the difference between a rhombus and a square?

Both have 4 equal sides. A square must also have 4 right angles, but a rhombus does not need any. So every square is a rhombus, but most rhombuses are not squares.

Do equal parts have to look the same?

No. Equal parts must have the same area, but they can have different shapes. A rectangle can be cut into 2 equal halves with a straight line down the middle or with a slanted line through the center.

How do you name one part of a shape cut into equal parts?

Write 1 over the number of equal parts. If a shape is cut into 6 parts with the same area, each part is one sixth of the whole.

How to use this quadrilaterals lesson

Read the definitions first, then follow the worked method line by line and redo the example on paper without looking. When every step makes sense, move on to the worksheet, then check yourself with the quiz.

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