LESSON MAKER PRO

Shade and Add

Turn shaded parts into sums of unit fractions.

GRADE 3 · 3.NS.3.b

3.NS.3.b "Identify a fraction represented by a model as the sum of unit fractions."

NAME _____ DATE _____

ONE PART AT A TIME

When a whole is split into equal parts, one part is a unit fraction. Use the number of equal parts as the bottom number, then add one unit fraction for each shaded part.

WORKED EXAMPLE

A bar is split into 9 equal parts. 4 parts are shaded. Write the shaded fraction as a sum of unit fractions.

1. One equal part is 1/9.
2. There are 4 shaded parts.
3. Add 1/9 four times: 1/9 + 1/9 + 1/9 + 1/9.

Answer: 4/9 = 1/9 + 1/9 + 1/9 + 1/9

PRACTICE 6 problems

1 Each box is an equal part of one whole. Model: [■][□] Write the shaded fraction as a sum of unit fractions.

ANSWER _____

2 Each box is an equal part of one whole. Model: [■][■][□] Write the shaded fraction as a sum of unit fractions.

ANSWER _____

3 Each box is an equal part of one whole. Model: [■][■][■][□][□] Write the shaded fraction as a sum of unit fractions.

ANSWER _____

4 Each box is an equal part of one whole. Model: [■][■][■][■][■][□] Write the shaded fraction as a sum of unit fractions.

ANSWER _____

5 Each box is an equal part of one whole. Model: [■][■][■][■][■][□][□] Write the shaded fraction as a sum of unit fractions.

ANSWER _____

6 Each box is an equal part of one whole. Model: [■][■][■][■][■][■][□][□] Write the shaded fraction as a sum of unit fractions.

ANSWER _____

APPLY IT Show your work

1 At game club, Leo's level tracker has 7 equal spaces. 3 spaces are filled. Write the filled part of the tracker as a sum of unit fractions.

WORK SPACE

ANSWER _____

2 Nia has a sticker sheet with 10 equal spaces. 6 spaces have shiny robot stickers. Write the part of the sheet with robot stickers as a sum of unit fractions.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Each box is an equal part of one whole. Model: [■][■][■][■][■][■][■][□][□][□][□][□] Write the shaded fraction as a sum of unit fractions. Then explain why every fraction in your sum has 12 on the bottom.

_____

_____

ANSWER KEY

Shade and Add

GRADE 3 · 3.NS.3.b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Each box is an equal part of one whole. Model: [■][□] Write the shaded fraction as a sum of unit fractions.	**1/2**
2	Each box is an equal part of one whole. Model: [■][■][□] Write the shaded fraction as a sum of unit fractions.	**1/3 + 1/3**
3	Each box is an equal part of one whole. Model: [■][■][■][□][□] Write the shaded fraction as a sum of unit fractions.	**1/5 + 1/5 + 1/5**
4	Each box is an equal part of one whole. Model: [■][■][■][■][■][□] Write the shaded fraction as a sum of unit fractions.	**1/6 + 1/6 + 1/6 + 1/6 + 1/6**
5	Each box is an equal part of one whole. Model: [■][■][■][■][■][□][□] Write the shaded fraction as a sum of unit fractions.	**1/7 + 1/7 + 1/7 + 1/7 + 1/7**
6	Each box is an equal part of one whole. Model: [■][■][■][■][■][■][□][□] Write the shaded fraction as a sum of unit fractions.	**1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8**

PART 2 · APPLY IT

1. **1/7 + 1/7 + 1/7** Each space is 1/7 because the tracker has 7 equal spaces. Add 1/7 for each of the 3 filled spaces.
2. **1/10 + 1/10 + 1/10 + 1/10 + 1/10 + 1/10** Each equal space is 1/10. There are 6 spaces with robot stickers, so add 1/10 six times.

CHALLENGE

7/12 = 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12. Every fraction has 12 on the bottom because the whole is split into 12 equal parts.

Accept unit-fraction sums in any order if the correct unit fraction appears once for each shaded part. For a model, students should use the model's denominator in every unit fraction, even when the shaded fraction could be renamed with an equivalent fraction.