



2016 TRAINING WORKSHOP NO.6
MATHEMATICS



FOUNDATION PHASE



education

Department:
Education

PROVINCE OF KWAZULU-NATAL

**Foundation phase
Just-in-Time Training Workshop 6
April/May 2016**

Participants' Handout

Maths



Jika iMfundo
what I do matters

Endorsed by:



Jika iMfundo
Foundation Phase JIT
Workshop 6 Mathematics: April/May 2016
Workshop guide for participants

In this workshop participants will find out more about problem solving strategies in the Jika iMfundo FP Maths materials. These strategies are part of the CAPS for FP. There are also activities on the teaching of data handling and time 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 – 10.30 – Session 1: Teaching Time and reflecting on practice (2 hours = 120 min)

10.30-11.00 – Break

11.00-12.30 – Session 2: More problem solving strategies for addition and subtraction (1 ½ hours = 90 min)

12.30 – 13.30 – Session 3: Data Handling (1 hour = 60 min)

Session 1: Teaching Time and reflecting on practice

Materials in the lesson plans in Term 2 on time:

- *Grade 2 Term 2 lessons 29 and 30*
- *Grade 3 Term 2 lessons 35 and 36*

In this discussion you will refer to the *Lesson Plans* doing hands-on activities related to the teaching of time in the FP. These will give you experience on how to work with the lesson plan activities relating to the teaching of time. You will make your own manipulatives using the cut-outs in the attached hand-out.

This activity involves sets of questions to guide the discussion for about 120 minutes. Your facilitator will guide you as you break into groups and have large group discussions throughout this time.

Reflection

As a teacher you need to monitor your own curriculum coverage as well as the quality of your lessons, so that you are sure you are giving your learners the best that they can get. When you teach there is always something you can learn from the way the lesson went. In this activity you will reflect on a lesson that was given on the topic of *Time*. Reflecting on practice gives insight into:

- the content being taught (curriculum coverage) and
- the way in which it is being taught (practice – including interaction with learners, teacher questioning and so on).

Read the following description of a Grade 2 lesson about time, based on a Jika iMfundo lesson plan.

Grade 2 Lesson 30 (Length of lesson 90 min)

CAPS: 4.1 Time.

Lesson vocabulary: Time, hours, half hours, analogue clock, long hand, short hand, clock face, calculate, am (morning), pm (afternoon), past, to.

Prior knowledge: Learners should have been taught how to:

- Understand time which was covered on an on-going basis during whole-class teaching time.
- Deal with time continuously during whole-class teaching time.

CAPS concepts:

- Tell 12-hour time in hours and half hours on analogue clocks.
- Use clocks to calculate length of time in hours or half hours.

The lesson started at 8 am. The teacher spent about 15 minutes working on the counting activity (5s from 50 to 150) and a further 10 minutes on the mixed addition and subtraction questions of the mental maths activity. She then moved on to the body of the lesson.

She started with Activity 1, a whole class activity in which she discussed *am* (morning) and *pm* (afternoon) and the type of activities we do in the morning and in the afternoon. To start with, she drew an analogue clock on the board. She discussed how the long hand moves around the full circle once for an hour to pass.

A learner near to the back asked what she meant by “the long hand moves around the full circle” but she did not answer the question. She told him to wait for her demonstrations.

The teacher then proceeded to show the class different times on the analogue clock, using a clock she had prepared using the cut out at the back of the Jika iMfundo lesson plans. As she showed the different times, she asked questions.

- She showed 2 o'clock on the clock face. She moved the hands to the correct positions but did not speak while she did this. She asked: *Where is the long hand and where is the short hand?*
- The class was quiet. The teacher pointed to the short hand and said – *the long hand is on the 12 and the short hand is on the 2.*
- She then showed 5 o'clock (moving the hands in silence) and asked. *Where is the long hand and where is the short hand?*
- Some learners' hands went up and she called for an answer. The correct answer was given by a learner near to the front and the teacher repeated it, pointing at the hands while she did so saying: *the long hand is on the 12 and the short hand is on the 5.*
- She showed 6 o'clock and asked. *Where is the long hand and where is the short hand?*
- Again, some learners' hands went up and she called for an answer. The same learner who had answered correctly the previous time gave the answer. Again the teacher repeated it, pointing at the hands while she did so, saying: *the long hand is on the 12 and the short hand is on the 6.*
- She asked if the learners would like to discuss other times. There was loud chatter but no definite answer and so the teacher moved on to the next activity. (Time taken for this activity was 10 min.)

Activity 2 called for the class to refer to the analogue clock printable from the Jika iMfundo resources. The teacher had made copies so that each pair of learners could share a clock face. She handed out the printed copies and asked the learners to cut out the clocks. There was general chatting and activity while learners looked for their scissors, sharing in some cases, and got busy cutting out the printed clock faces and hands. This took about 10 minutes.

Not everyone was ready but the teacher called the class to attention and began to engage with the learners by giving the following instructions:

- Label the two halves of the analogue. One *past* and one *to*.
- Put a red circle around the 6 to highlight half past.

There was much chatter and confusion and learners tried to follow the instructions. Some were able to carry out the two tasks correctly but many were not. The teacher walked around the class helping learners as she went around, explaining what they had to do so that they were able to do it. (This part of the lesson took 8 minutes.)

The teacher called the whole class together again, saying they had to move on. This time, the learners did a counting activity, using their clocks. They counted in 5s to 30 using an analogue clock. The way they showed the 5s was to move the long hand from one number to the next, going around the clock face. The teacher reminded the class that this was how the long hand moved around the clock face a full circle in an hour. They counted in 5s to 30 moving the long hand from the 12 to the 6 and then again from 5s to 30 moving the hand from the 6 back to the 12 on the clock face. Generally the learners chanted the count in 5s as a class but not all of them were moving the clock hands at the same time. This counting went on for 7 minutes until the teacher stopped the class saying they were going to move on to revise times on the clock face.

The teacher asked the class to show half past two. She also showed it on her clock face. Some learners moved the hands on their clock faces to the correct positions. The teacher asked: *Where is the long hand and where is the short hand?* The learners were all calling out their answers loudly so the teacher quietened them

down and asked for hands to go up. Most of the hands went up. The teacher called to a learner who correctly gave the answer and she repeated it saying: *the long hand is on the 6 and the short hand is half way between the 2 and the 3*. The teacher then asked various learners to come forward to show different half past times to the class. (This part of the lesson took 15 minutes.)

(There was a third activity in the lesson plan about calculating times passed, but the teacher skipped this activity.)

The teacher then called the whole class to attention and told them to take out their Learner Activity books. They had to complete the classwork activity in the remaining lesson time. Learners settled into doing the classwork, talking to each other and to the teacher who circulated answering questions and explaining to learners who needed help. The bell rang at 9.30 am to indicate the end of the lesson. The teacher told the class to pack up their books and finish their work at home.

Activity 1

1. Did the teacher cover the curriculum content planned for this lesson? Discuss the lesson coverage in relation to the CAPS concepts for the day.
2. The reflection notes below were made by the teacher in her tracker at the end of the **week**. Discuss the teacher's comments in relation to what value they would add if she were to go back to them when she had to teach the same lesson (on time) again in the following year.

Reflection: Think about and make a note of: What went well? What did not go well? What did the learners find difficult or easy to understand or do? What will you do to support or extend learners? Did you complete all the work set for the week? If not, how will you get back on track?

Good lesson on time. Completed most activities. Classwork not finished in class. Learners generally coped but some found the work difficult. Basically on track.
Geometric patterns - cut outs excellent. Not quite finish all activities.
Symmetry. Learners liked the butterfly but difficult to cut. Time.

What will you change next time? Why?
Need to push faster to get through all activities. Learners need to work faster. Need resources (scissors)

3. Pretend that you taught the lesson yourself. Answer each of the tracker reflection prompts in relation to the lesson as it is described above:
 - a. What went well?
 - b. What did not go well?
 - c. What did the learners find difficult or easy to understand or do?
 - d. What will you do to support or extend learners?
 - e. Did you complete all the work set for [this lesson]? If not, how will you get back on track?
 - f. What will you change next time? Why?
4. The tracker allows for weekly reflection. You have reflected on just ONE lesson using the prompts. Do you think it is useful to reflect on a lesson in detail? Why?
5. How do the Jika iMfundo mathematics lesson plans allow/encourage teachers to reflect daily on their teaching?
6. Refer to the attachment with further reflection prompts.
 - a. How will the questions help you to reflect on your curriculum coverage? Which questions will be most helpful?
 - b. How will the questions help you to reflect on your lessons? Which questions 5 key would you use to help you to reflect on your lessons?

Session 2: More problem solving strategies for addition and subtraction

Materials in the lesson plans in Term 2 on problem solving strategies:

- Grade 1 Term 2 lessons 19 and 20
- Grade 2 Term 2 lessons 9, 10, 11 and 12
- Grade 3 Term 2 lessons 6, 7, 8, 9, 10 and 11

In this discussion you will try out some more different strategies for doing calculations when solving problems.

This activity involves sets of questions to guide the discussion for about 90 minutes. Your facilitator will guide you as you break into groups and have large group discussions throughout this time.

- Grade 1 Term 2 lessons 19 and 20 (Excerpts below are from lessons 19).

Lesson 19: Activity 1: Learners work in groups of four.

- Give the learners ten counters. Ask them to arrange their counters to show you the following:
 - In the illustrations below the counters in brackets have been taken away from the total to show the subtraction given in the question.
 - First they should show the addition and then they use the same counters to “undo” the addition by subtracting.

$1 + 8 = 9$	● ●●●●●●●	$9 - 8 = 1$	●(●●●●●●●)
$2 + 5 = 7$	●● ●●●●	$7 - 5 = 2$	●●(●●●●)
$3 + 7 = 10$	●●● ●●●●●●	$10 - 3 = 7$	●●●●●●●(●●●)
$4 + 4 = 8$	●●●● ●●●●	$8 - 4 = 4$	●●●●(●●●●)
$5 + 1 = 6$	●●●●● ●	$6 - 5 = 1$	●(●●●●●)

Lesson 19: Activity 2: Whole class activity.

- Give the learners the following word problem, and draw a simple picture to illustrate it on the board.
- *6 birds sit on the wall. 4 fly away. How many birds are left?*
- The learners use their counters to work out the answer. They put down 6 counters and then take away 4 and then tell you that they have 2 left.
- The learners might count ALL the counters to get the answer.
- If they count all ask if there is a quicker way to count – they could see that counting ON or BACK is possible and saves time, but only if they understand this. Let them count all until they are ready to count on or back.
- Follow the same procedure with other examples such as:
 1. 8 cats lie outside in the sun. 3 cats go inside. How many are left outside?
 2. 9 dogs are running around in the road. 5 dogs go home. How many are still in the road?
 3. I bought 7 sweets. I ate 2. How many are left?

Remediation: Give learners similar examples to the ones in Activity 2. Assist them in solving each problem by using counters. Encourage learners to explain what they are doing.

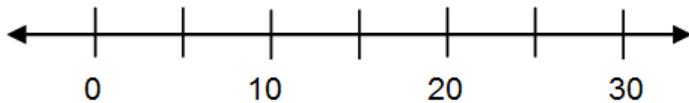
Activity 2

1. Work through the lesson activities briefly together as a group.
2. How does the lesson plan above build up the conceptual understanding of Grade 1 learners?
3. How does the lesson plan above build up the operational skills of Grade 1 learners?
4. What is the purpose of the remediation and when would the teacher do this work with learners?

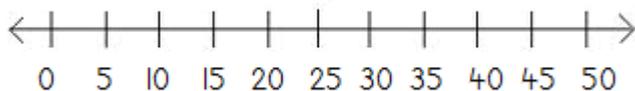
- Grade 2 Term 2 lessons 9, 10, 11 and 12 (Excerpts below are from lessons 9 and 11).

Lesson 9: Activity 2: Whole class activity.

- Draw the 0–30 and a 0–50 number lines on the board. Label one in 10s and one in 5s.
- Ask learners to give you any two numbers that make 30, e.g. $28 + 2 = 30$, $25 + 5 = 30$.
- Go the number line that you drew on the board and show the jumps for making up:
 - $28 + 2 = 30$
 - $25 + 5 = 30$



- Show that there are MANY ways you can take two jumps to get from 0 to 30 - each of these pairs is a *family fact* of 30.
- Ask: *Can we find family facts of 40 and 50?* (Remember that there are plenty of family facts for 30, 40 and 50.)
- Draw number lines from 0–50 to illustrate some of the family facts.
- Use a number line labelled in 5s this time to illustrate some of the family facts of 50.



Lesson 11: Activity 1: Whole class activity.

Write the following on the board. Demonstrate the different strategies, using base ten blocks and flard cards. (Learners should choose the right method when they need to break down the numbers.)

<ul style="list-style-type: none"> • Method 1 $47 - 26 = \underline{\quad}$ $47 - 26$ $= (40 + 7) - (20 + 6)$ $= (40 - 20) + (7 - 6)$ $= 20 + 1 = 21$ <p>(Here you can subtract straight away without difficulty.)</p>	<p>Base ten blocks</p> <p>Take away 2 tens and 6 units.</p>	<p>Place value cards</p> <p>40 7</p> <p>Take away 2 tens and 6 units.</p> <p>20 1</p>
<ul style="list-style-type: none"> • Method 2 $42 - 26 = \underline{\quad}$ $= (40 + 2) - (20 + 6)$ $= (30 + 10 + 2) - (20 + 6)$ $= (30 - 20) + (12 - 6)$ $= 10 + 6$ $= 16$ <p>(Break down the tens in the 42 so that you can do the subtraction. Use the blocks to show how the breaking down happens.)</p>	<p>Take away 2 tens and 6 units. Make learners aware that you can take away 2 tens, but not 6 units. Learners swop one ten for 10 units.</p> <p>Now, take away 2 tens and 6 units.</p>	<p>40 2</p> <p>Take away 2 tens and 6 units. Make learners aware that you can take away 2 tens, but not 6 units. Learners swop the 40 for a 30 and 10 card.</p> <p>30 10 2</p> <p>Now, take away 2 tens and 6 units from 1 ten and 2 units.</p> <p>10 6</p>

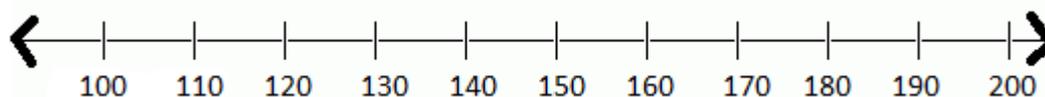
Activity 3

1. Work through the lesson activities briefly together as a group.
2. What terminology is used in the lesson activities?
3. What different strategies are covered in the excerpts from the lesson plans above?
4. How do the activities in the lessons build up the operational strategies of Grade 2 learners?
5. Discuss the different methods and how a teacher could use them.

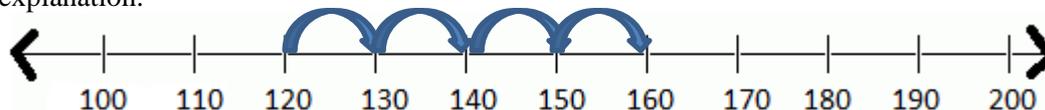
- Grade 3 Term 2 lessons 6, 7, 8, 9, 10 and 11 (Excerpts below are from lessons 9 and 10).

Lesson 9: Activity 1: Whole class activity. Addition using a number line.

- We use number lines to represent numbers and we can also use them to show number sentences.
- Draw a 100–200 number line (marked in 10s) on the board.



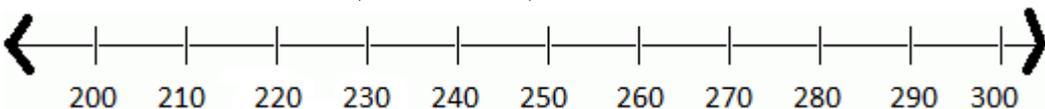
- Show the addition of 120 and 40 to your learners using the illustrations below to guide your explanation:



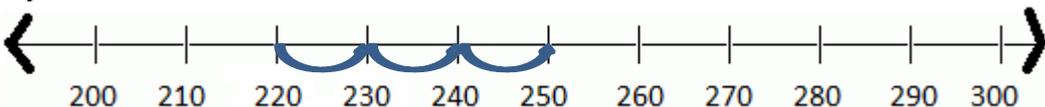
- Find 120 on the number line and put a dot there. Count 40 up from 120 (in 10s) and put a dot where you land. The answer to $120 + 40$ is 160, as seen on the number line.
- Discuss the use of the number line to show addition. For example try $115 + 35 = \underline{\quad}$.
- Point out that if the number line is labelled in 10s, we locate the 5s half way between each marker.

Lesson 9: Activity 2: Whole class activity. Subtraction using a number line.

- Draw a 200–300 number line (marked in 10s) on the board.



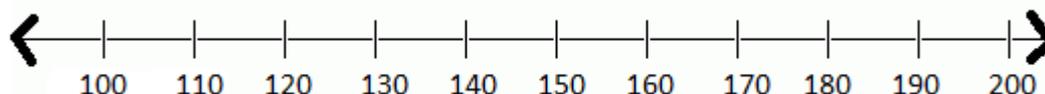
- Show the subtraction of 30 from 250 to your learners using the illustrations below to guide your explanation:



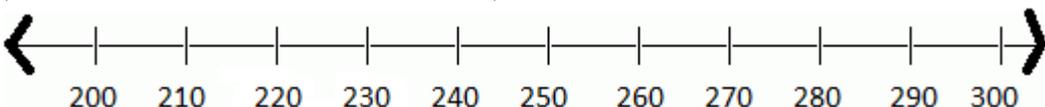
- Find 250 on the number line. Put a dot there. Count down 30 (in 10s) from 250 using the number line. Put a dot where you land. The answer to $250 - 30$ is 220, as can be seen on the number line.
- Discuss the use of the number line to show subtraction. – For example try $245 - 35 = \underline{\quad}$.
- Discuss again where to locate the 5s if the number line is labelled in 10s. (Half way between each marker.)

Lesson 10: Activity 2: Choose other pairs of numbers to add using the number line:

- Show different ways that this can be done, following the examples done above – this time on a number line with gradations marked.
- $145 + 28 =$ (Use a 100–200 number line.)
($145 + 28 = 145 + 20 + 8 = 165 + 8 = 173$)



- $203 + 67 =$ (Use a 200–300 number line.)
($203 + 67 = 203 + 60 + 7 = 263 + 7 = 270$)



Activity 4

1. Work through the lesson activities briefly together as a group.
2. How do the activities in the two lessons above develop the skill and understanding of Grade 3 learners?
3. Discuss the value of foundation phase learners developing a working knowledge of several different calculation strategies?

Activity 5

1. Grade 1 learners use counters when they need them to do operations. Draw displays and talk about how learners might work with these displays at different levels of understanding. Use the following two examples (or others):
 - a. $3 + 5 =$
 - b. $6 - 4 =$

In Grades 2 and 3 learners start to develop different strategies for doing calculations. The difference is that Grade 2 learners work with up to 2-digit numbers while Grade 3 learners need to be able to work with up to 3-digit numbers. Show how you could calculate each of the following using a number line, base ten blocks, base ten number cards (flard cards) or different written algorithm strategies:

2. Addition
 - a. $23 + 15 =$

 - b. $361 + 236 =$

 - c. $67 + 18 =$

 - d. $449 + 387 =$

 - e. Discuss the difference between questions (a and b) and questions (c and d).
3. Subtraction:
 - a. $75 - 34 =$

 - b. $428 - 126 =$

 - c. $54 - 39 =$

 - d. $275 - 199 =$

 - e. Discuss the difference between questions (a and b) and questions (c and d).

Session 3: Data Handling in the Foundation Phase

Materials in the lesson plans in Term 2 on Data Handling:

- *Grade 1 Term 2 lesson 21*
- *Grade 2 Term 2 lesson 34*
- *Grade 3 Term 2 lesson 34*

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.

Curriculum extract FP: Data Handling Grade 1-3 (page 34 and 35)

5.1 Collect and sort/organise objects: Collect and sort everyday physical objects. (Grade 1)

5.2 Represent sorted collection of objects: Draw a picture of collected objects. (Grade 1)

5.3 Discuss and report on sorted collection of objects: Give reasons for how collection was sorted;

- Answer questions about
 - how the sorting was done (process)
 - what the sorted collection looks like (product)
- Describe the collection and/drawing
- Explain how the collection was sorted

5.4 Collect and organise data

- Collect data about the class or school to answer questions posed by the teacher
- Organise data supplied by teacher or workbook/textbook
- Organise data in:
 - Lists, tally marks, tables

5.5 Represent data: Represent data in

- pictograph (limited to pictographs with one-to-one correspondence)
- bar graphs

5.6 Analyse and interpret data: Answer questions about data presented in

- pictographs (limited to pictographs with one-to-one correspondence)
- bar graphs

- *Grade 1 Term 2 lesson 21*

Activity 1: Learners work in pairs.

- Give the learners some of each of the following: Unifix blocks; counters; cut-out shapes; bottle tops.
- Ask the learners to sort the items any way they choose.
- Ask the learners to make drawings of their sorted collections.
- Ask the learners the following questions:
 - *How did you sort your items?* (Discuss all possible answers for ways of sorting.)
 - Answer: by SHAPE, e.g. Unifix, counters, cut-out shapes and bottle tops.
 - Another possible answer: by COLOUR e.g. red, blue, etc.
 - Another possible answer: by SIZE e.g. small, big.
- Ask the learners to explain what they notice about their groupings. Discuss all possible answers.
 - I have different numbers of each type of shape.
 - Ask *How many of each shape do you have?* (I have 5 Unifix blocks and 7 cut-out shapes etc.)
 - Ask *Which shape do you have more/less of?* (I have more bottle tops than counters etc.)
- Ask the learners to sort their items again in a different way.
- Ask the same questions about the sorting methods and the groupings.

Activity 6

1. Work through the lesson activities briefly together as a group.
2. What is the core skill/knowledge being taught in this Grade 1 lesson?
3. What CAPS content is present in this lesson?
4. How are learners asked to analyse what they have done in the activity?
5. What variation is provided in activity 1?

- *Grade 2 Term 2 lesson 34*

Activity 1: Learners work in groups.

Learners cut out pictures of different people (men, woman, boys, girls, and babies) from magazines. They should cut out a total of 20 different pictures with a few of each of the following in their cut-outs:

- Men
- Women
- Boys
- Girls
- Babies

Each group counts how many pictures they have in each category.

- They might not all have the same numbers of pictures.
- Ask them to count their own pictures – the total number of pictures they should all get is 20 – that was your instruction.

Activity 2: Whole class activity.

- Draw a pictograph of one of the groups' sorted data. (Pick one group.)

Number of people				
Men	Women	Boys	Girls	Babies

Key: One circle = 1 person

- Allow the learners to assist you while you draw the pictograph.
- Remember to include topic and pictograph key.
- Ask learners questions about the dataset that you used, such as:
 - *How many boys are there?*
 - *How many girls are there?*
 - *Are there more boys than girls (or girls than boys)?*
 - *How many women did you cut out?*
 - *Did you cut out more children or adults?*
 - Etc.
- This is to develop their skills of graph interpretation.

Activity 7

1. Work through the lesson activities briefly together as a group.
2. What is the core skill/knowledge being taught in this Grade 2 lesson?
3. What CAPS content is present in this lesson?
4. How does the activity allow independent activity on the part of the learners?
5. What variation is provided for in the activity and how are the teachers expected to deal with it?

Activity 1: Group work: Sort data. Steps are given in the lesson plan to allow for data collection and sorting.

Activity 2:

- Transfer data into a table format.
- Learners draw tables in their mathematics books. Show them how to transfer the data from the baskets to the tables.

Colour of the t-shirts	Number of t-shirts
green	6
yellow	10
blue	8
pink	12

Activity 3: Whole class discussion.

- Represent the data in a bar graph. Take the learners through each of the following steps to do so.

1	Draw the axes of the graph.	
2	Label the axes. Point out that the spaces between the numbers should be the same. The spaces between the colours should also be the same.	
3	Remind learners that a story has a title. <i>So what do you think the title of a bar graph should be?</i> (Our class's favourite t-shirt colours.) <i>Where will you write the title of the graph? Above or below the graph?</i>	Our class's favourite t-shirt colours
4	Represent data on the bar graph by drawing the bars. The height of the bars needs to match the number of t-shirts. <i>We have 6 green t-shirts, so how will we represent this on the bar graph?</i> (Look at the numbers on the vertical axis with the numbers and match this.)	Our class's favourite t-shirt colours
5	Do the same for all the other t-shirts.	Our class's favourite t-shirt colours
6	Learners analyse the data by answering questions such as a) <i>What is the most popular colour for t-shirts in our class?</i> (Pink.) b) <i>Which colour do the fewest children like?</i> (Green.) c) <i>Do more learners like yellow or blue?</i> (Yellow.) d) <i>By how many more?</i> (Two.) e) <i>How many children are there in our class?</i> (36) f) <i>Is there anything else that you can tell me about the graph?</i> (E.g. Nobody likes black t-shirts.)	

Activity 8

1. Work through the lesson activities briefly together as a group.
2. What is the core skill/knowledge being taught in this Grade 3 lesson?
3. What CAPS content is present in this lesson?
4. What is the focus of the lesson?
5. What skills/knowledge are being consolidated in the lesson?
6. What CAPS content items were not covered in the three lessons that you have analysed?

These are some additional questions to assist the HoD to have professional, supportive conversations on the teachers' reflections on the tracker each week. Try **selecting from these questions** in discussion with the teacher to prompt deeper reflection – or ask teachers to discuss **some of the question** in pairs.

A: SOME ADDITIONAL QUESTIONS TO GUIDE REFLECTION AND DISCUSSION ON CURRICULUM COVERAGE

CURRICULUM COVERAGE means covering everything set in CAPS for the year. If learners do not cover what they need to this year, they will fall further behind next year.

1. Reflecting on Learner support:

- 1.1. Which of the learners were able to understand the content quickly this week? What can I do to extend the knowledge and skills of these learners?
- 1.2. Which of the learners have not yet understood the content this week? What can I do to support the knowledge and skill development of these learners?
- 1.3. Are there ways in which I can let the more able learners work more independently to give me time with the learners who are not keeping up?

2. Reflecting on Use of Time:

- 2.1. Did I use all my lesson time for teaching? Were there activities that took time away from learning (classroom organisation, discipline, handing back work, late coming, writing on the board, managing textbooks and material)? How can I increase the time I have for teaching and learning in every lesson?
- 2.2. Are there particular learners who are periodically absent which means I must repeat material for them? What can I do about that?

3. Reflecting on Use of Homework

- 3.1. Did all the learners do the homework? What can I do to encourage learners to complete their homework?
- 3.2. Did I make good use of homework to consolidate learning?
- 3.3. What can I do to improve this?

4. Reflecting on CAPS and curriculum coverage:

- 4.1. Is the prior knowledge of my learners ready for the CAPS content for this week?
- 4.2. If not, where in CAPS was the prior learning for this content covered (this year or last year)?
- 4.3. If learners are already behind, what can I do to fill in gaps or cover work not done that is needed for this week's work.
- 4.4. What actions can I take to make sure that I cover the key concepts and content for this term in CAPS so that the class can complete the curriculum this year? Which topics or skills do I need to prioritise?
- 4.5. The ANA will assess the performance of learners against the course content that they should have covered in the grade. Are there any critical areas of content that the learners in my class must have the opportunity to learn this term?

5. Reflecting on Teacher support:

- 5.1. Are there any colleagues who can assist me?
- 5.2. What feedback can I give my colleagues in the grades before me about the particular knowledge gaps the learners in this grade are experiencing? Are there any lessons I can point out to them?
- 5.3. What teaching strategies did I use to teach these difficult topics which I could share with my colleagues who will be teaching these topics this year?
- 5.4. What would I need to tell my colleagues who will teach my weak learners in the next grade about the gaps that are worrying me?

B: SOME ADDITIONAL QUESTIONS TO GUIDE REFLECTION AND DISCUSSION ON A LESSON

1. Reflecting on individual learners and inclusion

- 1.1 How many of my learners were really involved? Can I name the ones who weren't?
- 1.2 Did the learners who I expected to do well, do well? Why/ why not?
- 1.3 Which concepts did the learners find hard? Was this the same for all the learners who struggled? How many learners struggled with the same concept?
- 1.4 What do I think are the main reasons for some learners struggling with these particular concepts or skills?
- 1.5 What can I do to support learners who did not manage the work, or to extend the knowledge and skills of those who did so easily?
- 1.6 Did some learners struggle to see the board? Should I move some learners so they can hear and see better? Or to be able to monitor them better?

2. Reflecting on classroom atmosphere

- 2.1 What kind of classroom atmosphere did I create?
- 2.2 Are my students listening to each other? How many students had an opportunity to speak?
- 2.3 Did students participate actively throughout the lesson?
- 2.4 Were there learners who behaved badly? What can I do to solve this problem?

3. Reflecting on lesson purpose

- 3.1 Am I clear about the CAPS content and skills I was teaching in this lesson?
- 3.2 Did the purpose of the lesson succeed?
- 3.3 Did the learners reach a good understanding of the key concepts for the lesson?
 - 3.3.1 How do I know this? How did I check?
 - 3.3.2 Could they use the language expected from them? Could they write or talk about what was expected?
 - 3.3.3 Was I able to recognize an example of bad performance and example of good performance of the main activity learners need to complete in the lessons (or for their homework)
 - 3.3.4 What could be the main reasons for learners not understanding the key ideas or managing the key skills?
 - 3.3.5 What could I do differently next time next time to help them more effectively?
 - 3.3.6 What aspects of the work did learners manage really well? What could have contributed to this? What good practice should I remember to use again next time?

4. Reflecting on lesson structure

- 4.1 Did I build background knowledge for understanding the lesson and activating learners' prior knowledge?
 - 4.1.1 What background knowledge and skills did I assume students were bringing to the lesson?
 - 4.1.2 Did I make sure that I covered all the vocabulary that was needed to understand key concepts in this lesson?
- 4.2 Did the activities follow each other in a logical way, building knowledge and understanding and skills step by step?
- 4.3 Did activities last the right length of time? Was the pace of the lesson right?

5. Reflecting on lesson preparation

- 5.1 Was my preparation for the lesson adequate?
 - 5.1.1. Did I have all the necessary resources? Is there any resource I would use when I teach this lesson again?
 - 5.1.2. Had I thought through the content so that I understood it fully and so that I could teach it effectively?
 - 5.1.3. Was the lesson plan detailed enough?
 - 5.1.4. Did I need more knowledge of the content? Where could I find out more about the content for this lesson?
- 5.2 Did I correctly anticipate the areas/ concepts that the learners would find difficult? Which ones were they? Were my assumptions about learners' background knowledge and skills accurate? Can I state these?
- 5.3 Can I explain where these concepts connect with the previous / next unit of lesson? Did I build on content, product or process from previous lessons? How does this lesson scaffold the learning for the next lesson?
- 5.4 Did the learners cope with the amount work set for the day? E.g. Did they finish the classwork? Was there enough work to keep learners engaged for the allocated time? Was their classwork done adequately?
- 5.5 Was the homework planned? Was it essential to the learning process? What quality of work did learners do the day before? How can I encourage learners to do the homework, and to do work of good quality?

