

## Targeted Remediation

### Describing and Representing Ratios (15 Min)

The following intervention was designed to allow for a variety of student responses, promoting rich conversations and a deeper understanding of concepts.

#### Reasons Students Might Struggle

Some students confuse different ratios representing a situation. For example, a student might use a part-to-part ratio instead of a part-to-whole ratio.

#### Visual for Class Projection



KNOWLEDGEHOOK

Sometimes showing just a visual promotes curiosity and prompts the question

#### Open Question Approach

#### What ratio comparisons can you make about the marshmallow creatures?

Explore to see if students can identify both the part-to-part (3 fish : 5 butterflies; and 5 butterflies : 3 fish) and part-to-whole (3 fish : 8 creatures; and 5 butterflies : 8 creatures) ratios associated with the picture and tell what each one describes. Explore to see whether students realize how the ratio for the total number of fish to butterflies (9:15) relates to the ratio 3:5 (9 is a multiple of 3 and 15 is a multiple of 5, using the number of groups as the multiplier). Also, the total number of creatures, 24, is a multiple of 8, (3+5).

## If the ratio of fish to butterflies had been 3:4 instead, what could the picture show and what could you know?

Explore to see how much information students can infer from a given ratio. For example, they might realize that more than half the creatures are butterflies, the number of fish is a multiple of 3, the number of butterflies is a multiple of 4, the total number of creatures is a multiple of 7, and that this is true for 1, 2, 3 or more groups of creatures. (For example, with 5 groups of creatures, possible ratios are 3:4, 4:3, 3:7, 4:7, 15:20, 20:15, 15:35, and 20:35)

### Guided Instruction Approach

A ratio is a comparison between two numbers.

#### What do the ratios 3:5 and 3:8 tell us about the creatures?

The ratio 3:5, can be described in the form "3 fish for every 5 butterflies." Then there are more ratios. For example, if there are 3 fish for every 5 butterflies, we can write 3 fish : 5 butterflies, but we can also write 5 butterflies : 3 fish, 3 fish : 8 creatures, or 5 butterflies : 8 creatures.

When the number of fish are compared to the number of butterflies, we call it a "part-to-part ratio", since parts of a whole are being compared. When either the number of fish or the number of butterflies are compared to the total number of creatures, we call it a "part-to-whole ratio."

#### How do the total number of fish and total number of butterflies relate to the ratio 3:5?

If the ratio of fish : butterflies is 3:5, then the total number of fish, 9 is a multiple of 3, and the total number of butterflies, 15 is a multiple of 5, and the total number of creatures, 24 is a multiple of 8, (3 + 5). The number of groups, 3 is the multiplier for each part, or whole.

The ratios for the total numbers of fish, butterflies and creatures would be 9 fish : 15 butterflies, 15 butterflies : 9 fish, 9 fish : 24 creatures and 15 butterflies : 24 creatures.



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What does the ratios 3:5 tell us about the creatures?



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What does the ratio 3:8 tell us about the creatures?



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