

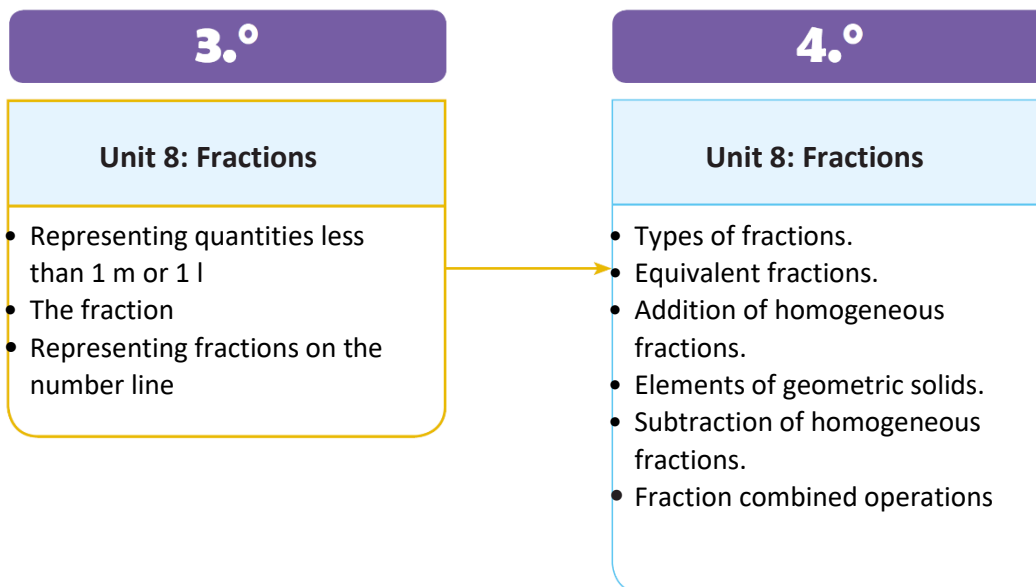
Unit 8

Fractions

1 Unit Competencies

- Assign a fraction to quantities less than 1, represent them graphically, identifying the numerator and denominator when interpreting numerical information from the environment.
- Read fractions and represent them graphically and on the number line, recognizing its usefulness to express quantities representing an equitable division to solve problems of everyday life.

2 Sequence and Scope



3 Unit Plan

Lesson	Class	Title
1 Representing quantities less than 1 m or 1 l	1	The Meter (fractions)
	2	Fractions less than 1

2 The fraction	1	Fraction numerator and denominator
	2	Representing fractions
	3	Representing unit fractions
	4	Fraction on the number line

3 Representing fractions on the number line.	1	Location of fractions on the number line
	2	Comparing fractions with the same denominator
	3	Practice what you learn

	1	Unit assessment
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Total Classes
+ unit assessment

9

4 Key Aspects of Each Lesson

Lesson 1

Representing quantities less than 1 m or 1 l (Two Classes)

This lesson discusses how to represent one or more equal parts into which a unit has been divided and how they are read and states that the numbers representing these parts of the unit (in this case, liter or meter) are called fractions.

During the development of the lesson:

- Problems are posed to students to experience the need to represent quantities minor than the unit and intuitively introduce fractions.
- Se trabaja con dos unidades estándar, el metro y el litro; las cuales fueron estudiadas en la unidad 7 para facilitar la comprensión de las fracciones.
- Fractions are interpreted as representing a portion of the standard unit, which makes it easier to understand the location of fractions on the number line
- Unit fractions are referenced for performing fraction comparisons in Lesson 3. A unit fraction is one whose numerator is 1, for example: $\frac{1}{2}$, $\frac{1}{3}$, Etc.

Lesson 2

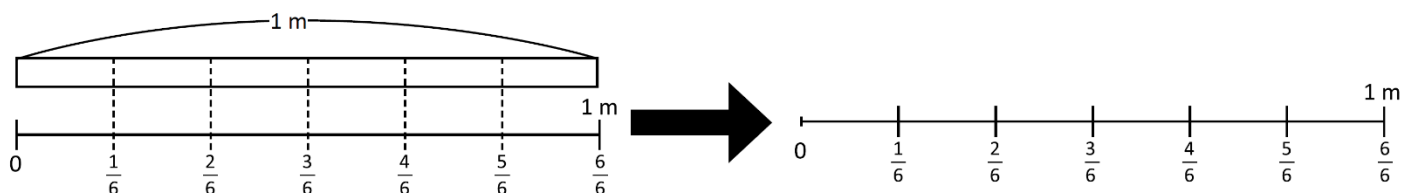
The Fraction (Four Classes)

This lesson presents the student with the interpretation of a fraction as the number of parts taken from the total equal parts into which the unit has been divided (meter or liter); at the same time, emphasis on identifying how many times a unit fraction fits in a fraction with the same denominator, and then how many times a unit fraction suits in a meter or a liter, and thus be able to establish the equivalence between a fraction that has the same numerator and denominator with 1 m or 1 l.

Lesson 3

Representing Fractions on the Number Line (Three Classes)

We have worked from first grade on locating figures on the number line and emphasizing that the space between the marks must be equal, that is, the same scale. Although, in previous levels, it has been learned to compare numbers given their location on the line. In this lesson, we expand the positioning on the number line and compare fractions. In previous units, we exercised the representation of fractions of a meter, facilitating the positioning of these on the number line transitioning from representing a bar that indicates 1m to use a line that goes from 0 to 1 m.



Lesson

1

Representing quantities less than 1 m or 1 l

1.1 The meter (fractions)

Analyze

- 1 In the Arts class, Carmen folds in 4 equal parts, a piece of cardboard of 1 m. How can you express the measurement of each part?

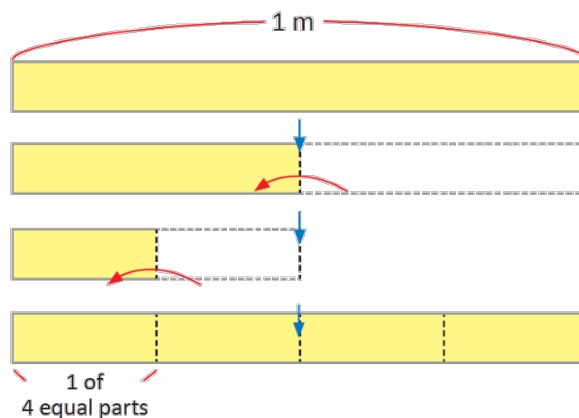
Solution

2



Carmen

I fold 1 m. of cardboard into 4 equal parts.



Each one of the parts is formed by folding the meter is written "1" / "4" m, and it reads as: "a quarter of a meter."

A: $\frac{1}{4}$ m

Understanding

3

When 1 m is divided into equal parts

Each part is written as $\frac{1}{\text{orange square}}$ m.

It reads as:

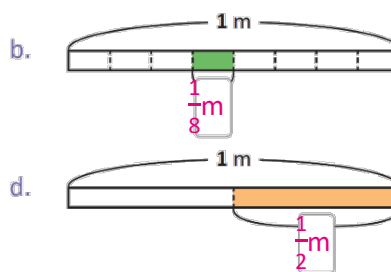
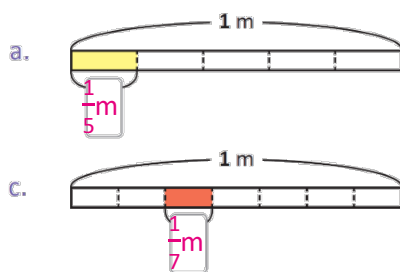
$\frac{1}{2}$ → One-half	$\frac{1}{7}$ → One-seventh
$\frac{1}{3}$ → One-third	$\frac{1}{8}$ → One-eighth
$\frac{1}{4}$ → One-fourth	$\frac{1}{9}$ → One-ninth
$\frac{1}{5}$ → One-fifth	$\frac{1}{10}$ → One-tenth
$\frac{1}{6}$ → One-sixth	



Solve

4

1. Please, write how many meters the shaded area represents and how it is read.



Notice into how many parts the meter has been divided.



2. Write the length of each part of 1m by dividing it into:

- a. Nine equal parts $\frac{1}{9}$ m b. Six equal parts $\frac{1}{6}$ m c. Ten equal parts. $\frac{1}{10}$ m

Achievement Indicator:

1. Write the fraction representing one of the equal parts into which a unit of length or capacity is divided.

Objective: Represent a part of a unit equally partitioned.

Key Points:

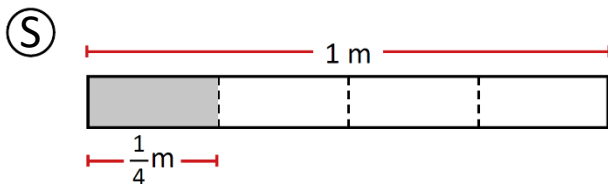
- 1 In the math problem the expectation from the student is to:
 1. Experience the need to represent quantities less than 1 m.
 2. Take a piece of ribbon one meter long, divide it into four equal parts by folding it; then find the appropriate size of each piece.
 3. Identify one of the four parts as a quarter of a meter, represent it as one (1) over four (4) -number of folds-, and read it as "a quarter of a meter."
- 2 Emphasize it does not matter the position in the meter of the part chosen; all of the pieces will always be the same quantity.
- 3 Read together with the classroom the writing and reading of "one part" of the meter divided into two, three..., nine, or ten equal parts. Indicate that only $\frac{1}{2}$ (1 out of 2) of meter reads "half a meter" and not "a half meter."
- 4 Students do not need to draw the ribbons in their notebook; they can complete them directly in their Textbook.

Materials: Two ribbons of paper or cardboard are placed on the board once the first item's analysis is confirmed. Then, the first part or section of the ribbon used is painted to complete the verification of the first item, as shown in the blackboard plan.

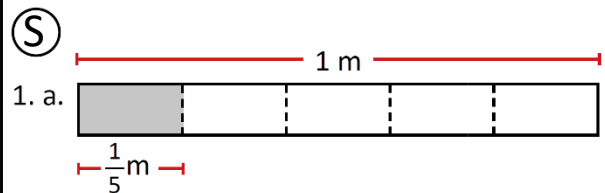
Notes:

Date:**Class: 1.1**

- (A) Fold in the paper or cardboard into four (4) equal pieces, a strip of 1m. What is the measurement of each piece?



A: $\frac{1}{4}m$



1. a.

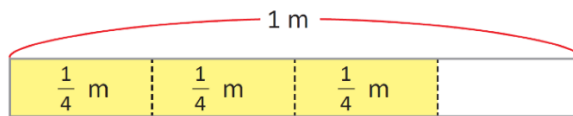
R: $\frac{1}{5}m$

Homework: Page 150

1.2 Fractions less than 1 (Proper fractions)

Analyze

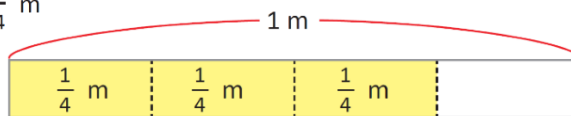
- 1 From the 1m piece of cardboard folded into four equal parts, Carmen takes three of those parts. How many times does $\frac{1}{4}$ m?



Solution



There are three times $\frac{1}{4}$ m



Understanding

- 2 The length of three times $\frac{1}{4}$ m is written $\frac{3}{4}$ m and it is read as: "Three-quarters of a meter".
The numbers such as $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{3}$, are called **fractions**.

The numbers 1,2,3, ..., Etc. are called natural numbers.



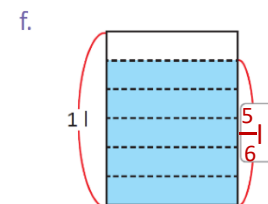
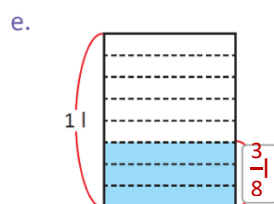
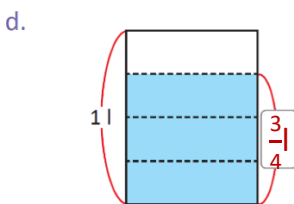
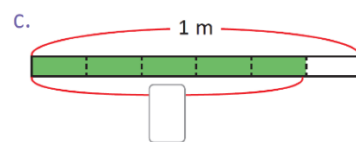
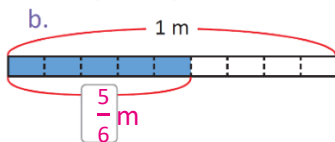
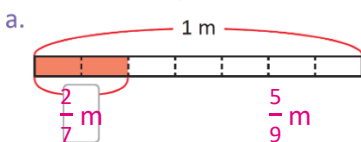
To write a fraction, $\frac{\triangle}{\square}$ it $\left\{ \begin{array}{l} \triangle \\ \square \end{array} \right.$ is \square equal parts

To read a fraction; first, read the number on top and then the bottom number as learned in the previous lesson.

For example; $\frac{2}{3}$ m reads two-thirds of a meter, $\frac{4}{7}$ m four-sevenths of a meter, Etc.

Solve

- 3 1. Write how many meters or liters the shaded part represents.



2. Read the following fractions:

- a. $\frac{2}{3}$ m **Two-thirds** of a meter b. $\frac{4}{5}$ m **Four-fifths** of a meter c. $\frac{5}{6}$ m **Five-sixths** of a meter d. $\frac{2}{7}$ m **Two-sevenths** of a meter e. $\frac{5}{7}$ m **Five-sevenths** of a meter
- f. $\frac{3}{8}$ m **Three-eighths** of a meter g. $\frac{7}{8}$ m **Seven-eighths** of a meter h. $\frac{4}{9}$ m **Four-ninths** of a meter i. $\frac{9}{10}$ m **Nine-tenths** of a meter j. $\frac{3}{4}$ m **Three-fourths** of a meter

Achievement Indicator:

1.2 Write the fraction corresponding to the graphical representation of length or capacity measure.

Objective: Add the term fraction and represent a proper fraction, when you take more than one of the parts into which the unit has been divided; using the graphic support of the meter or liter.

Key Points:

1 It is desirable the student:

1. Write a proper fraction by counting the number of fractions within the unit fraction, matching the parts of the fraction writing.
2. Determine the reading of the fraction.
3. Identifying the representation of a meter portion, and understand it as: "The parts obtained from the number of equal parts into which it has been divided."

2 This section is aimed at:

1. Give formal fraction names to the numbers representing smaller portions than the unit.
2. Represent the fraction as so many parts taken from the total of equal parts in which the unit is divided.
3. Show the reading of fractions minor than the unit and with a denominator less than or equal to 10; for this, we must remember the lesson of the previous class on the denominator, for example, $\frac{3}{7}$ reads: "three-sevenths."

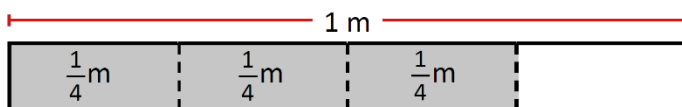
- 3
1. Instruct students to observe the portion presented and write it down in the notebook, remembering to place the corresponding unit of measurement.
 2. It is not necessary to write the fractions in the notebook, only read them.

Materials: Two ribbons of paper or cardboard are placed on the board once the first item's formulation of the analysis and the solution verification is confirmed for the first item. On the strip used for the formulation and analysis, paint the first three (3) portions of the ribbon used in the Analyze approach. At the same time, paint the first two (2) parts of the ribbon corresponding to the first item, as shown in the blackboard plan.

Date:

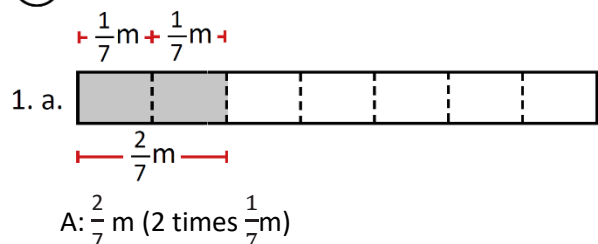
Class: 1.2

(A) From a piece of cardboard folded into 4 equal parts, 3 are taken. How many times does $\frac{1}{4}$ m fit?



(S) A: $\frac{1}{4}$ m fit 3 times.

(S)

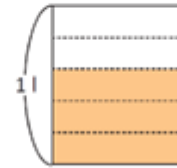


Homework: Page 151

2.1 Fraction numerator and denominator

Analyze

How much of the liter represents three of five equal parts, in which the liter was divided? Please write it down as a fraction and explain what the top and bottom numbers represent.



Solution

The liter is divided into five equal parts and three are taken



$$\frac{3}{5} \text{ l}$$

$\frac{3}{5}$ l It is read as: "Three-fifths of a liter"



The top value means the number of parts taken.

The bottom value means the number of equal parts into which the liter was divided.

Understanding

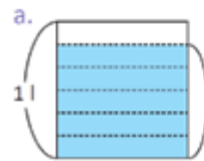
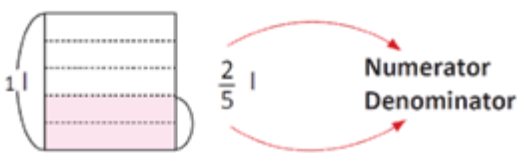
- The top and bottom numbers of the fractions have their names:

$\frac{3}{5}$	→	Numerator	Indicates how many parts are taken from the divided unit.
$\frac{3}{5}$	→	Denominator	Indicates how many parts the unit was divided.

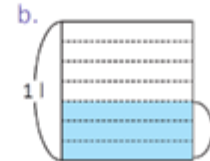
Solution

- Write the liters represented. Write what the numerator and denominator are.

Example:



$\frac{5}{6}$ l → Numerator
→ Denominator



$\frac{3}{7}$ l → Numerator
→ Denominator

- Write the following fractions:
 - Denominator is 10 and numerator is 3. $\frac{3}{10}$
 - Denominator is 4 y numerator is 1. $\frac{1}{4}$

- Read the following fractions:

a. $\frac{1}{2}$ l	b. $\frac{3}{4}$ l	c. $\frac{4}{5}$ l	d. $\frac{1}{6}$ l	e. $\frac{6}{7}$ l	f. $\frac{5}{8}$ l	g. $\frac{8}{9}$ l	h. $\frac{9}{10}$ l
Half a liter	Three-fourth of a liter	Four-fifths of a liter	One-sixth of a liter	Six-sevenths of a liter	Five-eighths of a liter	Eight-ninths of a liter	Nine-tenths of a liter

★Self-challenge

- Write the following fractions:
- | | | | |
|--------------------------------|-------------------------------|------------------------------|---------------------------------|
| a. Two-thirds $\frac{2}{3}$ | b. Two-fifths $\frac{2}{5}$ | c. Five-sixths $\frac{5}{6}$ | d. Four-sevenths $\frac{4}{7}$ |
| e. Three-eighths $\frac{3}{8}$ | f. Seven-ninths $\frac{7}{9}$ | g. One-tenths $\frac{1}{10}$ | h. Three-quarters $\frac{3}{4}$ |

Achievement Indicator:

- 2.1 Write the proper fraction corresponding to the graphical representation of a measure of length or capacity divided into at most ten (10) equal parts.

Objective: Identify the parts into which the unit has been divided; the denominator and the taken portions as the numerator. This unit only works with denominators up to 10, and when the numerator is minor than the denominator (proper fractions).

Key Points:

- 1 Instruct students to view the illustration in their Textbook.
In previous classes, fractions have been written by placing first the number of parts taken over the number of equal parts in which the unit has been divided. As per this fact, the name of each of the parts is presented as numerator and denominator. Emphasize the number of parts taken from the total is called the numerator and the total parts denominator.
- 2 In 1. and 2., if the students exhibit some difficulties, emphasize the placement of the numerator first. The denominator representing the number of parts taken from the unit is placed second.
In 3. instruct the students to quietly read the fraction without writing the wording in the notebook, only write the fraction indicated in each statement.

Materials: Make a square of paper or cardboard to represent the liter to verify the first item, as shown in the slate plan.

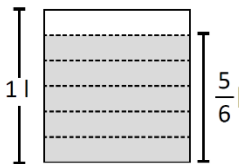
Notes:

Date:**Class: 2.1**

(A) What quantity of a liter represents three (3) parts of five (5) equal parts, into which 1l has been divided?

(S) Each part is equivalent to $\frac{1}{5}$ l
If three(3) are taken then is $\frac{3}{5}$ l

- The upper number means the parts taken.
- The number below means the equal parts into which 1 l has been divided.

(S) 1. a. 

R: $\frac{5}{6}$ l → Numerator
→ Denominator

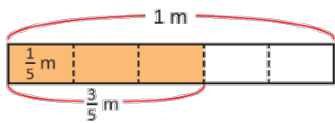
Homework: Page 152

2.2 Representing Fractions

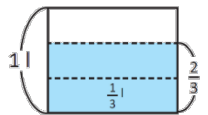
1

Analyze

a. How many times does $\frac{1}{5}$ m fit into $\frac{3}{5}$ m?



b. How many times does $\frac{1}{3}$ l fit into $\frac{2}{3}$ l?

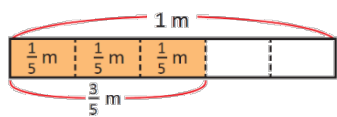


Solution

a.



Ana



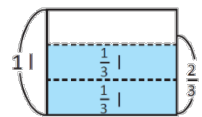
Three times $\frac{1}{5}$ m is $\frac{3}{5}$ m

A: Three times

b.



Anthony



Two times $\frac{1}{3}$ l is $\frac{2}{3}$ l

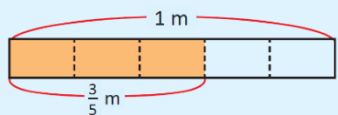
A: Two times.

Understanding

2

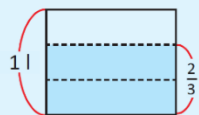
If you there are \triangle times \square it forms \triangle

Examples: If there are $\triangle 3$ times $\square \frac{1}{5}$ m it forms $\triangle \frac{3}{5}$ m



In $\frac{3}{5}$ m it fits three times $\frac{1}{5}$ m

If there are $\triangle 2$ times $\square \frac{1}{3}$ l it forms $\triangle \frac{2}{3}$ l



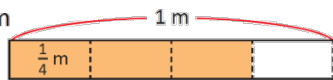
In $\frac{2}{3}$ l it fits two times $\frac{1}{3}$ l

Solve

3

1. Write how many times it fits:

a. $\frac{1}{4}$ m into $\frac{3}{4}$ m



A: Three (3) times

c. $\frac{1}{9}$ m into $\frac{8}{9}$ m

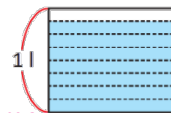
A: Eight (8) times

2. Write the fraction that forms:

a. Three times $\frac{1}{5}$ m **A:** $\frac{3}{5}$ m

c. Two times $\frac{1}{7}$ **A:** $\frac{2}{7}$ l

b. $\frac{1}{8}$ l into $\frac{7}{8}$ l



A: Seven (7) times

d. $\frac{1}{6}$ l into $\frac{5}{6}$ l

A: Five (5) times

b. Four times $\frac{1}{7}$ m **A:** $\frac{4}{7}$ m

d. Seven times $\frac{1}{10}$ l **A:** $\frac{7}{10}$ l

Achievement Indicator:

2.2 Determine how many times a unit fraction fits into a proper fraction with the same denominator.

Objective: Consolidate the understanding of the meaning of a fraction as the times you have a unit fraction.

Key Points:

- Instruct students to look at the representations of the meter and liter in their textbook.

Applying the fact that $\frac{3}{4}$ is three times $\frac{1}{4}$ (seen in class 1.2) and based on the graphic representation given in the Analyze, the student must determine:

 - a. $\frac{3}{5}$ is formed by three times $\frac{1}{5}$, then $\frac{1}{5}$ fits three times in $\frac{3}{5}$.
 - b. $\frac{2}{3}$ is formed by two times $\frac{1}{3}$, then $\frac{1}{3}$ fits two times in $\frac{2}{3}$.

It is important to note that all the parts from the divided unit represent the same quantity.
- Insist that every fraction can be expressed as many times the unit fraction with the same denominator. To be able to understand the fraction as a representation of a quantity, it is essential to understand that by joining three pieces of $\frac{1}{5}$ m, we now have one part of $\frac{3}{5}$ m. This analysis is similar to joining three pieces of 1 m that, when joined, form 1 piece of 3 m.
- The graphical representation shown in items 1a, and 1b; is an auxiliary to solve the problem. On the other hand, in items 1c, and 1d. A higher level of abstraction is required to solve the assignment without graphic representation by relating the numerator to the number of times the unit fraction is present.

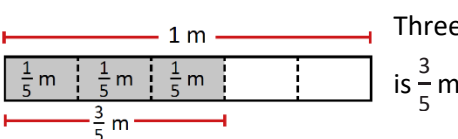
Materials: Elaborate a ribbon representing the meter and liter on a piece of paper or cardboard and verify the solution on the board. See the whiteboard planning for an example of the elaboration of the materials.

Date:

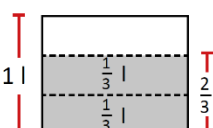
Class: 2.2

(A) a) How many times does $\frac{1}{5}$ m fit into $\frac{3}{5}$ m?

b) How many times does $\frac{1}{3}$ l fit into $\frac{2}{3}$ l?

(S) a.  Three times $\frac{1}{5}$ m is $\frac{3}{5}$ m

A: Three (3) times.

b.  Two (2) times $\frac{1}{3}$ l fit $\frac{2}{3}$ l

A: Two (2) times.

(S) 1. a. Three times (3) $\frac{1}{5}$ m equals $\frac{3}{5}$ m

A: Three (3) times.

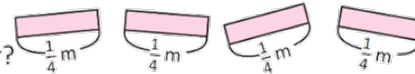
Homework: Page 153

2.3 Representing unit fractions

1 Analyze

Mary has 4 pieces of tape, and each one measures $\frac{1}{4}$ m

How many meters does it have when putting the pieces together?



Solution

The denominator of $\frac{1}{4}$ m indicates that the meter was divided into 4 parts.

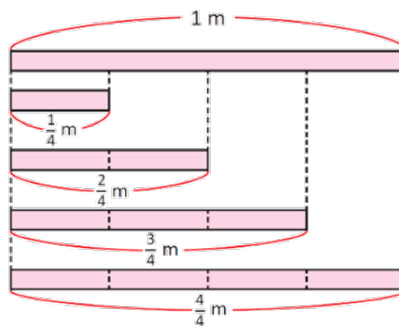


One time $\frac{1}{4}$ m is $\frac{1}{4}$ m

Two times $\frac{1}{4}$ m is $\frac{2}{4}$ m

Three times $\frac{1}{4}$ m is $\frac{3}{4}$ m

Four times $\frac{1}{4}$ m is $\frac{4}{4}$ m



A: $\frac{4}{4}$ m is equivalent to 1 m.

Understanding

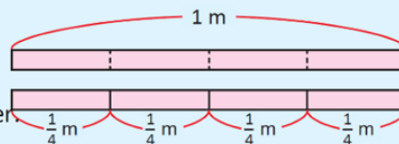
If the numerator and denominator are equal, the fraction equals the entire unit (1)

Example:

1 m was divided into 4 equal parts.

All the parts were taken and put together

Then $\frac{4}{4}$ m is equivalent to 1 m.



2

What if ?

What if there are 5 times $\frac{1}{5}$ l ?



$\frac{5}{5}$ l is formed which is equivalent to 1 l

3 Solve

1. Write how many meter or liters are formed if there are:

a. Five times $\frac{1}{5}$ m $\frac{5}{5}$ m = 1 m

b. Seven times $\frac{1}{7}$ m $\frac{7}{7}$ m = 1 m

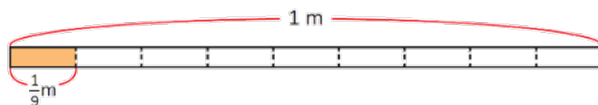
c. Six times en $\frac{1}{6}$ l $\frac{6}{6}$ l = 1 l

d. Three times $\frac{1}{3}$ l $\frac{3}{3}$ l = 1 l

2. Write how many time fits into:

a. $\frac{1}{9}$ m into $\frac{9}{9}$ m A: Nine (9) times

b. $\frac{1}{8}$ l into $\frac{8}{8}$ l A: Eight (8) times



c. $\frac{1}{7}$ m into $\frac{7}{7}$ m A: Seven (7) times

d. $\frac{1}{3}$ l into $\frac{3}{3}$ l A: Three (3) times

3. Answer:

a. How many times fits $\frac{1}{10}$ m into 1 m?
A: Ten (10) times

b. How many times fits $\frac{1}{4}$ l into 1 l?
A: Four (4) times

c. How many times fits $\frac{1}{7}$ m into 1 m?
A: Seven (7) times

d. How many times fits $\frac{1}{6}$ l into 1 l?
A: Six (6) times

Achievement Indicator:

2.3 Determines that having a unit fraction many times equal to its denominator is equivalent to a unit.

Objective: Write the unit as a fraction whose numerator and denominator are equal.

Key Points:

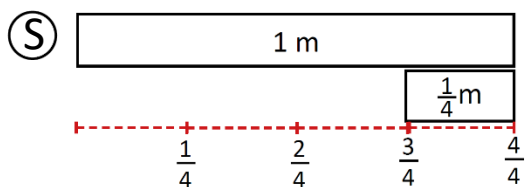
- 1 In the previous class (2.2) the student learned to relate a fraction and divide the unit fraction; applying this, the problem given in the analyze section must determine that 4 times $\frac{1}{4}$ m is 1m.
- 2 The Analyze and What if sections, determine that a fraction whose numerator and denominator are equal, represents a unit. The number of parts taken is equal to the number of parts into which the unit was divided
- 3 In this section it is essential to the following considerations:
 - In 1. Emphasize that if the numerator and denominator of a fraction are equal then it equals 1 m or 1 l depending on the case.
 - In 2. The first two statements show the graphic representation of the unit divided into equal parts, as a guide to visualize how many times the unit fraction fits in a fraction with the same numerator and denominator.
 - In 3. Write how many times the unit fraction fits in a meter or a liter.

Materials: Make on paper or cardboard the representations of the meter and $\frac{1}{4}$ m like the ones on the whiteboard plan.

Methodological advice: Place the piece of ribbon of $\frac{1}{4}$ m under the 1 m ribbon, mark $\frac{1}{4}$ m, then move it forward and mark $\frac{2}{4}$ m, and so on until you reach $\frac{4}{4}$ m. Stress that $\frac{4}{4}$ m coincides at the end of the 1m, ribbon; then it can be stated that joining four pieces of $\frac{1}{4}$ m each is equivalent to having a 1m ribbon.

Date:**Class: 2.3**

- (A) How many meters do you have when gathering 4 pieces of $\frac{1}{4}$ m?



A: Four (4) times $\frac{1}{4}$ m equals $\frac{4}{4}$ m and it is equivalent to 1 m.

- (S) 1. a. Five (5) times $\frac{1}{5}$ m equals $\frac{5}{5}$ m, then you have 1 m.

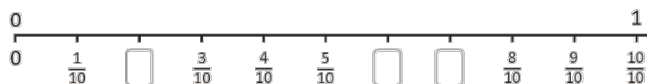
A: 1 m

Homework: Page, 154

2.4 Fractions on the number line

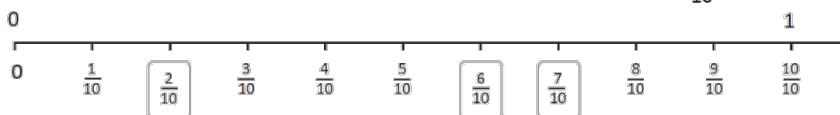
Analyze

- 1 Look at the number line and answer:
 - a. Into how many equal parts are they divided?
 - b. What is the separation between each mark?
 - c. Write the missing fractions.



Solution

- a. They are divided into ten equal parts.
- b. $\frac{1}{10}$
- c. To locate a fraction, count the marks after 0 until reaching the location on the number line; Example.: if there are two marks, it is $\frac{2}{10}$

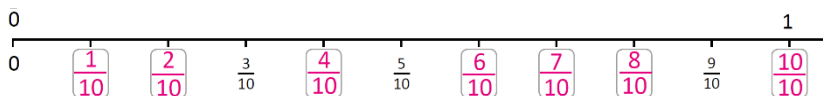


Understanding

- 2 Fractions can be represented on the number line.

Solve

1. Write the missing fractions on the number line.



2. Respond by looking at the number line:

- a. How many times $\frac{1}{10}$ fit into $\frac{3}{10}$? **A: Three (3) times**
- b. How many times $\frac{1}{10}$ fit into $\frac{8}{10}$? **A: Eight (8) times**
- c. How many times $\frac{1}{10}$ fit into 1? **A: Ten (10) times**

- 3
 - d. What fraction is formed seven times $\frac{1}{10}$? $\frac{7}{10}$
 - e. What number is formed ten times $\frac{1}{10}$? $\frac{10}{10} = 1$

Achievement Indicator:

2.4 Locate in the number line a proper fraction with denominator 10.

Objective: Representing fractions with denominator ten (10) on the number line; based on the number of times the fraction is in the unit fractioned to be represented on the line.

Key Points:

- 1 Instruct students to look at the number line in their Textbook.
The student must:
 1. Observe the number of marks and relate them to the parts into which a unit has been divided.
 2. Establish that the space between two marks indicates $\frac{1}{10}$, and from there locate all fractions until you complete the unit.
- 2 You can refer to the solution in the Analyze section and explain how to find fractions, by looking the number of marks, without considering the zero mark.
- 3 In d. and e. it is expected that given the number of times you have the fraction will be observed on the line and the number is determined. In 1. Students do not need to draw the number line.

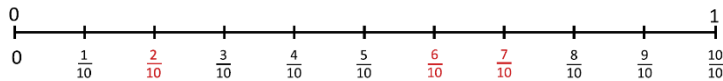
Notes:

Date:

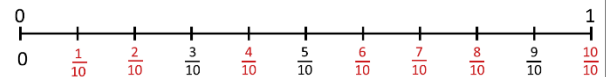
Class: 2.4

- A**
- a. Into how many equal parts is divided?
 - b. What is the separation between each mark?
 - c. Write the missing fractions.

- S**
- a. In ten (10) equal parts.
 - b. $\frac{1}{10}$
 - c.



- S** 1.



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Lesson

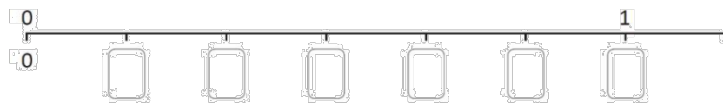
3

Representing fractions on the number line

3.1 Fractions location on the number line

1 Analyze

- Find out how many parts one (1) was divided on the following line.
- Write the corresponding fraction in each box.

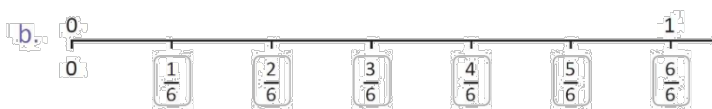


Note: The unit is not always divided into ten (10) equal parts.



Solution

- One (1) has been divided into six (6) equal parts.



Be careful; in the case of fractions, the unit is not always divided into ten (10) equal parts.



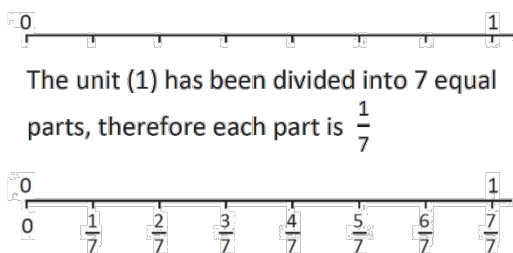
Understanding

To determine the fraction according to its location on the number line, do the following:

- Determine how many equal parts it has been divided from 0 to 1 because that quantity is the denominator.
- Count the number of marks after 0 to the location of the fraction, and that quantity is the numerator.

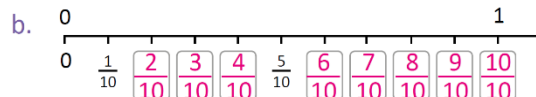
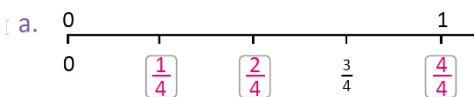
What if ?

What fractions are between 0 and 1?

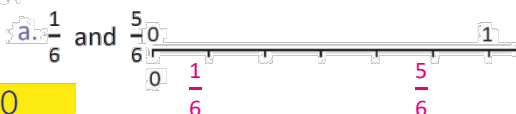


Solve

- Complete the number line by locating the missing fractions:



- Place the indicated fractions on the number line:



Achievement Indicator:

3.1 Place on the number line a proper fraction with a denominator less than or equal to 10.

Objective: Represent the proper fractions with denominator less than or equal to 10 on the number line, from the number of times you have the unit fraction in the fraction to be represented on the line.

Key Points:

- 1 Instruct students to look the number line in their Textbook.
Stress about the order and location of the fractions, the first mark after 0 indicates that only one part of six, the second mark two parts of six have, and so on. In the previous class (2.4), the unit was represented as a fraction, so the last mark indicates 6 of 6 parts, that is, the entire unit (1 m).

Notes:

Date:**Class: 3.1**

- (A) a) Into how many parts was one (1) divided?
b) Write the missing fractions.

- (S) a. In six (6) equal parts.
b.



- (W) What fractions are there between 0 and 1?



- (S) 1. a.

**Homework:** Page 156

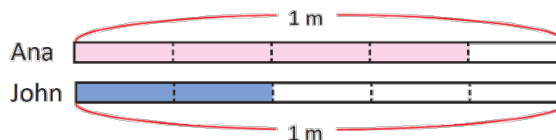
3.2 Comparing fractions with the same denominator

Analyze

- 1 Ana has $\frac{4}{5}$ m of the ribbon, and John has $\frac{2}{5}$ m

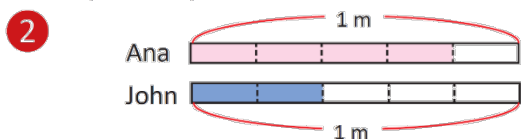
Who has the longest ribbon?

Compare $\frac{4}{5}$ m and $\frac{2}{5}$ m



Solution

Graphic comparison:



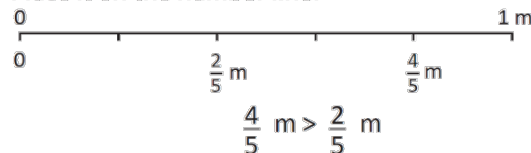
Ana has the longest ribbon.

$$\frac{4}{5} \text{ m} > \frac{2}{5} \text{ m}$$

I can also compare it by using the number line. On the number line, the quantity to the right is greater.



Place it on the number line:



Understanding

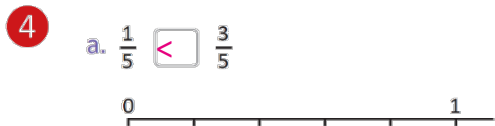
- 3 To compare fractions using the number line, the fraction to the right is greater.

Hint: While comparing fractions with the same denominator, the fraction with the highest value in the numerator is greater.

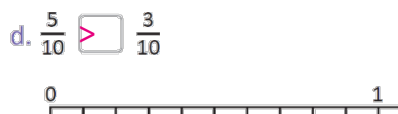
$$\frac{7}{10} > \frac{4}{10} \quad (7 > 4) \qquad \frac{4}{9} < \frac{8}{9} \quad (4 < 8)$$

Solve

Complete by placing the sign ">", "<" or "=" between the fractions, as appropriate:

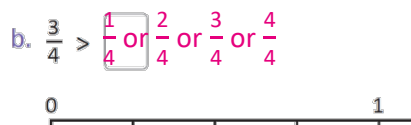


To respond, you can locate the fractions on the number line.



★Self-challenge

Complete, place a fraction with the same denominator as the given fraction that fulfills either "<" or ">" as follows:



Achievement Indicator:

3.2 Compare proper fractions with the same denominator, starting from their positions on the number line.

Objective: Compare fractions with the same denominator given their location on the number line.

Key Points:

- 1 Instruct students to view the ribbon illustrations in their textbook.
The students can compare the fractions by combining what they learned in unit 1 (comparison of natural numbers); and previous class (3.1) regarding the location of fractions on the line. In addition to using the symbols ">," "<" or "=" to establish the relationship between fractions.
- 2 Emphasize, the farthest fraction to the right is the largest and use the appropriate comparison symbol.
- 3 Emphasize the comparison of fractions could be made by looking at the numerators. It represents the number of times it was divided. The highest fraction means more equal parts have been taken from the unit.
- 4 Explain to the students to identify what the location of the fractions would be, and then apply the criteria observed to make the comparison between them. It is unnecessary to draw the graph in the notebook. It would take a long time; only write the fractions and the comparison symbol.

Materials: To confirm the solution of the Analyze section, elaborate ribbons by using paper or cardboard ribbons to make the representations (Similar to those on the plan).

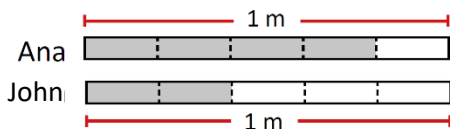
Notes:

Date:**Class: 3.1**

(A) Ana: $\frac{4}{5}$ m John: $\frac{2}{5}$ m

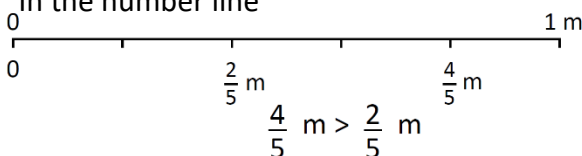
Who has the longest ribbon?

(S) Graphically



$$\frac{4}{5} \text{ m} > \frac{2}{5} \text{ m}$$

In the number line



A: Ana has the longest ribbon.

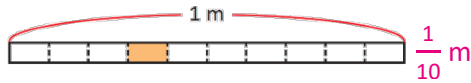
(S) a. $\frac{1}{5} \text{ m} < \frac{3}{5} \text{ m}$

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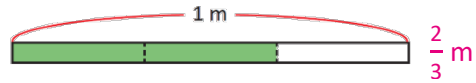
3.3 Practice what you learned

1. Write how many meters the shaded part represents.

a.

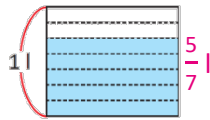


b.



2. Write how many liters the shaded part represents.

a.



b.



3. In the following fractions, into how many parts was the unit divided? How many parts were taken from the unit?

a. $\frac{3}{5}$ m

The unit was divided into 5 equal parts. 3 parts were taken.

b. $\frac{4}{5}$ m

The unit was divided into 5 equal parts. 4 parts were taken.

c. $\frac{2}{3}$ l

The unit was divided into 3 equal parts. 2 parts were taken.

d. $\frac{7}{10}$ l

The unit was divided into 10 equal parts. 7 parts were taken.

4. Fill in the number in the box.

a. Four times $\frac{1}{9}$ m is $\frac{4}{9}$ m

b. Five times $\frac{1}{8}$ l is $\frac{5}{8}$ l

c. Three times $\frac{1}{4}$ m is $\frac{3}{4}$ m

d. Two times $\frac{1}{3}$ l is $\frac{2}{3}$ l

e. Ten times $\frac{1}{10}$ m is $\frac{10}{10}$ m or 1 m

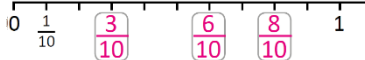
f. Six times $\frac{1}{6}$ l is $\frac{6}{6}$ l or 1 m

g. 7 times $\frac{1}{7}$ m is $\frac{7}{7}$ m

h. 5 times $\frac{1}{5}$ m is 1 m

5. Write the fractions requested:

a.



b.



6. Place the "<" or ">" between the fractions as appropriate.

a. $\frac{3}{8}$ < $\frac{7}{8}$



b. $\frac{2}{5}$ < $\frac{4}{5}$



You can use the number line to answer!



Achievement Indicator:

3.3 To complete items related to the writing, location, and comparison of fractions with denominator less than or equal to 10.

Problem Solving:

In cases 1, and 2. Observe the shaded parts and the parts in which the unit has been divided. It is essential to verify the students write the fractions correctly, otherwise remember the interpretation of a fraction, for example: $\frac{7}{9}$ is 7 of 9 equal parts.

Students don't have to make the graphic representation in their notebook; it is enough that they write on their textbook the fraction represented in each formulation. So, for example, it is necessary to check unit 3 of measurement in each response: $\frac{3}{4}$ m.

In No. 3, it is important to remind students what the numerator and denominator of a fraction indicate. Writing the sentence in their notebook is unnecessary; instead, they can do it directly in their textbook.

Problem No. 4 reminds the students that if the numerator and denominator in a fraction are equal, the represented value of the fraction can also be expressed with a unit (1 m or 1 l).

In No.5 Instruct students to write directly on the Textbook the fraction corresponding to each mark on the number line or to compare the numerator.