PARTICIPANT'S HANDOUT

2016 TRAINING WORKSHOP NO.7

MATHEMATICS

FOUNDATION PHASE

PILO
IMPROVING LEARNER PERFORMANCE

education

Department:
Education
PROVINCE OF KWAZULU-NATAL

Foundation phase
Just-in-Time Training Workshop 7
July/August 2016

Participants' Handout

Maths

Jika iMfundo
what I do matters

Endorsed by:

SADTU
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Educating Our Nation

Jika iMfundo
Foundation Phase JIT
Workshop 7 Mathematics: July/August 2016
Workshop guide for participants

In this workshop participants will find out more about the teaching of number patterns, space and shape and assessment in the Jika iMfundo FP Maths materials.

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.

Workshop plan
8.00 – 8.30 – Arrival and distribution of materials for the workshop
8.30 – 10.30 – Session 1: Language across the curriculum – maths vocabulary in the topic of Number Patterns (2 hours = 120 min)
10.30-11.00 – Break
11.00-12.30 – Session 2: Assessment in the toolkit – Content context: Number Patterns and number lines (1 hour = 60 min)
12.30 – 13.30 – Session 3: Space and shape (1 ½ hours = 90 min)

Session 1: Language across the curriculum – maths vocabulary in *Number Patterns*

In this session the following lesson plans from the Term 3 Jika iMfundo FP Maths materials are relevant:

- *Grade 1 Term 3 lessons 27, 28, 30 and 31.*
- *Grade 2 Term 3 lessons 22 and 23.*
- *Grade 3 Term 3 lessons 20 and 21.*

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.

Mathematics teaching needs to *keep the focus on the mathematics*, but language is used to communicate ideas in maths, together with real objects, gestures and drawings, written words and symbols. So mathematics teaching cannot be separated from language – both spoken and written. In the Foundation Phase learners are introduced to many basic mathematical concepts and at the same time to the language which they will use to express these ideas. They will be learning many of the same words in their language lessons at the same time as they learn about them in their mathematics lessons. These two learning encounters should complement each other.

The toolkit has a dictionary that was developed using the mathematical lesson vocabulary. The dictionary is bilingual. ***Refer to the extract from the dictionary at the end of this guide for the following activities.***

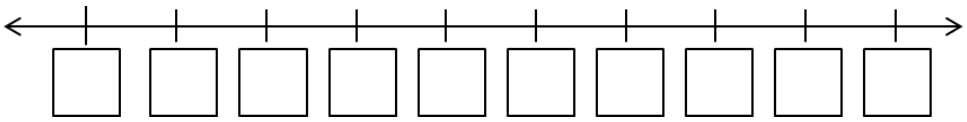
Activity 1
Discuss the following questions in your group. Use the dictionary extract to help you.

1. Think about the words “between” and “extend”. How would you use the following methods to explain the meanings of these words to your learners?
    a. A gesture.
    b. Real object(s).
    c. A drawing.
    d. A verbal explanation.
    e. A written explanation.
2. Compare your ideas, thinking about the following:
    a. Did you find it easier to explain the word “between” or “extend”? If so, why?
    b. In what way do gestures/objects/drawings/verbal/written explanations differ? How do the different methods complement each other?
3. Are the words ‘between’ and ‘extend’ used only in mathematics or are they also used more generally? Where and how?

In the CAPS there are separate content focus times for Mathematics and Language but in fact there is an overlap between the two areas. The *words* we use cut across all "topics". Many topics may be isolated for convenience, but, in reality, they intersect. In this session we will use the topic of ***Number Patterns*** to look more closely at the language used and the way in which it is presented in the lesson plan activities and the learner activities. We will think of ways in which this vocabulary can be consolidated and used across the curriculum. We will also look at the way in which the toolkit is designed to help you develop the mathematical vocabulary of the learners while you teach them the daily CAPS content.

Activity 2

1. Use the number line below to mark up the 2s number pattern, starting at zero. Explain to your group how to count along the number line.



2. Use a 200 number board to circle all of the multiples of 2. (*See page at the end of this guide for a copy of a 200 number board.*) Discuss the pattern(s) that you notice in the numbers you have circled.

3. Look at these numbers. *They may not be in order and all the numbers in the sequence might not be there. Which one does not belong to the pattern? Why do you say that?*
   - 210, 220, 203, 240, 250, 260 (203 does not belong to the 10s pattern)
   - 365, 375, 385, 397, 405 (397 does not belong to the 5s pattern)

Activity 3

1. Go through the following activities from the Grade 1, 2 and 3 lesson plans and circle all of the vocabulary which has a particular meaning as a mathematical term in the context of the planned topic, *Number Patterns*. The Lesson Vocabulary list has also been given. **Circle the number patterns terms**.

2. Look over the terms you have circled. These are words that may have a special meaning in the context of maths.
   a. Are the same words used in all three grades? What is the same/what is different?
   b. Compare the activities across the three grades. How do they show progression?

Grade 1 Term 3 Lesson 30

Lesson vocabulary: How many, groups, lots of, add, addition, plus, equals, remainder, number pattern, copy, extend, number sequence, number-line, multiple.

Activity 2: Learners work in groups of four.
- Practice number-line counting by placing or drawing a number line on the floor.
- Make sure the learners start by standing on zero.
- Learners then take one step forward to one, so that they understand that zero to one is one step.
- *Let us stand on zero and take two steps forward.*
- Learners say the number every time they step on a multiple of 2 (2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50).
- Show the learners the classwork activity which has number lines going up to 50 in 2s. Explain to them how they will do the activity then move on to the classwork.

Grade 2 Term 3 Lesson 23

Lesson vocabulary: Number patterns, number sequences, multiple(s), forwards, backwards, addition, subtraction, even numbers, odd numbers, copy, extend.

Activity 1: Learners work in pairs.

- Learners use a 0–200 number board.
- Ask them to count in 2s and place a counter on each number they count.
- They can put their fingers underneath each multiple as they count using the counters to guide them.
- Count backwards in multiples of 2 from 180 to 0, using the number line and pointing to the numbers as they count.
- Let learners now count in 2s, counting from any given number, such as 37. (39, 41, 43, 45, …)
- Remind learners that when counting in multiples of 2, we are counting even numbers – they all end on a multiple of 2. The other numbers are called odd numbers.
- Ask learners to show you which numbers will be between these pairs of numbers, while counting in twos:
  - 0 and 22 (2, 4, 6, 8, 10, 12, 14, 16, 18, 20)
  - 70 and 98 (72, 74, 76, 78, 80, 82, 84, 86, 88, 89, 90, 92, 94, 96)
  - 137 and 157 (139, 141, 143, 145, 147, 149, 151, 153, 155). etc.

Grade 3 Term 3 Lesson 20

Lesson Vocabulary: Number pattern, family, predictable, increasing, multiple, regular pattern, copy, extend, describe, before, after, left, right, sequence.

Activity 1: Whole class activity.

- Write down these numbers on the board.
- Ask: *Who can see which pattern these numbers belong to?*
  - 210, 220, 230, 240, 250, 260 (10s pattern)
  - 45, 50, 55, 60, 65, 70 (5s pattern)
  - 400, 402, 404, 406, 408, 410 (2s pattern)
- Now look at these numbers. *They may not be in order and all the numbers in the sequence might not be there. Which one does not belong to the pattern? Why do you say that?*
  - 210, 220, 203, 240, 250, 260 (203 does not belong to the 10s pattern)
  - 365, 375, 385, 397, 405 (397 does not belong to the 5s pattern)
  - 540, 250, 580, 130, 755 (755 does not belong to the 10s pattern)
  - 65, 44, 70, 55, 60, 50 (44 does not belong to the 5s pattern)
  - 400, 401, 420, 438, 428, 310 (401 does not belong to the 2s pattern)

Activity 4

1. How many of the terms that you identified are included in the dictionary list?
   a. Which words are not there and would you like to see them there?

   b. Read the given explanations (with diagrams/etc.). Are they helpful/not? Discuss.

2. If you did bring your dictionary with you, look through it and see if other words you identified are given and check the explanations.

3. The dictionary provides bilingual terminology explanations.
   a. Are both languages useful and if so how?

   b. How could a teacher use the dictionary in lesson planning and preparation?

   c. Is there a use for the dictionary in a classroom and if so in what way?

The CAPS gives information on curriculum coverage. This curriculum is dense with mathematical terminology. In the next activity we refer to the CAPS term 3 overview of the topic *Number Patterns* in FP.

Activity 5

1. Go through the extracts in the table below, which are from the CAPS overview for Term 3:
    a. C**ircle** all of the vocabulary relating to the topic, *Number Patterns*.
    b. How does the curriculum show progression in for content area?

2. Compare the use of the terms across the three grades in the CAPS, Lesson Plans and Dictionaries.
    a. How are they the same?

    b. How are they different?

CAPS overview extract

CAPS Grade 1 Term 3

Copy, extend and describe
Copy, extend and describe simple number sequences to at least 80. Sequences should show counting forwards and backwards in:

- 1s from any number between 1 and 80

Counting forwards in:

- 10s from any multiple of 10 between 0 and 80
- 5s from any multiple of 5 between 0 and 80
- 2s from any multiple of 2 between 0 and 80

Create and describe own patterns

- Create and describe own number patterns

CAPS Grade 2 Term 3

Copy, extend and describe
Copy, extend and describe simple number sequences to at least 180. Sequences should show counting forwards and backwards in:

- 1s from any number between 0 and 180
- 10s from any multiple of 10 between 0 and 180
- 5s from any multiple of 5 between 0 and 180
- 2s from any multiple of 2 between 0 and 180
- 3s from any multiple of 3 between 0 and 180
- 4s from any multiple of 4 between 0 and 180

Create own number patterns

CAPS Grade 3 Term 3

Copy, extend and describe
Copy, extend and describe simple number sequences to at least 750. Sequences should show counting forwards and backwards in:

- the intervals specified in Grade 2 with increased number ranges
- 20s,25s, 50s,100s to at least 1 000

Create and describe own number patterns

Session 2: Assessment in the toolkit – Content context: Number patterns and number lines.

The toolkit lesson plans and assessments are CAPS aligned. This session looks at a content topic across the lesson plans for Term 3 to show how the toolkit presents a useful combination of linked activities and assessment tasks to enable teachers to cover the curriculum and assess learners' progress on that content.

In this session the following lesson plans from the Term 3 Jika iMfundo FP Maths materials are relevant:

- *Grade 1 Term 3 lessons 1-5, 11-13, (27, 28, 30 and 31).*
- *Grade 2 Term 3 lessons 1, 3, 9-12, (22 and 23).*
- *Grade 3 Term 3 lessons 1-6, 16-18 (20 and 21).*

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 over view – task types and support

Activity 1

You have been using the toolkit for some time now and would have realized that it contains a lot of information. Use the following questions to guide you through the toolkit documents (tracker; lesson plans and resources) to recap "what's in it", for you.

1. How does the tracker assist with continuous assessment planning and implementation?
    a. Weekly?
    b. Over the term?
2. How does each lesson plan cater for continuous assessment?
3. Where are the printable resources that are provided as part of the toolkit?
4. List the printable resources that are useful for assessment.

Teaching and assessing the topic of Number Patterns using the toolkit

Activity 2 Continuous assessment

Weekly observation rubrics: Example *Grade 1 Term 3, Week 8*

Week 8 Assessment Activity: ORAL	
CAPS: Number operations and relationships – counting in 2s Activity: Count forwards in 2s from any multiple of 2 between 0 and 80	
Level (percentage)	**Criteria**
1 (0%–29%) 1 of 7 criteria	Cannot count verbally forwards and backwards in 2s to 80
2 (30%–39%) 2 of 7 criteria	Needs constant assistance to count verbally forwards and backwards in 2s to 80
3 (40%–49%) 3 of 7 criteria	Counts verbally forwards and backwards in 2s to 80 with some assistance
4 (50%–59%) 4 of 7 criteria	Counts verbally forwards but not backwards in 2s to 80
5 (60%–69%) 5 of 7 criteria	Counts verbally forwards and backwards in 2s to 80 but makes 1 error
6 (70%–79%) 6 of 7 criteria	Counts verbally independently forwards and backwards in 2s to 80
7 (80%–100%) 7 of 7 criteria	Independently and consistently counts verbally forwards and backwards 2s to 80 and beyond

1. What is the activity for which this rubric is provided? (Note: Should read "forwards and backwards".)
2. How does the activity relate to the topic of *Number Patterns*?
3. How would you use it to assess all of the learners in the class?
4. How would you record your observation results?

Activity 3 Written assessment

Grade 1 Assessment 2:

Question 3/Umbuzo 3 (1)

Complete the pattern:/Qedela iphethini:

0	5	10			

Memo

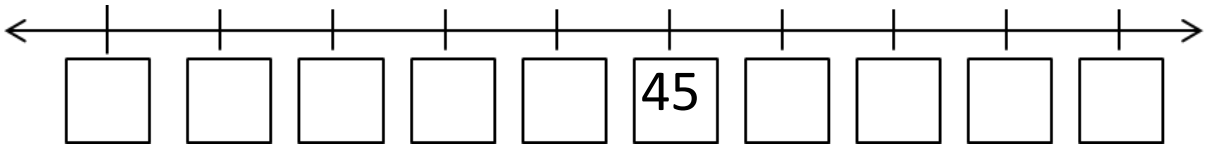
3. (1 mark for the correctly completed sequence) (Nikeza imaki eli-1 uma kulandelaniswe kahle) 15, 20, 25	(1)

Grade 2 Assessment 2:

Question 6/Umbuzo 6 (1)

Complete the number line, counting backwards in 5s, starting at 45.

Qedela umugqa wezinombolo, bese ubala uhlela ngaku-5, usukele ema-45.



Memo

6. (1 mark per correct answer – full completed sequence) (Nikeza imaki eli-1 empendulweni efanele – ukulandelanisa okugcwele) 45, 40, 35, 30, 25, 20	(1)

Grade 3 Assessment 2:

Question 7/Umbuzo 7 (1)

Write the next three numbers:/Bhala izinombolo ezintathu ezilandela lapha:

800, 750, 700, ____ , _____ , _____

Memo

7. (1 mark for the correct answer – all three numbers correct) (Nikeza imaki eli-1 empendulweni efanele – zontathu izinombolo makube ngezifanele) 650, 600, 550	(1)

1. Discuss the written assessments, guided by the following questions:
    a. Do the assessment questions relate to the content taught in the lesson plans?
    b. Does the memo assist you in the marking of the assessment? How?
    c. How are the written assessment task questions different from the continuous assessment activity tasks?
    d. How do the questions relate to the CAPS curriculum requirements for number patterns? (Refer to Session 1for the CAPS extract on *Number Patterns*.)
2. Design three different questions for Term 3 *Number Patterns* (including number lines) for each grade that you teach. Each question should be at a different level – from Level 1 to 3.

Session 3: Space and shape

In this session the following lesson plans from the Term 3 Jika iMfundo FP Maths materials are relevant:

- *Grade 1 Term 3 lessons 35-38 and 40.*
- *Grade 2 Term 3 lessons 13-18 and 36.*
- *Grade 3 Term 3 lessons 9-11 and 25-29.*

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.

Let's get physical	• Use your hands, arms and other objects to show examples of as many different shapes as you can. • Talk about the shapes your group has made. • Why do you think it is appropriate (as prescribed by CAPS) for young learners to study space shapes like balls, cones and boxes before they study circles, triangles and rectangles?

In this session we will look at shapes analytically. This means that we will look carefully at what makes up shapes, and what makes one shape the same as or different from another. Children look closely at shapes and don't always assume the things that we do when we look at abstract drawings. That is why it is good for teachers to think quite deeply about the make-up of geometric shapes. This session will ***deepen*** your knowledge of shapes ***beyond*** the FP curriculum requirements for learners. As teachers, you need to know the bigger picture in order to teach the "small stuff" first.

We study many different shapes whose names we need to learn and whose characteristics we need to know about. The table below is taken from the FP CAPS (p. 9). It gives the overview of the Geometry content coverage for the year for FP.

Table 2.1 Foundation Phase Mathematics Content Focus

MATHEMATICS CONTENT KNOWLEDGE		
Content Area	**General Content Focus**	**Foundation Phase Specific Content Focus**
Space and Shape (Geometry)	The study of Space and Shape improves understanding and appreciation of the pattern, precision, achievement and beauty in natural and cultural forms. It focuses on the • properties, relationships; • orientations, positions; and • transformations of two-dimensional shapes and three-dimensional objects.	In this phase learners focus on three-dimensional (3-D) objects, two-dimensional (2-D) shapes, position and directions. • Learners explore properties of 3-D objects and 2-D shapes by sorting, classifying, describing and naming them. • Learners draw shapes and build with objects. • Learners recognise and describe shapes and objects in their environment that resemble mathematical objects and shapes. • Learners describe the position of objects, themselves and others using the appropriate vocabulary. • Learners follow and give directions.

The Geometry curriculum allows learners to develop their spatial perception through studying shapes, their characteristics and the relationships between them. Working with concrete aids is important in Geometry – but developing the ability to visualise is just as important. The next activities are aimed to challenge you to think about shapes using visualisation.

Plane and space shapes

Here is some information about shapes – your Grade 1, 2 and 3 learners don't have to know all of this technical language, but it's useful for you to know

Polygons

At primary school, many polygons and other plane (*flat*) figures are studied. A **polygon** is a closed plane shape made only of *line segments*. The name **polygon** comes from the Greek words "poly" and "gonia" means "many-angled". The corners of a polygon are called **vertices**. The number of sides of a polygon corresponds with the number of angles of that polygon.

Polygons are **named** according to the **number of angles/sides** they have (they have the same number of corner angles as they have sides). You should know how to name and draw the following polygons:

- a polygon with three sides is a **triangle**; a polygon with four sides is a **quadrilateral**;
- a polygon with five sides is a **pentagon**; a polygon with six sides is a **hexagon**;
- a polygon with seven sides is a **heptagon**; a polygon with eight sides is an **octagon**;
- a polygon with nine sides is a **nonagon**; a polygon with ten sides is a **decagon**;
- a polygon with twelve sides is a **dodecagon**; and a polygon with twenty sides is an **icosagon**.

Remember that the word **polygon** is a general term and can be used for any of the above shapes, and any other closed shape made of only line-segments.

Regular polygons

Some polygons have all of their sides the same length and all of their internal angles the same size. These are known as **regular polygons**. The vertices of a regular polygon always lie on a circle. A square, for example, is a regular quadrilateral.

Activity 1

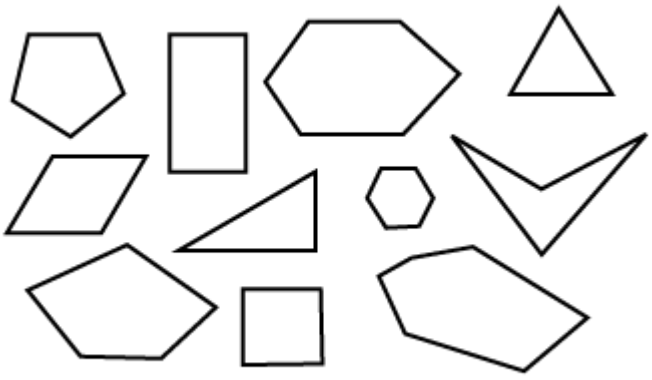
1. Draw three different types of each of the following shapes. Try to vary their sizes and orientations.
    a. Quadrilaterals

    b. Hexagons

    c. Triangles

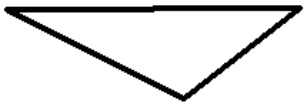
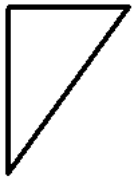
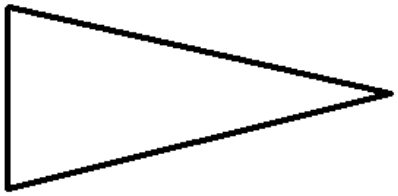
    d. Octagons

2. Look at the drawings of shapes below and circle all of the regular polygons.

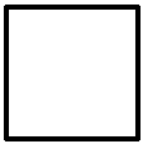


At school the triangles and quadrilaterals are studied in greater depth than other polygons. You therefore need to know all of their more specialised names and characteristics. FP learners only need to know the basic 2-D shape names (triangle, square, rectangle, circle). You might want to know more!

Types of triangles

Acute angled triangle (has three acute angles)	Obtuse angled triangle (has one acute angle)	Right angled triangle (has one right angle)
		
Equilateral triangle (three angles equal 60 and three sides of equal length)	Isosceles triangle (has two equal sized angles and two sides of equal length)	
		

Types of quadrilaterals

Square (regular quadrilateral) (four sides of equal length and four right angles)	Rectangle (two pairs of opposite sides equal in length and four right angles)	Parallelogram (two pairs of opposite sides parallel and equal in length)	Rhombus (all four sides equal in length
			
Kite (two adjacent pairs of sides equal in length	Trapezium (at least one pair of sides parallel)	Irregular quadrilateral (all sides different lengths)	
			

You do not just need to be able to name the shapes but you should be aware of the inter-relationships between the shapes.

Activity 2

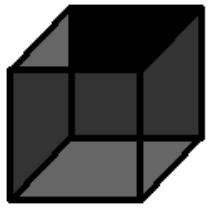
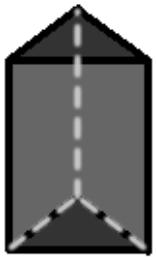
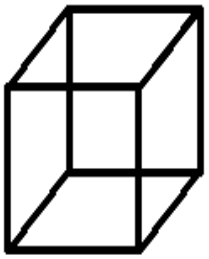
1. Draw a house/person/animal using only geometric shapes. You should use at least 3 different kinds of shapes in your drawing.

2. ENRICHMENT: *Refer to the information given above to answer these questions.* Most people know and agree that a rectangle can also be a parallelogram, but what about other relationships between shapes? Answer **SOMETIMES** or **ALWAYS** or **NEVER** to the following questions.
    a. When is a parallelogram a kite?
    b. When is a square a trapezium?
    c. When is a kite a square?
    d. When is a rectangle a parallelogram?
    e. When is a parallelogram a rhombus?
    f. When is a rectangle a trapezium?
    g. When is a rhombus a square?

3. Why is it a useful activity for learners to think about the relationships between shapes?

Space figures

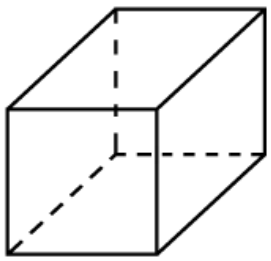
A figure that is not a plane figure is called a space figure. Space figures take up space; they do not lie flat in a plane. Space shapes are three dimensional (3-D). They have height which makes them protrude up above the plane in which they lie.

			
SOLID (shaded) e.g. wood	HOLLOW (lines and dashes) e.g. cardboard	FRAMEWORK (lines) e.g. wire	DISCRETE POINTS (dots) e.g. dust cloud

The closed space figures that are made entirely of plane surfaces (such as cardboard or paper) are called **polyhedra**. (Sometimes they are called **polyhedrons**). Polyhedra are made entirely of **faces** (the flat surfaces which are all polygonal regions), **edges** (where the faces meet, they are all line-segments), and **vertices** (where the edges meet, they are all points). We can **name** polyhedra according to the **number of faces** they have. You need to apply the terminology about polyhedra in next activity.

In FP learners have to be able to identify the 2-D faces of 3-D shapes (edges and vertices given as enrichment).

Activity 3



1. How many faces, edges and vertices does the shape have?

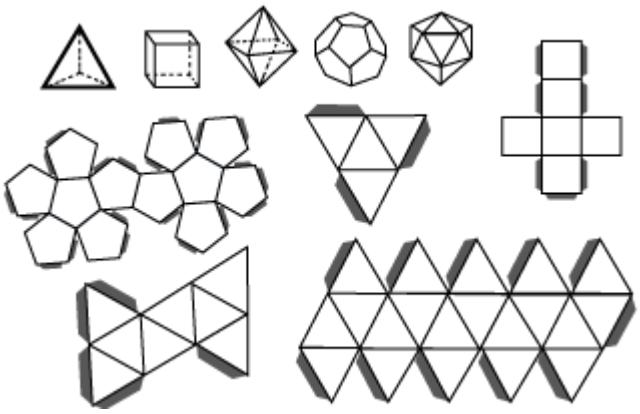
2. How would you name the shape? Give two possible names.

3. What dimension is the shape?

FOR INTEREST: Regular polyhedral

A **regular polyhedron** is any polyhedron with all of its faces the same size and interior angles the same size. Both conditions (**faces and interior angles**) need to be satisfied for a polyhedron to be regular. There are sketches of the five regular polyhedra and their nets below.

Faces: 4 6 8 12 20



There are several polyhedra, but if we look more closely at them, we can identify two special groups of polyhedra that can be more specifically classified: pyramids and prisms. These are shapes commonly spoken about in schools and so we take a closer look at them too.

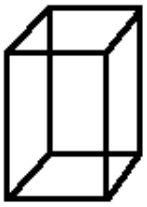
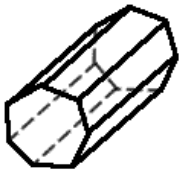
Pyramids

A pyramid is a polyhedron in which one face is called the base, and all of the other faces are triangular regions having a common vertex called the apex. The triangular faces are called lateral (side) faces. The BASE determines the kind of pyramid. We can name pyramids according to their base, or according to how many faces they have. For example, a pyramid with five faces is called a pentahedron, its base could be a square and so we can also call it a square pyramid. Here are a few examples of pyramids: they have been named according to their bases.

			
Triangular pyramid (solid)	Square pyramid (framework)	Pentagonal pyramid (surfaces)	Octagonal pyramid (surfaces)

Prisms

Prisms are the set of polyhedra with two faces called bases, which are congruent polygonal regions in parallel planes, and whose other faces, called lateral faces, are rectangular regions. As with pyramids, the BASES determine the kind of prism. We can also name prisms according to how many faces they have, and according to their bases. For example, a hexagonal prism has a hexagon (six-sided polygon) as its base. It has eight faces altogether and so is called an octahedron.

			
Triangular prism (solid)	Square prism (framework)	Pentagonal prism (surfaces)	Heptagonal prism (surfaces)

A **net** is a cut out (flat, 2-dimensional) shape that can be folded up into a space shape. We can make nets for all of the polyhedra. (There are also nets for some other space shapes which are not polyhedra.)

Activity 4

1. Name each of the pyramids and prisms drawn above in the following way:
    a. Name it according to the shape of base

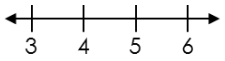
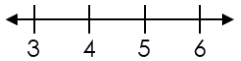
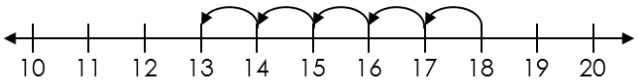
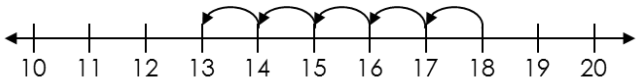
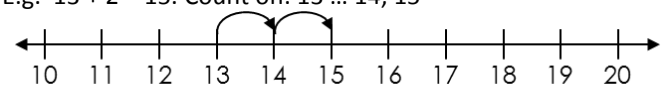
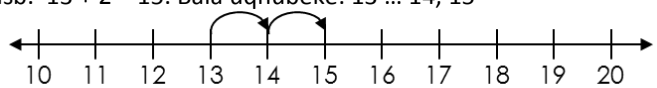
    b. Name it according to the number of faces it has

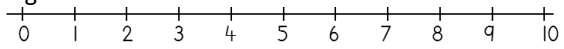
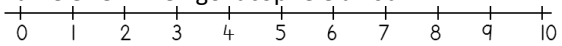
2. To sketch a pyramid, it is usually the easiest to draw the base, set the position of the apex, and drop down the edges where necessary. Draw each of the pyramids shown above yourself.

3. To sketch a prism, it is usually the easiest to draw the congruent bases, and then draw in the edges where necessary. Draw each of the pyramids shown above yourself.

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.

Session1: Extract from the Mathematics Dictionary - Number patterns (Grade 1 2 3)

Maths word	Explanation/diagram	Isihumusho	Umdwebo/incazelo
after (a number)	The number that comes next in a pattern. E.g. 5 comes after 4 if you are counting up.	emva (kwenombolo)	Inombolo elandelayo ephethinini. Isb. U-5 uza emva kuka-4 uma ubala ukhkuphuka.
backwards	In the reverse of the usual way. E.g. when you count backwards the numbers get smaller: 10, 9, 8, 7, …	ukuhlehla	Ukungayi lapho uvame ukuya khona. Isb. Uma ubala uhlehla izinombolo ziya ngokuya zincipha: 10, 9, 8, 7, …
before	A number that comes in front of another number, in the counting sequence. E.g. 5 comes *before* 6.	ngaphambili	Inombolo engaphambi kwenye inombolo, uma kubalwa. Isb. Isi-5 siza ngaphambili kwesi-6.
between	A number or numbers in the middle of two numbers. E.g. 4 and 5 are between 3 and 6. 	phakathi	Yinombolo noma izinombolo eziphakathi kwezinye izinombolo. Isb. Izinombolo 4 nenombolo 5 ziphakathi kwenombolo 3 no-6. 
count	Say numbers in the correct numerical order.	bala	Bala utsho amanani ngokokulandelana kwawo.
counting back	Counting back means counting down (backwards) from a given number. To subtract you can count back from the bigger number to the smaller number. E.g. 18 – 5 = 13. Count back: 18 … 17, 16, 15, 14, 13 	ukubala uhlehle	Ukubala uhlehle kusho ukubala uye phansi (emuva) usuke enombolweni oyinikiwe. Uma ususa ubala usuke enombolweni enkulu uye kwencane. Isb. 18 – 5 = 13. Bala uhlehle: 18 … 17, 16, 15, 14, 13 
counting in 10s, 50s, 100s	When you count in groups from a given number. E.g. count in 10s from 15: 15, 25, 35, 45, 55, 65 Count in 50s to 200: 50, 100, 150, 200.	ukubala ngama-10 50 100	Uma ubala ngamaqoqo usukela enombolweni onikezwe yona. Isb. Bala ngama-10 usuke e-15: 15, 25, 35, 45, 55, 65. Bala ngama-50 usukele ema-50 uye ema-200: 50, 100, 150, 200
counting on	Counting on means counting forwards from a given number. To add you can count on. Usually you count on from the bigger number. E.g. 13 + 2 = 15. Count on: 13 … 14, 15 	ukuqhubeka ubale	Ukubala uqhubeke kusho ukubala uye phambili usuke enombolweni oyinikiwe. Uma uhlanganisa ufana nomuntu obala aqhubeke. Ngokujwayelekile ubala usuke enombolweni enkulu. Isb. 13 + 2 = 15. Bala uqhubeke: 13 … 14, 15 
describe (a pattern)	To tell or write about a pattern to explain how the pattern is made up. E.g. 3, 5, 7, 9, … This pattern is made by starting at 3 and then adding 2 every time	chaza (iphethini)	Ukusho iphethini noma ukubhala ngalo ukuze kuchazwe ukuthi lakheke kanjani. Isb. 3, 5, 7, 9, … leli phethini lakhiwe ngokuqala ngo-3 bese kwengezwa oku-2 njalo nje kuze kufikwe endaweni elandelayo ephethinini.

Maths word	Explanation/diagram	Isihumusho	Umdwebo/incazelo
	to get to the next term in the pattern.		
extend (a pattern)	To add terms (numbers or shapes) to a given pattern. To do this you need to find the rule for the pattern. E.g. Extend the pattern by giving the next 3 terms (numbers) in the pattern: 4, 9, 14, … Rule: add 5 each time to get the next term. Extended pattern: 4, 9, 14, 19, 24, 29…	nweba (iphethini)	Ukwengeza iphethini. Kumele uthole umthetho olandelwe ukuze ukwazi ukwenza ukunweba ngale ndlela. Isb. Nweba iphethini ngokunikeza amanye amabanga alo ama-3 kulo lelo phethini: 4, 9, 14, … Umthetho: nweba ngoku-5 njalo nje ukuze ufinyelele ebangeni elilandelayo Nweba leli phethini: 4, 9, 14, 19, 24, 29…
interval	The gap between – it could be a time interval or an interval in numbers (the size of the gap in a number pattern. e.g. There is an interval of 1 hour between 3 o'clock and 4 o'clock. The interval in the number pattern 15, 30, 45, 60, … is 15.	phakathi nesikhathi	Siyaba nesikhathi esiphakathi kwezehlakalo ezimbili. Njengokuthi uma kunomcimbi owenzekayo, kuba nomculo phakathi kwenkulumo yesikhulumi kanye nenye inkulumo yesikhulumi.
multiple	The product when you multiply one whole number by another whole number. e.g. 6 is a multiple of 2; 25 is a multiple of 5.	okuphindaphindeka ngenombolo ethile	Umphumela wokuphindaphinda inombolo ephelele ngenye inombolo ephelele. Isb. Oku-6 kuphindaphindeka ngoku-2; 25 kuphinaphindeka ngoku-5.
multiples of 2	The products when you multiply whole numbers by 2. E.g. 2, 4, 6, 8, 10, 12, 14 are the first seven multiples of 2.	okuphindaphindeka ngo-2	Umphumela wokuphindaphinda izinombolo eziphelele ngo-2. Isb. 2, 4, 6, 8, 10, 12, 14 yizinombolo zokuqala eziyisi-7 eziphindaphindeka ngo-2.
multiples of 5	The products when you multiply whole numbers by 5. E.g. 5, 10, 15, 20, 25, 30, 35 are the first seven multiples of 5.	okuphindaphindeka ngo-5	Umphumela wokuphindaphinda izinombolo eziphelele ngo-5. Isb. 5, 10, 15, 20, 25, 30, 35 yizinombolo zokuqala eziyisi-7 eziphindaphindeka ngo-5.
number line	A number line is a line on which numbers can be placed, according to their value. The gaps on the number line must be drawn accurately. E.g: 	umugqa wezinombolo	Umugqa wezinombolo wumugqa onezinombolo ezibhalwe kuwo zalandelana ngokwezikhundla zazo. Izikhala ezinombolweni kumele zenziwe ngokucophelela. Isb. 
number pattern/ numeric pattern	A number / numeric pattern is another name for a number sequence or pattern.	Iphethini lezinombolo	Iphethini lezinombolo ngelinye igama lezinombolo ezilandelana ngandlela thile noma ezakha iphethini elithile.
number sequences	Number sequences are patterns of numbers that follow a rule. E.g. 2, 4, 6, 8, 10, 12, … are the even numbers, they are a sequence of numbers	Ukulandelana kwezinombolo	Lawa ngamaphethini ezinombolo alandela umthetho othile. Isb. 2, 4, 6, 8, 10, 12, … yizinombolo ezingelona ugweje ezilandelanayo.

Session 2 Activity3: 1–200 number board

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200