3rd Basic

4th Advanced

Helping With Math

USA GRADES

Decomposing Fractions

Suitable for students **aged 7-9**

This pack is suitable for learners aged 7-9 years old or 3rd to 4th graders (USA). The content covers fact files and relevant basic and advanced activities involving decomposing fractions.

- Decompose simply means ‘breaking apart’, 'splitting up' or 'dividing into smaller parts'.
- To decompose a fraction is a process of dividing a fraction into smaller fractions, such that on adding all the smaller parts together, it results in the initial fraction.

William has a green thumb. He wants to split up the ¾ kg of loam soil into three pots. How is he going to decompose ¾ ?

$$\frac{3}{4} = \boxed{\frac{1}{4}} \boxed{\frac{1}{4}} \boxed{\frac{1}{4}}$$

$$\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$$

CONCEPTS

Decompose $\frac{8}{10}$.

We can decompose eight - tenths in many ways. Look at our examples below.

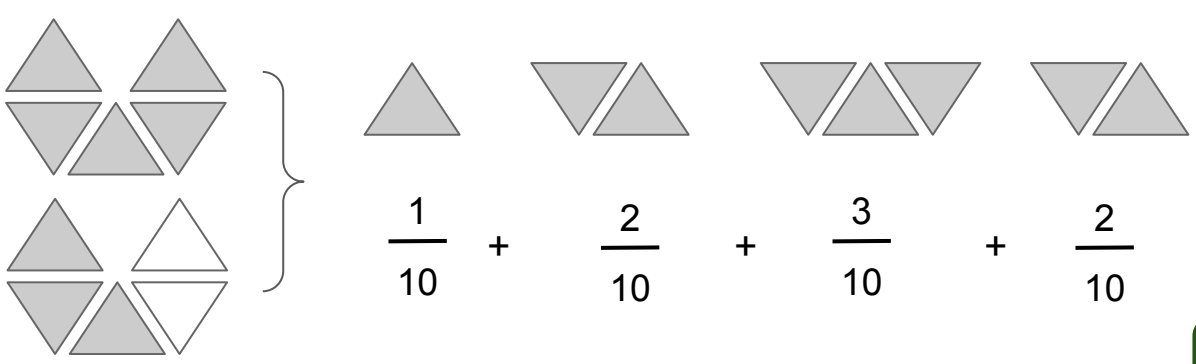
$\frac{8}{10}$ We can decompose this fraction into unit fractions. Let us no split up 8/10 into unit fraction of 1/10.

$\frac{8}{10}$ =

1/10	1/10	1/10	1/10	1/10	1/10	1/10	1/10

$\frac{8}{10}$ We can decompose this fraction into different smaller like fractions.

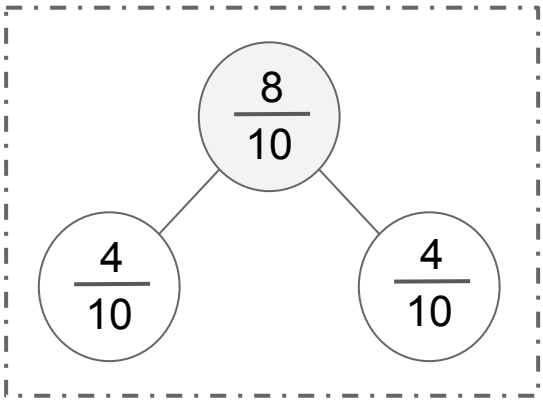
$$\frac{8}{10} = \frac{1}{10} + \frac{2}{10} + \frac{3}{10} + \frac{2}{10} \quad \Big\} \quad \frac{1+2+3+2}{10} = \frac{8}{10}$$



$$\frac{1}{10} + \frac{2}{10} + \frac{3}{10} + \frac{2}{10}$$

SAMPLE/APPLICATION

$\frac{8}{10}$ We can decompose this fraction into two parts.



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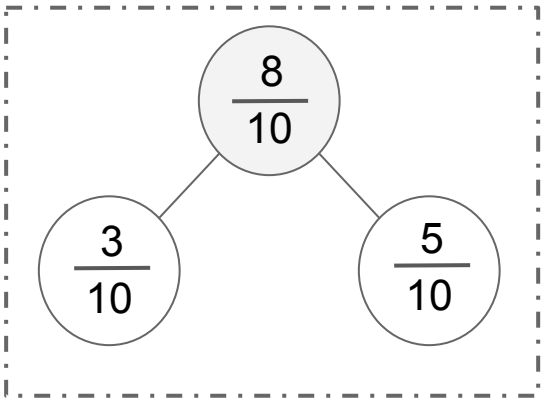


PRACTICE EXERCISE

Decompose $\frac{10}{12}$.

TABLE OF ACTIVITIES

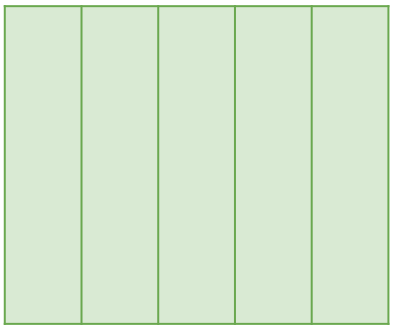
Ages 7-8 (Basic)		3rd Grade
1	Garden Lot	
2	Smaller Partitions	
3	Proper Propagation	
4	Gardening Day	
5	Free Gardening Tools	
Ages 8-9 (Advanced)		4th Grade
6	Non-Plant Activity	
7	Loam Soil Storage	
8	Organic Fertilizer: Whole and Parts	
9	William's Task	
10	Rake and Break	

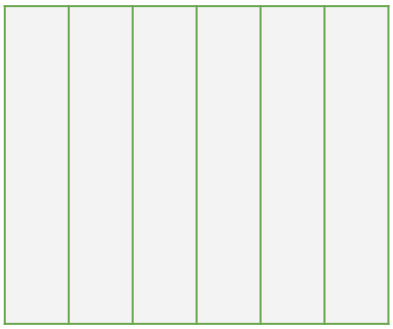
GARDEN LOT

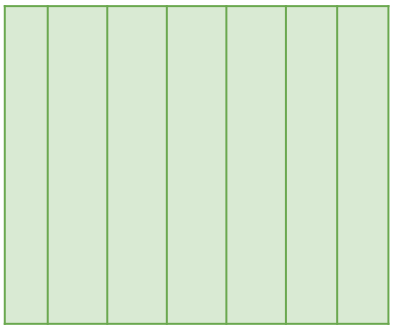
G3
Basic

William has a dilemma of splitting these garden lots into smaller ones. Help him ecompose it. Draw the two smaller fractions.

1.

2. 

3. 

4. 

SMALLER PARTITIONS

G3 Basic

William is trying to allocate the remaining fertilizer for his plants properly. Help him break down the kg of fertilizer into 3 parts.

1. Decompose $\frac{3}{3}$.

2. Decompose $\frac{4}{4}$.

3. Decompose $\frac{7}{7}$.

4. Decompose $\frac{9}{9}$.

5. Decompose $\frac{10}{10}$.

PROPER PROPAGATION

G3 Basic

Help William decide on which plant was properly propagated by checking if the following math sentences are correct. Check the box if it is, otherwise put an 'x'.

☐ 1) $\frac{8}{8} = \frac{3}{8} + \frac{5}{8}$

☐ 2) $\frac{5}{9} = \frac{6}{9} + \frac{3}{9}$

☐ 3) $\frac{5}{6} = \frac{3}{9} + \frac{2}{9}$

☐ 4) $\frac{5}{6} = \frac{3}{6} + \frac{2}{6}$

☐ 5) $\frac{9}{10} = \frac{1}{5} + \frac{8}{5}$

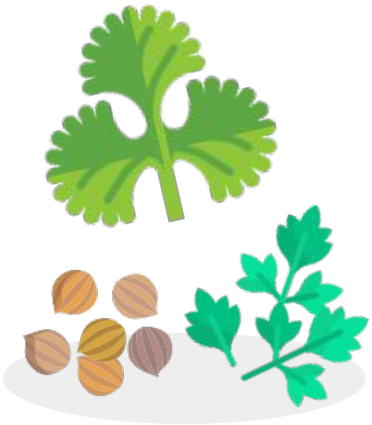
☐ 6) $\frac{2}{2} = \frac{1}{2} + \frac{1}{2}$

GARDENING DAY

G3
Basic

Today is gardening day for William! He will transfer these little plants into their new home! Help William complete the task.

1. William will transfer ¾ of his entire coriander plants in a larger pot. If he will do it in three batches, how many partitions (in unit fractions) can he make?



2. William is expecting to receive his gardening items to be delivered today. He was notified that delivery van is 5/3 km away from his house. How will you decompose 5/3 into two smaller parts?

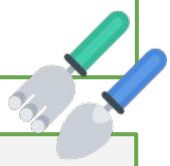
3. William has to water four- fifths of his plants today. If he will do it in three batches, list down below the smaller fractions that can create four - fifths.

FREE GARDENING TOOLS

G3
Basic

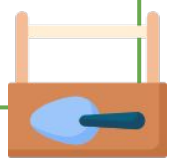
William received a special offer from his favorite gardening shop. Since the shop is celebrating their anniversary, they are giving away free gardening tools! Help William get this special offer by answering the following questions correctly.

1. Break down 7/10 into four smaller fractions.



2. Split up 5/8 into three smaller fractions.

3. Decompose 7/10 into five smaller fractions.



4. Break down 4/12 into unit fractions.

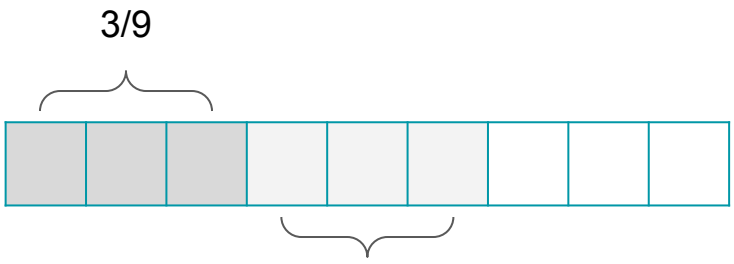
5. Decompose 10/10 into six smaller fractions.

NON-PLANT ACTIVITY

G4 Advanced

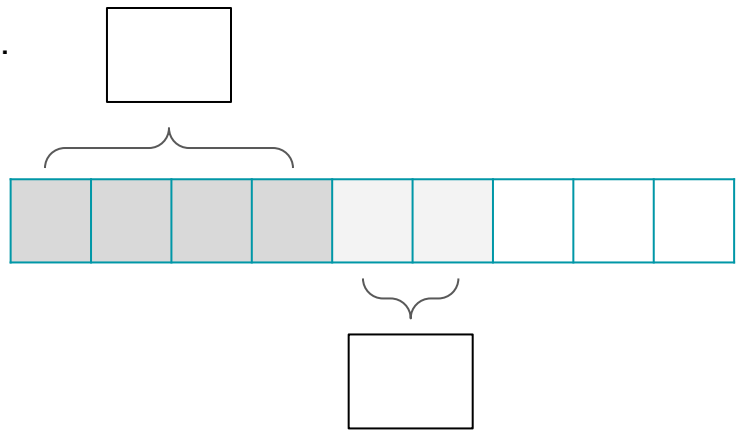
William is tired because he did a lot of gardening chores today. He wants to do other things and found a math worksheet on the table. Create a math sentence about the fraction that was decomposed below. The first one is done for you.

Example:

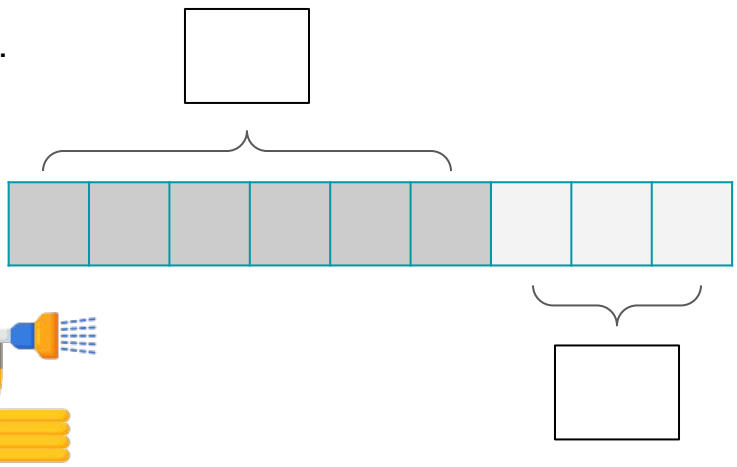


$$\frac{6}{9} = \frac{3}{9} + \frac{3}{9}$$

1.



2.



LOAM SOIL STORAGE

G4 Advanced

The following are the amount of parts left of William's loam soil storage. Help William break them down into four parts.

1.) $\frac{5}{4} = ?$

2.) $\frac{8}{6} = ?$

3.) $\frac{12}{10} = ?$

4.) $\frac{15}{11} = ?$

5.) $\frac{9}{3} = ?$

6.) $\frac{7}{2} = ?$

ORGANIC FERTILIZER: WHOLE AND PARTS

G4 Advanced

William would like to decompose these sacks of organic fertilizer into set of whole and parts. Note: all fractions must be written in words. The first one is done for you.

Split up four - thirds.

1. Three - thirds and one - third.

Break down nine - fourths.

2.

Decompose seven - halves.

3.

Divide five - thirds.

4.

WILLIAM'S TASK

G4 Advanced

William is assigned to another non-plant task. Can you help him complete the task below? The first one is done for you.

	Fraction form	In words					
1.	$\frac{6}{4}$	Six - fourths.	=		+		
2.			=		+		
3.			=		+		
4.			=		+		
5.			=		+		
6.			=		+		

RAKE AND BREAK

G4 Advanced

After a long period of using the rake to plow the land, William would like to take a break by answering some math problems. Decompose the following fractions. The first one is done for you.

$\frac{8}{10}$ = $\frac{4}{10}$ + $\frac{4}{10}$

Like fractions

OR

$\frac{8}{10}$ = $\frac{3}{10}$ + $\frac{1}{2}$

Unlike fractions

$\frac{11}{12}$ = ___ + ___

OR

$\frac{11}{12}$ = ___ + ___

$\frac{15}{20}$ = ___ + ___

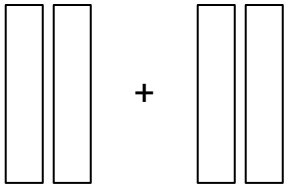
OR

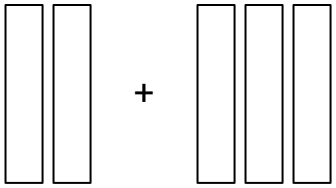
$\frac{15}{20}$ = ___ + ___

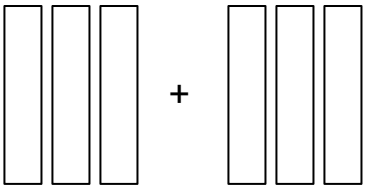
ANSWER GUIDE

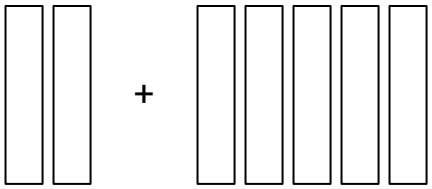
Activity 1

Possible options.

1.  +

2.  +

3.  +

4.  +

Activity 2

1. 3/3 = ⅓ + ⅓ + ⅓
2. 4/4 = ¼ + ¼ + 2/4
3. 7/7 = 2/7 + 3/7 + 2/7
4. 9/9 = 1/9 + 3/9 + 5/9
5. 10/10 = 3/10 + 2/10 + 5/10

Activity 3

1. ✓ 2. ✓ 3. X

4. ✓ 5. X 6. ✓

Activity 4

1. ¾ = ¼ + ¼ + ¼
2. 5/3 = 3/3 + ⅔
3. ⅘ = ⅕ + ⅖ + ⅕

Activity 5

1. 7/10 = 1/10 + 3/10 + 2/10 + 1/10
2. ⅝ = ⅛ + 2/8 + 2/8
3. 7/10 + 1/10 + 1/10 + 2/10 + 1/10 + 2/10
4. 4/12 = 1/12 + 1/12 + 1/12 + 1/12
5. 10/10 = 2/10 + 2/10 + 3/10 + 1/10 + 1/10 + 1/10

ANSWER GUIDE

Activity 6

1. 4/9 , 2/9 = 6/9
2. 6/9 + 3/9 = 9/9

Activity 8

2. Eight-fourths and one-fourth
3. Six-halves and one-half
4. Four-thirds and one-third

Activity 9

2. 9/6 , nine-sixths
3. 12/6, twelve-sixths
4. 6/6, six-sixths
5. 13/8, thirteen-eighths
6. 7/4 , seven-fourths

Activity 7

1. 5/4 = 2/4 + ¼ + ¼ + ¼
2. 8/6 = 2/6 + 2/6 + 2/6 + 2/6
3. 12/10 = 3/10 + 3/10 + 3/10 + 3/10
4. 15/11 = 3/11 + 2/11 + 5/11 + 5/11
5. 9/3 = ⅔ + ⅔ + ⅔ + 3/3
6. 7/2 = ½ + ½ + 4/2 + ½

Activity 10

11/12 = 9/12 + 2/12
11/12 = ¾ + ⅙
15/20 = 8/20 + 7/20
15/20 = ⅖ + 7/20

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