SELECTION AND COMPUTATIONS*

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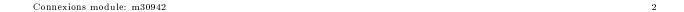
- 1 MATHEMATICS
- 2 Grade 5
- 3 ORDINARY AND DECIMAL FRACTIONS
- 4 Module 47
- **5 SELECTION AND COMPUTATIONS**
- **5.1 Activity 1:**
- 5.2 To calculate through selection and by using suitable computations [LO 1.8.3]
- 5.3 To describe observed relationships and rules in your own words [LO 2.2]
- 1. Look carefully at the following problems and explain to a friend what your approach would be in calculating the various answers.
 - e various answ $1.1 \frac{7}{8} \frac{3}{4}$ $1.2 \frac{1}{12} \frac{2}{3}$ $1.3 \frac{5}{6} \frac{7}{12}$ $1.4 2\frac{1}{2} 1\frac{9}{10}$ $1.5 3\frac{1}{5} 1\frac{9}{10}$ $1.6 4\frac{1}{4} 2\frac{7}{8}$

Now calculate the answers.

- 2. Check your answers with your friend.
- **5.4 Activity 2:**
- 5.5 To calculate through selection and by using suitable computations [LO 1.8.6]
- 5.6 To determine, through comparison and discussion, the equivalence and validity of different representations of the same problem [LO 2.6.2]
- 5.7 To describe observed relationships and rules in your own words [LO 2.2]
 - 1. Sometimes one can use a pie graph to represent fractions. A survey was done of the extramural activities of a Grade 5 class and the results were represented by using a pie graph. See whether you can "read" it, and then complete the table.

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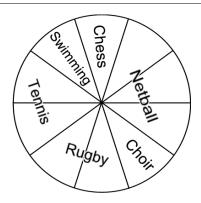


Figure 1

Activity	Netball	Tennis	Rugby	Choir	Chess	Swimming
Fraction						

Table 1

2. It is important for us to be able to interpret the pie graph, otherwise we will not be able to make meaningful deductions from it and solve the problems. Work through the following problem with a friend and find out how many methods can be used to solve it.

If there are 50 learners in the class, how many learners play netball?

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2.1 The question is \frac{3}{10} of 50
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$$\frac{1}{10}$$
 of $50 = 5$

$$\frac{\frac{10}{3}}{10}$$
 of 50 will be 15

 $\frac{1}{10}$ of 50 = 5 $\frac{3}{10}$ of 50 will be 15 2.2 I must calculate $\frac{3}{10}$ of 50. I find out what $\frac{1}{10}$ is by dividing 50 by 10.

$$50 \div 10 = 5$$

If one tenth is 5, then 3 tenths will be 3×5 . There are thus 15 pupils who play netball.

2.3 Girls =
$$\frac{3}{10}$$
 of 50
Thus: = $(50 \div 10) \times 3$

Thus:
$$= (50 \div 10) \times 3$$

$$=5\times3$$

$$=15$$

$$2.4\frac{3}{10}$$
 of $50 = 3 \times \frac{1}{10}$ of $50 = 3 \times 5$

$$=3\times 5$$

$$= 15$$

- 3. What would you say is the "rule" for these "of" sums?
- 4. Which of these methods do you prefer?

Why?

- 5. Look again at the methods at 2.1 and 2.2. What do you notice?
- 6. Can you say how many learners in Act. 2 participate in:

rugby?_____; swimming? ______ 7 Now calculate:

$$7.1 - \frac{7}{2}$$
 of 36

$$7.2 \stackrel{1}{=} ^{\circ} \text{ of } 32$$

7.1
$$\frac{7}{12}$$
 of 36
7.2 $\frac{5}{8}$ of 32
7.3 $\frac{6}{7}$ of 350

7.4 $\frac{3}{4}$ of 224 Do you still remember? 1 000 m. = 1 litre 1 000 litre = 1 k ℓ 1 000 g = 1 kg 1 000 kg = 1 t 1 000 mm = 1 m 1 000 m = 1 km

5.8 Activity 3:

5.9 To calculate through selection and by using suitable computations [LO 1.8.6]

1. Let us see whether you are able to successfully apply the knowledge that you have acquired up to now. Work on your own and calculate:

- 1.1 Five learners share 1 litre of cool drink equally. How many m ℓ does each learner get?
- 1.2 Zane lives 2 km from the school. He has already covered $\frac{3}{4}$ of the distance. How far has he walked? (Give your answer in m).
- 1.3 The mass of a bag of flour is 1 kg. Mom needs $\frac{3}{10}$ of this to bake a cake. How much flour will she use?
 - 1.4 Joy buys 3 m of material but only uses $\frac{1}{6}$ of this to make a dress.

What fraction of material is left over?

How much material is left over?

5.10 Activity 4:

- To use tables and graphs to arrange and record data [LO 5.3]
- To draw and interpret a graph [LO 5.5.1]
- 1. The following activity is for your portfolio.

Look carefully at the assessment table before you begin – your teacher will allocate a code from 1 - 4 for the different sections.

Challenge!

1.1 Carry out a survey in your class and find out how many learners read which magazines. Write you information down in a table, e.g.

Magazine	You	Time	SA Runner	Fair Lady
Number of learners				

Table 2

- 1.2 Now show the information by means of a pie diagram.
- 1.3 Answer the following questions:
- a) Which magazine is the most popular?
- b) Which magazine is read the least?
- c) Which magazine is YOUR favourite?

Why?

BRAIN-TEASER!

Who am I?

- a) If you subtract me from $\frac{1}{2}$, you will get $\frac{3}{8}$
- b) If you cut me into sixths, you will have $\frac{34}{6}$
- c) If you double me, you will get 4 $\frac{1}{2}$

- a) If you halve me, you will get $2\frac{1}{12}$ b) If you calculate $\frac{3}{4}$ of me, you will get 12

5.11 Activity 5:

5.12 To solve problems in context [LO 1.6.1]

Split up into groups of three. You will be given the necessary paper to work on. Remember to discuss the solutions amongst yourselves beforehand and then you can do them neatly on paper.

- 1. Mrs Myusi buys 7 metres of material. If she wants to make each one of her four children a bright cushion for his or her room, how many metres of material can she use for each one? (All the cushions are of the same size.) Give each answer as a fraction.
- 2. Mr Muruvan buys 9 pieces of dry sausage that he wants to share equally among himself, his wife and their five children. What fraction of the sausage will each one get?
- 3. Grandpa Ben would like to divide R30 equally among his four grandchildren. What is the amount each one will get?
 - a) Did she divide it fairly?
 - b) What fraction does each person get?
 - c) Write your answer as an improper fraction:
 - 1.3 Sketch the solutions to the following:
 - a) Divide eight fizzers equally between five children.
 - b) Divide five milk tarts equally between 12 guests.
 - 1.4 Calculate the following:
 - a) Divide R5,00 equally between four children.
 - b) Divide 13 pies equally between eight learners.

5.13 Activity 6:

5.14 To use a series of techniques to do calculations [LO 1.10.5]

1. It is important for us to know how to key in ordinary fractions on a pocket calculator. This will help us find the answers to problems in no time.

Did you know?

If you want to show a fraction on the calculator, e.g. $\frac{5}{7}$ you must key in $5 \div 7 = .$

1.1 How does the calculator show the following fractions? Write down what you key in.



BRAIN-TEASER!

There are seven cows in a camp. Isolate them by means of three fences so that each cow is in its own

Indicate with a coloured pencil crayon where you would put the fences.

6 Assessment

Connexions module: m30942 5

Learning outcomes(LOs)

LO₁

Numbers, Operations and RelationshipsThe learner is able to recognise, describe and represent numbers and their relationships, and counts, estimates, calculates and checks with competence and confidence in solving problems.

Assessment standards(ASs)

We know this when the learner:

- 1.1 counts forwards and backwards fractions;
- 1.2 describes and illustrates various ways of writing numbers in different cultures (including local) throughout history;
- 1.3 recognises and represents the following numbers in order to describe and compare them:
 - common fractions to at least twelfths;
- 1.5 recognises and uses equivalent forms of the numbers listed above, including:
- 1.5.1 common fractions with denominators that are multiples of each other;
- 1.6 solves problems in context including contexts that may be used to build awareness of other Learning Areas, as well as human rights, social, economic and environmental issues such as:
 - financial (including buying and selling, profit and loss, and simple budgets);

LO₅

Data handlingThe learner will be able to collect, summarise, display and critically analyse data in order to draw conclusions and make predictions, and to interpret and determine chance variation.

We know this when the learner:

5.3 organises and records data using tallies and tables;

Table 3

7 Memorandum

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ACTIVITY 1
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$$\begin{array}{c} 1.\ 1.1\ \frac{1}{8}\ 1.2\ \frac{3}{12}=\frac{1}{4}\\ 1.3\ \frac{3}{12}=\frac{1}{4}\ 1.4\ \frac{6}{10}=\frac{3}{5}\\ 1.5\ 1\frac{5}{10}=1\frac{1}{2}\ 1.6\ 1\frac{3}{8}\\ \text{ACTIVITY 2} \end{array}$$

1. It is the same

2.10:5

7.1: 21

7.2;20

• :300

7.4:168

ACTIVITY 3

- 1. 1.1: 200 ml
- 1.2: 1 500 m
 - 1.3: 300 g

 - 1.4; $\frac{5}{6}$ 1.5: 2 500 mm or 2,5 m or 2 $\frac{1}{2}$ m BRAIN-TEASER!

- a) $\frac{1}{8}$
- a) 4
- b) $2\frac{1}{4}$ c) $4\frac{1}{6}$ d) 16

1.4 a) R1,25 / 125c

a)
$$1\frac{5}{8}$$

ACTIVITY 7

$$1.1 \text{ a}) 3 5 = 0.6$$

- a) 6 7 = 0.8571428
- b) 5 8 = 0.625
- c) $1\ 12 = 0.08333333$
- d) $3 \ 4 = 0.75$