

Learn: complete matched groups

Before scaling: what does 3:5 mean?

In this lesson, 3:5 means 3 star stickers for every 5 circle stickers. In this stars:circles ratio, the first number counts stars and the second counts circles. For any ratio, keep the order of its named quantities. One complete group has 3 stars and 5 circles. Two complete groups have 6 stars and 10 circles. You may draw labeled groups instead of using counters. Changing the number of complete groups keeps the stars-to-circles relationship.

Teacher model: two complete groups

A pattern uses 3 star stickers for every 5 circle stickers. It needs 6 stars. How many circles keep the same relationship?

Complete groups	Stars	Circles
1	3	5
2	6	10

Think aloud: Six stars is two groups of three stars. Each group needs five circles, so two groups need ten circles. I changed the number of complete groups, not the match between stars and circles.

Contrast: The proposal 6 stars and 8 circles adds 3 to both original counts. It does not make two complete 3-and-5 groups. Adding another complete group of 3 stars and 5 circles is valid; adding the same amount to unequal parts is the problem here.

RR02-M1 · Model

Watch the complete-group model for 3 stars for every 5 circles. Explain why 6:10 keeps the relationship and 6:8 does not.

Try it together

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RR02-G1 · Guided

A pattern has 3 stars for every 5 circles. If it has 9 stars, how many circles keep the relationship? Show groups or a table.

RR02-G2 · Guided

The same pattern has 20 circles. How many stars keep the relationship? Explain starting with the circles.

RR02-G3 · Guided

Which pairs keep 3 stars for every 5 circles: 6:10, 6:8, 9:15, 12:20? Explain one pair that works and why 6:8 does not.

Independent thinking · RR02-C1

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RR02-C1 · Independent check

A flag display repeats a group of 2 triangle flags and 7 rectangular flags. If it has 8 triangle flags, how many rectangular flags should it have? Show why.

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Independent thinking · RR02-C2

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RR02-C2 · Independent check

A different banner uses 3 square flags for every 8 round flags. Two proposals are 6 squares with 16 rounds and 6 squares with 11 rounds. Which keeps the relationship? Explain why the other does not.

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Independent thinking · RR02-C3

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RR02-C3 · Independent check

A strip uses 5 centimetres of striped ribbon for every 8 centimetres of plain ribbon. A version has 15 centimetres of striped ribbon. How much plain ribbon does it need? Explain and keep the units.

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Stretch the idea

RR02-X1 · Extension

A pattern is built only from complete groups of 3 stars and 5 circles. Can it contain exactly 30 stickers with none left over? What about 32? Explain the whole-group rule.
