Name: _____ Date: _____

Sea Green Paint and the Ratio That Stays Put

Circle group

Ines is painting a big wall. She needs one shade of sea green. Her art teacher gave her a recipe. Mix 3 cups of blue paint with 1 cup of yellow. A ratio compares two amounts. Here the ratio of blue to yellow is 3 to 1.

The wall is bigger than Ines planned. She needs more paint. She mixes 6 cups of blue with 2 cups of yellow. The batch is bigger, but the color is the same. She doubled both amounts. So 6 to 2 is the same as 3 to 1. These are called equivalent ratios.

Her friend Tomas has an idea. "Let's add 2 more cups to each color," he says. Ines tries a small test. She uses 5 cups of blue and 3 cups of yellow. The test looks more yellow. The ratio is now 5 to 3, so the color changed.

Here is the rule. To keep a shade, multiply or divide both parts by the same number. Adding the same number to both parts makes a new shade.

Questions

1. What is the ratio of blue to yellow in the recipe?

_____

_____

2. What did Ines mix for the bigger batch?

_____

_____

3. Why is 6 to 2 the same shade as 3 to 1?

_____

_____

4. What idea did Tomas have?

_____

_____

5. Why did the test look more yellow?

_____

_____

6. What rule keeps a shade the same?

_____

_____

Words to know

ratio: a comparison of two amounts
shade: a particular kind of a color
equivalent: equal in value even if it looks different
batch: an amount made all at one time

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Sea Green Paint and the Ratio That Stays Put

Triangle group

Ines is painting a mural on the wall of the school gym, and she needs one exact shade of sea green. The recipe from her art teacher says to mix 3 cups of blue paint with 1 cup of yellow, and a ratio is a comparison of two amounts, so the ratio of blue to yellow in this recipe is 3 to 1.

The mural turns out to be bigger than Ines planned, so she needs a much larger batch, and she mixes 6 cups of blue with 2 cups of yellow. The batch is bigger, but the shade matches the first one perfectly. Doubling both amounts kept the ratio the same, because 6 to 2 is just 3 to 1 written with larger numbers, and ratios like these are called equivalent ratios.

Then her friend Tomas suggests a shortcut. "Let's add 2 more cups to each color," he says. Ines tries a small test with 5 cups of blue and 3 cups of yellow. The test looks much more yellow than the first batch. Adding the same amount to both parts changed the ratio to 5 to 3, and the color changed along with it.

The rule is simple. To keep a shade, multiply or divide both parts by the same number. Adding the same number to both parts creates a new ratio and a new shade. Painters, bakers, and cooks all depend on this idea every day.

Questions

1. What is the ratio of blue to yellow in the teacher's recipe?

_____

_____

2. What amounts did Ines mix for the larger batch?

_____

_____

3. Why does 6 to 2 give the same shade as 3 to 1?

_____

_____

4. What shortcut did Tomas suggest?

_____

_____

5. Why did the test batch look more yellow?

_____

_____

6. What rule keeps a shade the same?

_____

_____

Words to know

ratio: a comparison of two amounts
mural: a large painting made on a wall
shade: a particular kind of a color
equivalent: equal in value even if it looks different
batch: an amount made all at one time

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Sea Green Paint and the Ratio That Stays Put

Square group

Ines is painting a mural on the side of a building, and she needs to match one particular shade of sea green. The recipe supplied by her art teacher instructs her to blend 3 cups of blue paint with 1 cup of yellow. A ratio is a comparison between two quantities, and in this recipe the ratio of blue to yellow is 3 to 1.

As the work goes on, the mural proves to be much larger than Ines had anticipated, so she must prepare a bigger batch. She combines 6 cups of blue with 2 cups of yellow. Although the batch is larger, the shade matches the first one perfectly. Doubling both quantities preserved the ratio, since 6 to 2 is simply 3 to 1 expressed in larger numbers. Ratios of this kind are known as equivalent ratios.

Her friend Tomas then proposes what he considers a clever shortcut. "Let's add 2 more cups to each color," he suggests. Ines wisely tries a small test first, using 5 cups of blue and 3 cups of yellow. The sample looks noticeably more yellow than the original batch. Adding an equal amount to both parts changed the ratio to 5 to 3, and the color changed right along with it.

The principle is straightforward. To preserve a shade, multiply or divide both parts by the same number. Adding the same number to each part produces a different ratio and therefore a different shade. Painters, bakers, and cooks rely on this idea constantly.

Questions

1. What is the ratio of blue to yellow in the art teacher's recipe?

_____

_____

2. What quantities did Ines combine for the larger batch?

_____

_____

3. Why does the ratio 6 to 2 produce the same shade as 3 to 1?

_____

_____

4. What shortcut did Tomas propose?

_____

_____

5. Why did the small test look more yellow than the first batch?

_____

_____

6. What principle keeps a shade the same when making more paint?

_____

_____

Words to know

ratio: a comparison of two amounts
mural: a large painting made on a wall
shade: a particular kind of a color
equivalent: equal in value even if it looks different
batch: an amount made all at one time

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Sea Green Paint and the Ratio That Stays Put

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Sea Green Paint and the Ratio That Stays Put

Easier · 160 words · Flesch-Kincaid grade 1.6

1. 3 to 1.
2. 6 cups of blue and 2 cups of yellow.
3. Both amounts were doubled.
4. Add 2 more cups to each color.
5. Adding to both parts changed the ratio to 5 to 3.
6. Multiply or divide both parts by the same number.

Triangle: Sea Green Paint and the Ratio That Stays Put

This passage · 224 words · Flesch-Kincaid grade 5.7

1. 3 to 1.
2. 6 cups of blue and 2 cups of yellow.
3. Both parts were doubled, so the ratio stayed the same.
4. Add 2 more cups to each color.
5. Adding the same amount to both parts changed the ratio to 5 to 3.
6. Multiply or divide both parts by the same number.

Square: Sea Green Paint and the Ratio That Stays Put

Harder · 236 words · Flesch-Kincaid grade 6.9

1. 3 to 1.
2. 6 cups of blue and 2 cups of yellow.
3. Both parts were doubled, so the ratio did not change.
4. Adding 2 more cups to each color.
5. Adding the same amount to both parts changed the ratio to 5 to 3.
6. Multiplying or dividing both parts by the same number.