**DECIMAL FRACTIONS:**Ordering and comparing decimal fractions

**Activity 1**

Show the following numbers on the number line:

1. 0,6 (b) 1,2 (c) 1,85 (d) 2,3(e) 2,65 (f) 3,05 (g) 0,08

Solutions



**Activity 2**

Underline the bigger of the two numbers.

1. 2,399 and 2,60
2. 5,604 and 5,640
3. 0,111 and 0,087

Solutions

1. 2,399 and 2,60
2. 5,604 and 5,640
3. 0,111 and 0,087

**Activity**

1. Order the following numbers from smallest to biggest.

0,8 0,15 0,05 0,901 0,55 0,4 0,62 0,465 0,75

1. Replace the □ in the following statements by using ˂, ˃ or = to make each of them correct.

a) 8,08 □ 8,080 b) 8,080 □ 8,008

c) 10,012 □ 10,120

1. Write the next **five numbers** in the number sequence and show your number sequence on the **number line**.
2. 0,2; 0,4; 0,6; …; …; …; …; …
3. 0,25; 0,5; 0,75; …; …; …; …; …
4. Write each of the following as one number and rounded-off to TWO decimal places.
5. 2 + 0,05 + 0,007
6. 5 + 0,03 + 0,4 + 0,001

**Activity 2**

1. Write the value (in decimal fraction) and the place value of each of the underlined digits.
2. 2,345 b) 4, 678 c) 1,953 d) 564, 34
3. Write down the values of the points marked A to D using decimal fractions.

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**Activity**

Complete the following table by adding to or subtracting from the number given in the first column

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Number** | **Add****0,2** | **Add****0,02** | **Subtract** **0,1** | **Subtract** **0,01** |
|  10,12 |  |  |  |  |
|  9,05 |  |  |  |  |
|  125,321 |  |  |  |  |

**Activity 1**

Fill in the missing number:

1. 30,5 + = 30,9
2. 725,13 + = 725,45

5,203 - = 3,15

Calculate the following by using any method:

|  |
| --- |
| Example: 1 Example: 2 Example:30,4 + 0,5 0,4 1,2 + 3,4= $\frac{5}{10}\frac{4}{10}$+ 0,5 = (1+ 3) + (0,2+ 0,4)= $\frac{9}{10}$ 0,9 = 4 + 0,6= $0,9$ = 4,6 |

1. 324,12 + 10,63 =
2. 900, 562 + 0,007=
3. 422,01 – 422,08

0,938 - 0,643 =

**Activity** Complete the following multiplication table

|  |  |  |  |
| --- | --- | --- | --- |
|  | multiply by 1 | multiply by 10 | multiply by 100 |
| 5 |  |  |  |
| 5,3 |  |  |  |
| 0,5 |  |  |  |
| 3,75 |  |  |  |
| 45,5 |  |  |  |
| 0,2 |  |  |  |

a)When does multiplication make a number bigger?

b)What happens when a number is multiplied by a decimal number less than 1?

Formulate rules for multiplying by 1, 10, and 100 and decimal numbers less than 1.

**Activity 1**

Use the rules in the first activity to estimate the answers.

1. 0,3 × 2 0,3 × 0,2 0,15 × 10 0,015 × 100

**Activity 2**

Calculate the following.

1. 0,6 × 10 0,04 × 10 0,42 x 10 0,673 × 10

0,6 × 100 0,03 × 100 1,25 × 100 24,259 × 100

**Activity 3 (Individually)**

Complete the flow diagram.

R3.36

Multiply by 100

Round off to the nearest 100 rand

 ˭

**Activity**

1. Complete the following multiplication table.

|  |  |  |  |
| --- | --- | --- | --- |
|  | multiply by 3 | multiply by 5 | multiply by 10 |
| 3,12 |  |  |  |
| 0,5 |  |  |  |
| 3,72 |  |  |  |
| 15,25 |  |  |  |
| 0,2 |  |  |  |

 b) Estimate the answers to each of the following and then calculate:

 0,5 × 7 0,45× 5 15 × 0,15 0,451 × 4

 c)What does 6× 0,5 megabytes (MB) of data mean?

**Possible answer:**

1. × 0,5 megabytes (MB) of data means 6 groups of$\frac{1}{2}$

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

 d) What does 0,5 × 6 mean?

**Possible answer:**

$\frac{1}{2}$of 6 = $\frac{1}{2}$ × 6 = 3

**Activity 1**

Multiply the following decimal fractions and then verify your answers using a calculator.

1. 0,3 × 2 b) 0,03 × 2 c) 0,003 × 2

d) 0,123 × 5 e) 1, 503 × 3 f) 76,005 × 10

**Activity 2**

Multiply the following decimal fractions and then verify your answers using a calculator.

0, 12× 4 b) 3,85 × 7 c) 8 × 40,125

**Activity**

1. Complete the following flow diagram.

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 b) Mandla uses this method to multiply decimal fractions by decimal fraction:

0,35 × 0,5 = ( 35 ÷ 100) × (5 ÷ 10)

 = (35 × 5) ÷ (100 ×10)

 = 175 ÷ 1000

 =0,175

Is Mandla’s calculation correct? Provide an explanation for your answer.

**Activity 1**

Calculate the following using the method used by Mandla.

1. 0,43 × 0,3b)0,25 × 0,2 c)0,15 × 2,35d)0,97× 0,10

**Activity 2**

Calculate the following using any method.

1. 0,26 × 1,24 b)0,04 × 10,13 c)0,42 x 1,3 d) 2,67 × 10,5

**Activity 3**

Jessica needs 3,5m by 1,56m of material to make a wedding dress.

1. How many metres of the material does Jessica have to buy?

Round your answer to one decimal place.

If one metre (m) of the material costs R130,50, how much will Jessica pay for the material?

**Activity 1**

Calculate: 2,25 ÷ 5

Solution: 45

|  |  |
| --- | --- |
| 5 |  225-20 |

\_\_\_\_\_\_\_

25

 -25

**\_\_\_\_\_\_\_\_\_**

0

225 ÷ 5 = 45

2,25 ÷ 5 = 0,45 (The dividend has two decimal places, the answer
 must have two decimal places)

**Activity 2**

Worked out example:

9,3 ÷ 3

= ( 9 units + 3 tenths) ÷ 3

= ( 9 units ÷ 3) + (3tenths ÷3)

= 3units + 1tenths

=3,1

**Activity 3**

Calculate each of the following using any method and verify your answers by using a calculator.

1. 0,15 ÷ 5 b) 26,4 ÷ 2 c) 36,3 ÷ 3

**Activity 4**

Nancy buys 15kg of bananas for R99, 90. What is the cost of the bananas per kilogram?

**Activity**

Consider the following decimal fractions and answer the questions.

|  |
| --- |
| 1. 2,345 b) 4, 678 c) 1,953 d) 564, 34
 |

1. Write the value (in decimal fraction) and the place value of each of the underlined digits.
2. Round off the decimal fractions to ONE decimal place.

**Activity 1**

Write each of the following as one number and rounded-off to TWO decimal places.

1. 3 + 0,06 + 0,008
2. 7 + 0,02 + 0,5 + 0,001
3. 55,34 – 4,12
4. 0,95 – 0,005 – 0,002

**Activity 2**

Estimate the answers of the following and then calculate. Round off the answers to two decimal places.

1. 0,65 × 0,5
2. 9,42 ÷ 3

**Activity 3**

A super market sells milk at R 5, 95 per litre. How much will 8 litres of milk cost? (Estimate the answer then calculate)

**Activity 4**

Complete the following flow diagram. Round off the answer to two decimal places.



**Activity**

1. Paul buys 2,5kg of fruits at R48, 45 per kilogram, how much does she pay for the
fruits?

Solution: Estimation- 48,45 x 3,5 ≈ 50 x 3 ≈ 150

 The actual amount is: 48,45 x 2.5 = R121,125

 Paul pays R121,13

1. John works for 4, 30 hours and is paid R196, 50 for the shift. What is her hourly rate of pay?

 Estimation:  ≈ 40

 The actual amount is: 

 John is paid R45,70 per hour

**Activity 1**

1. A soccer field is 3, 75 m. If an athlete ran 5 times the distance of the soccer field. How many meters did the athlete run?
2. There is a clinic between a school and a house. The clinic is 1, 5 times the distance from the
 house. If the distance from the school is 3,326 km to the clinic, how far is the school from the house?

**Activity 2**

1. Dineo buys 0, 85m of steel chain. The steel chain costs R40 per metre. How much does Dineo pay for the steel chain?

**Activity**

1. Convert the common fractions to decimal fractions correct to 2 decimal places.
2. $\frac{1}{2}$ b) $\frac{3}{4}$
3. Convert decimal fractions to common fractions
4. 0,25 b) 12, 5
5. Express 50 hundredths as percentage.
6. What is the fraction of the darkened parts (cells) in rectangle below? Give your answer in fraction notation and decimal notation.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

1. What would be the percentages of the darkened parts (cells) in question 4 above?

**Activity**

1. Complete the following table.

|  |  |  |
| --- | --- | --- |
| **Common fraction** | **Decimal fraction** | **Percentage**  |
| 0,2 |  |  |
|  | 0,25 |  |
|  |  | 20% |
|  |  |  |
|  |  | 10,5% |

1. Write the following as decimal fractions and also express the answers in percentages.
2. 5 x $\frac{1}{100}$
3. 0,25 x 1,50
4. $\frac{45}{100}$ × $\frac{10}{100}$