

Grade 2 · Shapes and Equal Shares · Lesson

Common Core 2.G.A.1, 2.G.A.2, 2.G.A.3 · mathovore.fr

A shape is named by its number of sides: a triangle has 3, a quadrilateral has 4, a pentagon has 5, and a hexagon has 6. Second graders also learn that a cube has 6 square faces, that rectangles split into equal rows and columns of squares, and that equal shares are halves, thirds, and fourths.

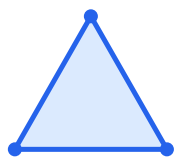
Grade 2 Common Core: 2.G.A.1 · 2.G.A.2 · 2.G.A.3

Key facts:

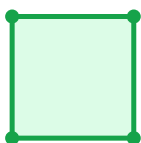
- A triangle has 3 sides, a quadrilateral 4, a pentagon 5, and a hexagon 6.
- A cube has 6 faces, and every face is a square.
- To count squares in a rectangle, add the number in one row once for each row.
- Halves, thirds, and fourths are 2, 3, and 4 equal shares of a whole.
- Equal shares can have different shapes and still be the same size.

What are triangles, quadrilaterals, pentagons, and hexagons?

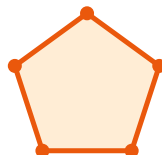
A flat shape has **sides**, which are straight lines, and **vertices**, which are the corners where two sides meet. The number of sides gives the shape its name.



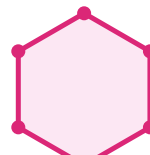
Triangle
3 sides



Quadrilateral
4 sides



Pentagon
5 sides



Hexagon
6 sides

Each shape is named by how many sides it has. The dots mark the vertices.

Shape names

A **triangle** has 3 sides. A **quadrilateral** has 4 sides. A **pentagon** has 5 sides. A **hexagon** has 6 sides. A shape always has as many vertices as it has sides.

Which shapes are quadrilaterals?

Any shape with 4 sides is a quadrilateral. Squares, rectangles, rhombuses, and trapezoids all have 4 sides, so they are all quadrilaterals. A square also has 4 equal sides and 4 square corners.



Square



Rectangle



Rhombus

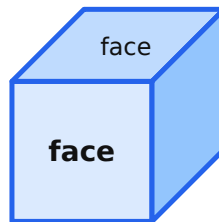


Trapezoid

All of these shapes have 4 sides, so all of them are quadrilaterals.

What is a cube?

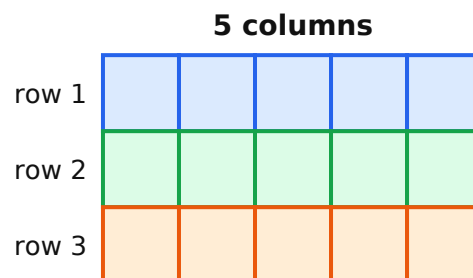
A cube is a solid shape, not a flat one. It has 6 flat faces, and every face is a square. A number cube used in board games is a cube.



A cube has 6 faces. Every face is a square.

How do you count the squares in a rectangle?

A rectangle can be split into **rows** that go across and **columns** that go up and down. All the squares are the same size, with no gaps and no overlaps.

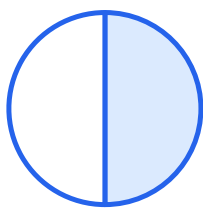


3 rows of 5 squares: $5 + 5 + 5 = 15$ squares.

1. Count the squares in one row. Here, 1 row has 5 squares.
2. Count the rows. Here, there are 3 rows.
3. Add the same number once for every row: $5+5+5=15$.
4. Write the total: the rectangle has **15 squares**.

What are halves, thirds, and fourths?

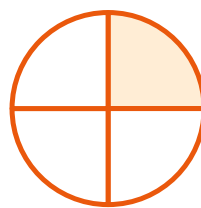
Equal shares are parts of a whole that are exactly the same size. Cut a whole into 2 equal shares and each one is a **half**. Cut it into 3 equal shares and each one is a **third**. Cut it into 4 equal shares and each one is a **fourth**.



halves



thirds



fourths

One part of each circle is shaded: one half, one third, one fourth.

Parts of a whole

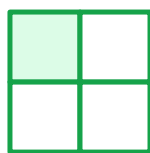
Two halves make the whole. Three thirds make the whole. Four fourths make the whole. The words *half of*, *a third of*, and *a fourth of* tell which equal share you mean.

Can equal shares have different shapes?

Yes. Shares are equal when they cover the same amount of space, even if they look different. A square cut into fourths can give four strips, four small squares, or four triangles. Each fourth is still one of 4 equal shares.



strips



squares



triangles

Three ways to cut a square into fourths. The fourths have different shapes but the same size.

Shapes and Equal Shares: frequently asked questions

What is a quadrilateral?

A quadrilateral is any flat shape with 4 sides and 4 vertices. Squares, rectangles, rhombuses, and trapezoids are all quadrilaterals.

How many faces does a cube have?

A cube has 6 faces. Every face is a square, and all the faces are the same size.

How do you find how many squares are in a rectangle?

Count the squares in one row, count the rows, and add the row number once for each row. For 4 rows of 3, write $3 + 3 + 3 + 3 = 12$.

How many fourths make a whole?

Four fourths make one whole. In the same way, two halves make a whole and three thirds make a whole.

Do equal shares have to look the same?

No. Equal shares must be the same size, but they can have different shapes. Two halves of a square can be rectangles or triangles.