education

Department:
Education
PROVINCE OF KWAZULU-NATAL

Foundation Phase
Training Workshop 3 May 2015
Facilitator's Guide

Maths

Jika iMfundo
what I do matters

Endorsed by:

Jika iMfundo
Foundation Phase JIT Workshop 3
Mathematics
May 2015
Workshop guide for participants

In this workshop you will look more closely at general preparation and the use of resources with the Jika iMfundo FP Maths materials. You will also find out more about how to teach fractions in the Foundation Phase.

Work in groups on all of the activity questions. Time guidelines are given and your facilitator will interact with you while you work. You will have many group discussions in which you can share what you have found. Suggested times are given below. If you have more time and want to continue the discussions for longer you are free to do so.

Workshop plan
8.00 – 8.30 – Arrival and distribution of materials for the workshop
8.30 – 9.30 – Session 1: Planning and Resources (1 hour = 60 min)
9.30 – 10.30 – Session 2a: Fractions in FP (1 hour = 60 min)
10.30-11.00 – Tea
11.00-13.30 – Session 2b: Fractions in FP (2 ½ hours = 150 min)
13.30-14.30 - Lunch

Session 1: Lesson plans and resources – what's in the package and how to use it?

In this discussion you will refer to the *Tracker*, the *Lesson and Assessment Plans and Resources* and the *Learner Activity Book*.

This activity involves sets of questions to guide the discussion for about 60 minutes. Your facilitator will guide you as you break into groups and have large group discussions throughout this time.

Toolkit reflection (30 min)

Take a few minutes to page through the Jika IMfundo lesson plans and related material (*Tracker*, the *Lesson and Assessment Plans and Resources* and the *Learner Activity Book*). What is contained in the material? [Make a list.] (5 min)

Presenter's note: *Participants do not have to write out the full list – locate all of the contents pages and use this to talk about everything that is available – the key thing is they verbalise the full toolkit materials.*

Tracker:

- *Refer to contents page*
- *Weekly tracker pages including*
  - *lesson plans for the week*
  - *continuous assessment activity with marking criteria.*
- *Term Assessment plan*
- *Record of marks template*

Lesson and Assessment Plans and Resources:

- *Contents page*
- *Teacher's notes*
- *Lesson plan outline*
- *Lesson plans for the rest of the term*
- *Resources for this term*
    - *Lesson plan printables*
    - *Assessments and marking memos*
    - *Mental maths challenge cards*
    - *Enrichment activity cards*

Learner Activity Book:

- *Daily classwork and homework activities for learners to be used in conjunction with the lesson plans.*

The next three questions call for personal reflections – be sure to let each group give one response in the report back, if appropriate and if there is time. Encourage honest responses and try to get report back on ideas that share positive experiences that may inform and support others in their use of the toolkit. As you circulate while you facilitate the group discussions you could guide the groups as to which point you'd like them to give feedback if you hear different groups coming up with different ideas.

District Officials – collect group response to these questions for feedback. Remind groups to write the venue name at the top of the hand-in so that you have a record of where the responses were from.

Group members – this is an opportunity to give feedback on the toolkit. It can be used to improve the materials and support.

1. How have you been able to use it in your classroom so far? (10 min)

2. In what way has the material supported you? (10 min)

3. What difficulties have you experienced? (10 min)

Resources in FP Mathematics (30 min)

Page through the resource lists and printable resources in the *Lesson and Assessment Plans and Resources*. [Make a list of these resources to remind yourself what is available as printable resources in the guide.]

a. Printable resources for particular lessons (listed and ready to use in lessons for which they are required).
b. Assessments and memos (for the number of tasks specified by CAPS and aligned with CAPS and the sequenced lesson plans).
c. Mental maths challenge cards (one per week, to allow a written record of some mental maths activities.).
d. Enrichment activity cards (to allow learners who finish the activities set for classwork early to keep busy doing mathematical activities in the lesson).

4. What resources do you have in your mathematics storeroom that you could use when teaching FP Mathematics? Do you regularly use those resources? Why/why not? (10 min)
   Personal responses – encourage teachers who show that they do not really know what is at their schools to go and look and find out – they may find useful things stored that they can use in the FP Mathematics lessons. Are some resources stored so "safely" that they are not even being used? It is better to get them out and use them in the classroom!

   District Officials – collect group response on storeroom resources.

5. Maths in FP cannot be taught without support of concrete resources. Discuss this comment. (10 min)
   FP learners are mostly in the concrete-operational stage of learning – they need to experience holding/counting/experimenting/feeling real objects to help them to develop abstract concepts. In FP things such as counters (which could be bottle tops, blocks, sucker sticks, unifix cubes and so on), Dienes' blocks, models of shapes (can be collected by finding containers of various shapes), scrap paper and so on can be used.

6. What is the best way to be prepared for well-resourced teaching? (10 min)
   - *Go through the lesson plan before you teach (on the weekend/on Friday before the weekend/each night before teaching).*
   - *Make notes as needed to remind you what materials you will need in the week (the tracker has helpful notes for this)*
   - *Collect/find/prepare any resources needed for the week ahead.*
   - *Note of you need one copy for yourself/groups of learners/one per learner so that you make enough copies.*
   - *Practice using any resources that you are going to use in a lesson – this will help you to know how to use the materials/difficulties that might arise when learners use the materials/how to pace the lesson to optimise the learning opportunities you can present in the lesson using the structured activities and resources suggested by the tracker.*
   - *Make your own resources whenever you can – this has cost implications (try to use recycled materials) – and it can give you great job satisfaction and enhance learner achievement.*

7. HOD/Lead teachers: Discuss how YOU will help the teachers to be well prepared? (10 min)
   Responses will vary – encourage real responses that will be followed up in context – this is not a theoretical discussion! It's about helping teachers be more effective in their classes.
   Help teachers look through their storerooms/the school storeroom so that they are aware of what they have and what they don't have.

Session 2: Teaching fractions in the Foundation Phase

In this discussion you will do hands-on activities related to the teaching of fractions in the FP. You will also refer to the *Lesson and Assessment Plans and Resources*. This will give you experience on how to work with the lesson plan activities relating to the teaching of fractions.

You also need to use:

- Scrap paper
- Counters
- Scissors

This activity involves sets of questions to guide the discussion in one 1 hour session and one 2 ½ hour session. Your facilitator will guide you as you break into groups and have large group discussions throughout this time.

Session 2a (60 min): Fraction concept

NOTE: Presenters need to take time to go through the theory in the notes. This will take time not allocated to the group activities, hence the activity time does not equal the total session time.

Fraction concept is a part of number concept, since fractions are the numerals (symbols) for a group of numbers.

Fractions can be used to express all rational numbers. Rational number concept involves an understanding of fractions which involves more than just the finding of parts of a whole. Learners need to be exposed to a range of activities and conceptual teaching on fractions as parts of wholes, ratios, decimals and percentages in order to develop fully their understanding of multiplicative reasoning and rational numbers.

Fraction numerals are written as a numerator over a denominator.

Reflection

10 min

What is the difference between a number and a numeral?

How does this difference start to speak to you about the difference between knowing how to write a fraction numeral and knowing the numeric value of that numeral?

Presenter comments:

Number is an abstract concept – of "muchness" (how much/how many). Numeral is a symbol used to write a number.

This distinction (between number and numeral) tells us that reading what is written does not necessarily mean understanding what you are reading. Learners need to learn number concept as well as the symbols used to write things down.

Fractions and wholes: introductory concepts and activities

Fractions can be used to represent numbers which are not whole numbers. As such, they are slightly more difficult to come to terms with than whole numbers and are taught once basic number concept has been established. The first part of this activity will look in a detailed manner at sound methods for the teaching of fractions to young learners. You should be able to follow these ideas and ensure that all of this information given is part of your own knowledge. It is vital that all teachers of mathematics have a good concept of fractions themselves.

We need to ensure that learners are given adequate **exposure to a great enough variety of examples** of fractions in concrete demonstrations so that they are able to form their own abstract concept of what number the fraction numeral represents. We begin by looking at fractions as parts of concrete wholes and progress from there to more abstract working with fractions.

Types of wholes

The first important thing we should stress is that we can find fractions of **continuous** and **discontinuous** wholes. These two types of wholes are not always given equal representation. We should not emphasise one more than the other or we risk giving an unbalanced idea of concrete wholes.

A **continuous whole** is a single item which is cut/folded/broken/divided up into parts of equal size in one way or another in order to find its fraction parts. Continuous wholes can also be called unit wholes since they are made of a single item. Examples of continuous wholes are: an orange, a piece of paper, a slab of chocolate, a circular disc, a loaf of bread etc.

A **discontinuous whole** is a group of items that together make up the whole. To find a fraction part of such a whole, we can divide it up into groups, each with the same number of items. We call such groups "equal-sized groups" or "groups of equal size". It is important that we always mention that the groups are equal in size to emphasise this aspect of the fraction parts of a whole. Examples of discontinuous wholes are: 15 oranges, 6 biscuits, 27 counters, 4 new pencils, etc.

Reflection

10 min

List five more of your own examples of continuous wholes.

List five more of your own examples of discontinuous wholes.

Presenter comments:

Examples will vary – make sure the continuous wholes are all ONE SINGLE ITEM that has to be cut/broken up to find the fraction part and the discontinuous wholes are all multiple item wholes (anything more than one) that have to be grouped to find the fraction part.

To assist learners establish their fraction concept, we must use good language patterns consistently. It is thought that our language is linked to our thinking, and so by encouraging learners to talk about

what they see, we help learners to transfer what they see in the concrete demonstrations into their abstract thought. The language patterns that we are talking about are recorded below.

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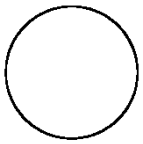
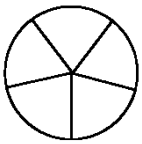
Language patterns (talking about) continuous wholes

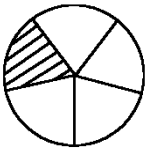
Demonstrate using this example:



Whole



Whole divided up into 5 parts of equal size



$\frac{1}{5}$ of the whole shaded

To find $\frac{1}{5}$ of my circular disc, I first divide the whole circular disc into 5 parts of equal size. Each part is $\frac{1}{5}$ of the whole, and if I shade one of these parts, I have shaded $\frac{1}{5}$ of the whole.

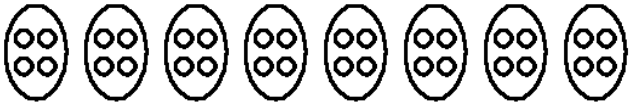
Language patterns (talking about): discontinuous wholes

Demonstrate using this example:

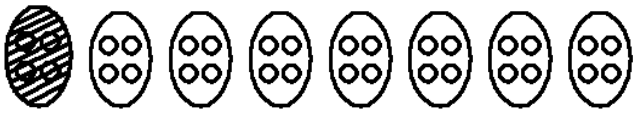
Example

Find $\frac{1}{8}$ of 32 counters

32 counters (shown above) represent the whole



I put my counters into 8 groups of equal size. There are four counters in each group.



One of the groups of equal size is $\frac{1}{8}$ of the whole.

To find $\frac{1}{8}$ of 32 counters, I first divide the counters into 8 groups of equal size. I find eight groups with four counters in each group. Each group is $\frac{1}{8}$ of the whole, and so 4 counters is $\frac{1}{8}$ of 32 counters.

Activity

30 min

Activity 1

Illustrate and record your solutions to the following questions:

1. Find $\frac{1}{3}$ of the rectangle given below:

Language pattern: *To find $\frac{1}{3}$ of the rectangle, I first divide the whole rectangle into 3 parts of equal size. Each part is $\frac{1}{3}$ of the whole, and if I shade one of these parts, I have shaded $\frac{1}{3}$ of the whole rectangle.*

2. Find $\frac{1}{3}$ of 27 beads, as given below.

Language pattern: *To find $\frac{1}{3}$ of 27 counters, I first divide the counters into 3 groups of equal size. I find three groups with nine counters in each group. Each group is $\frac{1}{3}$ of the whole, and so 9 counters is $\frac{1}{3}$ of 27 counters.*

Discuss these additional exercises. (If you use these with learners, they should illustrate and give the language pattern each time):

a. Find $\frac{1}{3}$ of 30 biscuits.

To find $\frac{1}{3}$ of 30 biscuits, I first divide the biscuits into 3 groups of equal size. I find three groups with 10 biscuits in each group. Each group is $\frac{1}{3}$ of the whole, and so 10 biscuits is $\frac{1}{3}$ of 30 biscuits.

b. Shade $\frac{1}{4}$ of a strip of paper.

To find $\frac{1}{4}$ of my paper strip, I first divide the strip into 4 parts of equal size. Each part is $\frac{1}{4}$ of the whole, and if I shade one of these parts, I have shaded $\frac{1}{4}$ of the strip.

c. Illustrate and explain how to find $\frac{1}{6}$ of a circular cake.

To find $\frac{1}{6}$ of my circular cake, I first divide the whole circular cake into 6 parts of equal size. Each part is $\frac{1}{6}$ of the whole, and if I shade one of these parts, I have shaded $\frac{1}{6}$ of the circular cake.

d. Find $\frac{1}{4}$ of 20 beads.

To find $\frac{1}{4}$ of 20 beads, I first divide the beads into 4 groups of equal size. I find four groups with five beads in each group. Each group is $\frac{1}{4}$ of the whole, and so 5 beads is $\frac{1}{4}$ of 20 beads.

When you introduce fractions to learners, you will **begin by finding unit fractions** (as we have done above). A unit fraction is a fraction of the form $\frac{1}{n}$. The numerator is one and the denominator can be any number except zero. You must allow the learners to experiment with finding unit fractions of a broad variety of wholes. At the beginning you will restrict your discontinuous wholes according to the denominator.

For example, if the denominator is 6, you will only ask the learners to find fraction parts of 6 counters, or 12, 18, 24, etc. counters (multiples of 6). You must also remember to set tasks involving continuous wholes as well as discontinuous wholes.

Vary your apparatus as widely as you can. Use pieces of paper, string, sand, water, beads, counters, strips of paper, bottle tops – whatever is easily available.

Session 2b: Further activities in the teaching of fractions (150 min)

You could turn some of your fraction finding into games or activities. In this way, you could keep the learners busy for slightly longer periods of time, while they are learning and discovering ideas in an interesting and enjoyable way.

Example of a game to teach fractions

"Full House"

In this example, learners are given 20 counters. They must then try to find all the possible fraction parts that they can, of 20 counters. They could work in groups of two to four members (not more, as they would not have enough of a chance to express themselves). The discussion of the different fraction parts, could go on in the whole group. Once the group thinks that they have found all the possible fraction parts they can put up their hands and say "Full House!", to call you to come and check up on them. As a follow up, ask each learner to record in full and good language one of the fraction parts which they found. Try this activity out yourself!

Once you are satisfied that your learners have established the general result: $\frac{1}{n}$ of $m = m \div n$, you can move on to finding non-unit fractions (these will be discussed later in the session).

Activity

10 min

Activity 2

Give two examples to show that $\frac{1}{n}$ of $m = m \div n$, one of a continuous whole and one of a discontinuous whole.

Continuous example

$\frac{1}{4}$ *of 1 square* $= 1 \div 4 = \frac{1}{4}$ *of the square.*

(In the continuous whole example the answer is a fraction, not a whole number.)

Discontinuous example

$\frac{1}{4}$ *of 20 stamps is* $20 \div 4 = 5$ *stamps.*

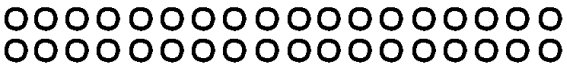
(In the discontinuous whole example the answer is a whole number.)

You will now set tasks for your learners to find fraction parts of wholes, where the fraction is of the type $\frac{m}{n}$ where $n \neq 0$. This is purely an extension of the previous activities, where you found $\frac{1}{n}$ of a whole. These fractions are called **non-unitary fractions**. Learners should not experience too many difficulties finding non-unitary fractions if unit fractions have been grasped well.

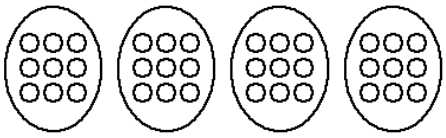
Example

Discontinuous whole: Find $\frac{3}{4}$ of 36 beads

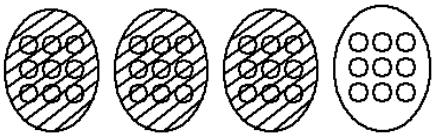
The whole



The whole divided into quarters



Three of the four groups (representing $\frac{3}{4}$ of 36) have been shaded



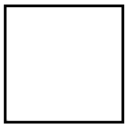
Language pattern

The whole is 36 beads. I divide the whole up into four groups of equal size in order to find quarters. There are 9 beads in each group. One group of 9 is $\frac{1}{4}$ of 36, and so 3 groups of 9 are $\frac{3}{4}$ of 36, i.e. 27 is $\frac{3}{4}$ of 36.

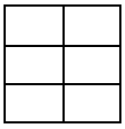
Example

Continuous whole: Find $\frac{5}{6}$ of the square sheet of paper below.

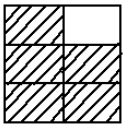
The whole



The whole divided up into 6 parts of equal size



5 of the 6 parts of equal size have been shaded. i.e. $\frac{5}{6}$ of the whole has been shaded



Language pattern

The whole is a square sheet of paper. I fold the whole up into six parts of equal size in order to find sixths. Each part is $\frac{1}{6}$ of the whole, so 5 of the six equal sized parts is $\frac{5}{6}$ of the whole.

Activity

30 min

Activity 3

Try these examples on your own. Write out the full language pattern you would use in each case, so that you can check your own ability to talk fluently about the fraction parts you are finding.

1. Illustrate $\frac{2}{3}$ of a pizza.

To find $\frac{2}{3}$ of my pizza, I first divide the whole pizza into 3 parts of equal size. Each part is $\frac{1}{3}$ of the pizza, and if I shade two of these parts, I have shaded $\frac{2}{3}$ of the pizza.

2. Show how you find $\frac{2}{5}$ of 20 bricks.

To find $\frac{2}{5}$ of 20 bricks, I first divide the bricks into 5 groups of equal size. I find five groups with 4 bricks in each group. Each group of 4 is $\frac{1}{5}$ of the whole, and so 8 bricks is $\frac{2}{5}$ of 20 bricks.

3. Shade $\frac{3}{5}$ of a rectangular sheet of paper.

To find $\frac{3}{5}$ of my rectangular sheet, I first divide the whole rectangular sheet into 5 parts of equal size. Each part is $\frac{1}{5}$ of the rectangular sheet, and if I shade three of these parts, I have shaded $\frac{3}{5}$ of the rectangular sheet.

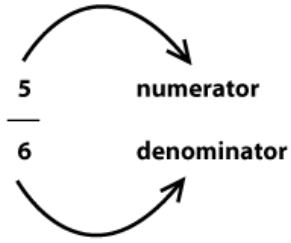
4. What is $\frac{3}{4}$ of 20 liquorice strips?

To find $\frac{3}{4}$ of 20 liquorice strips, I first divide the liquorice strips into 4 groups of equal size. I find four groups with five liquorice strips in each group. Each group of 5 is $\frac{1}{4}$ of the whole, and so 15 liquorice strips is $\frac{3}{4}$ of 20 liquorice strips.

We have covered the finding of fractions of many different wholes. We will begin to hope that our learners are starting to think of fractions also as numerals for numbers, and have started to recognise certain fractions which look different but which actually represent the same number (such as $\frac{1}{2}$ and $\frac{2}{4}$). The last thing we need to cover in this introductory section is a little more terminology, relating to types of fractions. Some of this terminology is not specifically used in CAPS but it should be used so that learners begin to become familiar the correct terminology right from the start.

Fraction numerals

Show learners how to write a fraction numeral and tell them the terminology. Make sure they know which of the numerals is the numerator (the number at the top of the fraction numeral) and which is the denominator (the number at the bottom of the fraction numeral).



You must learn these names if you do not already know them. This is important terminology in the section of fractions. Make sure that learners use the terminology repeatedly, to help them build the words into their regular speech.

Like and unlike fractions:

We call fractions which have the same denominators **like fractions**. Fractions whose denominators are not the same are called **unlike fractions**.

For example $\frac{3}{7}$, $\frac{6}{7}$, have 7 as their denominator.

Activity

10 min

Activity 4

1. Is $\frac{5}{3}$ like to $\frac{2}{3}$? *Yes*
2. Give 5 other fractions which are like to each of the given fractions below:
   Answers will vary. Denominators must be the same for all like fraction groups.
   a. $\frac{1}{2}$ e.g. $\frac{5}{2}, \frac{2}{2}, \frac{20}{2}, \frac{7}{2}, \frac{3}{2}$
   b. $\frac{2}{3}$ e.g. $\frac{4}{3}, \frac{13}{3}, \frac{7}{3}, \frac{11}{3}, \frac{3}{3}$
   c. $\frac{4}{5}$ e.g. $\frac{2}{5}, \frac{4}{5}, \frac{5}{5}, \frac{17}{5}, \frac{12}{5}$

Proper and improper fractions: When the numerator of a fraction is smaller than the denominator of a fraction, the fraction is called an **proper fraction**. When the numerator of a fraction is bigger than the denominator of a fraction, the fraction is called an **improper fraction**.

Example

$\frac{4}{7}, \frac{5}{6}, \frac{2}{9}, \frac{3}{8}$ are proper fractions

$\frac{14}{5}, \frac{15}{4}, \frac{22}{3}, \frac{3}{2}$ are improper fractions

Activity

10 min

Activity 5

1. Give your own 6 examples of proper fractions.
   Answers will vary. Must have the numerator of the fraction smaller than the denominator of the fraction.
2. Give your own 6 examples of improper fractions.
   Answers will vary. Must have the numerator of the fraction bigger/greater than the denominator of the fraction.
3. Are like fractions equal in number (value)?
   Sometimes but not always.
4. Are the fractions such as $\frac{2}{2}$, $\frac{4}{4}$, $\frac{5}{5}$ and $\frac{8}{8}$ proper or improper fractions? *Proper fractions.*

You should now be able to do all of the exercises that follow. You can use them with learners where appropriate. Remember to try them out yourself before using them in your classroom. The exercises can be photocopied. They are at grade 2/3 level (basic and challenging). You should adapt the exercises to use with grade 2 according to CAPS fraction requirements.

Activity

30 min

Activity 6

1. Work through the following four fractions exercises (pp. 16-18 in the participants' guide).
2. You have learnt about fractions and fraction terminology. Reflect on the exercises bearing in mind the following things:
   a. Variation in types of whole.
      There are examples with both continuous and discontinuous wholes.
   b. Variation in fractions being used.
      There are examples with both unitary ($\frac{1}{n}$) and non-unitary ($\frac{m}{n}$) fractions.
   c. Variation in number of parts in discontinuous wholes.
      There are examples with many different numbers

of units making up the whole.

d. Variations in the denominators.
   The denominators are varied.
e. Variations in the numerators.
   The numerators are varied – this is what differentiates unit and non-unit fractions. (Only Grade 3 should work with non-unit fractions).

3. Why is variation good for learning?
   If learners are exposed to many different examples of a concept it is easier for them to generalise the abstract concept from the concrete examples they have worked with.
4. What prior knowledge is built on when you teach fractions?
   Sharing division – to be discussed further in the next activity looking at fractions in CAPS.

5. In Exercise 4, what kinds of things result in examples that do NOT show the fraction parts? Why might this confuse learners?
   a. *If the size of the parts is not equal, then the parts are not fraction parts. (e.g. F, H, L, N, P.)*
   b. *If the number of parts is not correct, then the parts are not fraction parts.(e.g. C, E, J.)*
   c. *Learners might get confused and think, for example, that halves have been shaded when two parts have been shaded if they have not realised that the parts must be equal in size for them to be fraction parts. This happens more often with continuous wholes.*
   d. *Learners might get confused by discontinuous whole examples when the number of parts shown is not correct. This often happens when the number of items in the "part" corresponds to the fraction type being found. If, for example, thirds have been requested and the counters have been put into "threes" learners might think thirds have been found (as in example C) or quarters have been requested and the counters have been put into "fours" learners might think quarters have been found (as in example E).*

CAPS – Fractions requirements

The activities described in the first session cover the first part of the fractions content for the foundation phase. In FP, the curriculum does not require learners to write fraction numerals, but it might be useful to teach them how to read and write fraction numerals right away, this this reinforces that we are teaching them number concept.

Activity

20 min

Activity 7

Refer to the CAPS extracts (participants' guide pp. 21-22) and the ANA diagnostic report (2014) extract (participants' guide pp. 22-25) when you do this activity.

1. Read the curriculum extract and talk about the differences between the Grade 1, 2 and 3 curriculum requirements related to fractions.
   Note that there are a few typos in the CAPS that we have corrected in this extract.

2. In Grade 1 there is no fractions teaching. Grouping and sharing is indicated, which leads into fractions. In what way is the topic of grouping and sharing related to fractions?
   CAPS 1.9 Grouping and sharing leading to division *gives background knowledge related to fractions learning. More particularly – it is the sharing division that leads to fractions.*
   If we want to share one thing between 2 people we cannot do so without cutting the thing into 2 parts – so we find a fraction answer to 1 ÷ 2. When we find fractions of discontinuous wholes the activity that brings us to the answer is sharing division. To find one third of 36 counters I must share the counters into 3 groups of equal size. When I have shared out the counters I find 12 counters in each of the three groups, so 12 is one third of 36.

3. In Grades 2 and 3 teaching on fractions begins. Compare the content stipulated under 1.10 (Sharing leading to fractions) and 1.17 (Fractions) for the two grades.

- *Grade 2 only starts specific fractions work in term 2*
- *Grade 2 only find unit fractions.*
- *Grade 3 find unit fractions and non-unit fractions but only proper fractions.*

4. What concrete apparatus/activities could be used to teach fractions according to CAPS in FP?

- *"Fractions in context" are mentioned. This could refer to counters and scrap paper.*
- *Diagrammatic form is a semi-concrete form since it is a visual representation of the abstract concept.*
- *Unifix blocks and other counters can be used.*
- *Teachers can cut/make examples out of paper to make different kinds of continuous wholes.*

5. How do the remediation strategies suggested in the ANA report link to the strategies you have used in the workshop today?

- *Grade 1: the strategies mention sharing of a discontinuous whole.*
- *Grade 3: the strategies mentioned in the report refer to activities using continuous wholes.*

6. How could you apply the work done in the session today to assist in remediation of the errors diagnosed in the ANA 2014?

- *Grade 1: this is pre-knowledge but it since fractions are based on sharing division – sharing of a discontinuous whole into fraction parts applies (although grade 1 learners might not speak about fractions). Concrete sharing activities and developing good language patterns to speak about what is being done would help consolidate the concepts.*
- *Grade 3: could use concrete sharing to find fraction parts (using continuous and discontinuous wholes) – developing good language patterns to reinforce the learning of the concept of fractions. Vary the whole, vary the fraction types, use good mathematical language.*

Activity 8

Activity

15 min

Refer to the *Lesson and Assessment Plans and Resources* when you do this activity.

1. Look through the lesson plan sets to find lessons on fractions.
   Use the contents pages of the lesson plans to find the fractions lessons. Grade 2 and 3 only. You can look through Term 1 or Term 2 lesson plans. Grade 1 lesson plans will not have fractions lessons as CAPS does not prescribe fractions for Grade 1.
2. What concrete resources are suggested for use in the lesson plans?
   - *Counters*
   - *Unifix*
   - *Scrap paper*
   - *Cuisenaire rods*
   - *Fraction wall chart*
3. Choose one lesson for a grade that you teach. Look closely at the scaffolded activities and think of how you might add to this lesson based on some of the activities you have worked through today.
   Groups will work on different lessons. Try to apply the ideas learnt in this session to adapt/add to one of the lesson plans on fractions. Discuss ideas as a group to think about ways to apply what you have learnt.

Acknowledgement: The following resource was used in the preparation of this workshop. Sapire, I. (2010). *Mathematics for Primary School Teachers*. Saide and the Wits School of Education, University of the Witwatersrand, Johannesburg.