

Grade 6 - Ratios and Ratio Language - Lesson

Common Core 6.RP.A.1 · maths-pdf.fr/en/

This **ratios lesson** for 6th Grade covers ratios and ratio language (Common Core 6.RP.A.1), with a free PDF to print.

A ratio is an ordered comparison of two quantities, such as 3 red tiles to 5 blue tiles. You can write it as 3:5, as 3 to 5, or as the fraction $\frac{3}{5}$. The order matters, because 3:5 is not 5:3. Multiplying or dividing both numbers by the same nonzero number gives an equivalent ratio.

Grade 6 · Common Core State Standards: **6.RP.A.1**

Key facts in this ratios lesson

Key facts

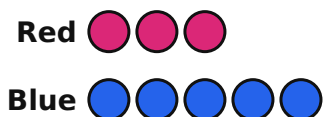
- A ratio compares two quantities and can be written $a:b$, a to b , or a/b .
- Order matters: the first number matches the first quantity named.
- Ratios can compare part to part or part to whole.
- Multiply or divide both numbers by the same nonzero number to make equivalent ratios.
- A tape diagram splits a total into equal parts to solve ratio problems.

What is a ratio?

A ratio is a way to compare two quantities by division. If a school store sells 3 red pencils for every 5 blue pencils, the ratio of red to blue is 3 to 5. Ratios show up in recipes, sports scores, maps, and prices.

Ratio

A **ratio** is an ordered comparison of two quantities. The ratio of a to b can be written as $a:b$, as a to b , or as $\frac{a}{b}$.



The ratio of red tiles to blue tiles is 3 to 5.

How do you write and read a ratio?

The order matters. The ratio of red to blue tiles is 3:5, but the ratio of blue to red tiles is 5:3. Always match the order of the numbers to the order of the words.

Kind of ratio	Example	Written as
Part to part	3 red tiles to 5 blue tiles	3:5
Part to whole	3 red tiles to 8 tiles in all	3:8
Whole to part	8 tiles in all to 5 blue tiles	8:5

Flour

2

Sugar

3

A part-to-part ratio shown as bars: 2 to 3.

A ratio can use the phrase *for every*. A bag of lemonade mix with a ratio of 2 to 3 has 2 scoops of mix for every 3 cups of water.

What are equivalent ratios?

Equivalent ratios describe the same comparison. To make one, multiply or divide both numbers by the same nonzero number. The ratios 2:3, 4:6, and 6:9 are all equivalent.

2 : 3

2

3

6 : 9

6

9

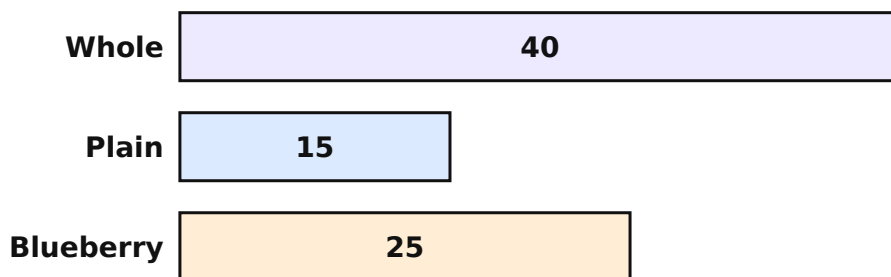
Multiplying both parts by 3 gives the equivalent ratio 6 to 9.

A ratio is in **simplest form** when the only common factor of the two numbers is 1. To simplify 12:18, divide both numbers by 6 to get 2:3.

How do you solve a ratio problem with a tape diagram?

1. Draw one box for each part of the ratio.
2. Add the parts to find how many equal parts the whole has.
3. Divide the total by the number of parts to find the size of one part.
4. Multiply to find each quantity, then check that the amounts add up.

Example: A bakery makes 40 muffins, plain and blueberry, in the ratio 3 to 5. The whole has $3+5=8$ parts. One part is $40\div 8=5$. Plain: $3\times 5=15$. Blueberry: $5\times 5=25$. Check: $15+25=40$.



Eight equal parts hold 40 muffins, so one part is 5.

Ratios lesson: questions and answers

What is a ratio in math?

A ratio is a comparison of two quantities. For example, 4 cats and 7 dogs gives the ratio 4 to 7, written 4:7.

What is the difference between part-to-part and part-to-whole ratios?

A part-to-part ratio compares two groups, like 3 boys to 5 girls. A part-to-whole ratio compares one group to everything, like 3 boys to 8 students.

How do you find an equivalent ratio?

Multiply or divide both numbers of the ratio by the same nonzero number. For 2:3, multiplying by 4 gives 8:12.

How do you write a ratio in simplest form?

Divide both numbers by their greatest common factor. The ratio 18:24 simplifies to 3:4 because the GCF is 6.

Is a ratio the same as a fraction?

A ratio can be written as a fraction, but it does not always mean a part of a whole. The ratio 3 to 5 of red to blue tiles, $\frac{3}{5}$, compares two groups.

How to use this ratios 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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