

Early Number Fun
Grade R programme
Session 1
19th April 2016



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Community of co-learners

- * Who are we in the SANCP?
- * What is our brief?
- * Who are we accountable to?

- * Like NICLE this is a partnership of teachers, teacher educators, researchers, district/ provincial specialists to form a learning/inquiry community
- * Our joint enterprise: to all learn about how to support South African Grade Rs better and how to support teachers better (both pre and inset)
- * Resources are research informed and curriculum informed - experience of them and adaptations are teacher informed - concrete testing and trialling, discussion and sharing
- * Meet once per month - greatest resource will be our interactions





Suggested dates

- * Tues 17th May (1-4pm)
- * Tue 14th June (1-4pm)
- * Tue 19th July (1-4pm)
- * Tue 23rd August (1-4pm)
- * Tue 20 September (1-4pm)
- * Venue - Post Grad Village
- * Similar dates for 2017



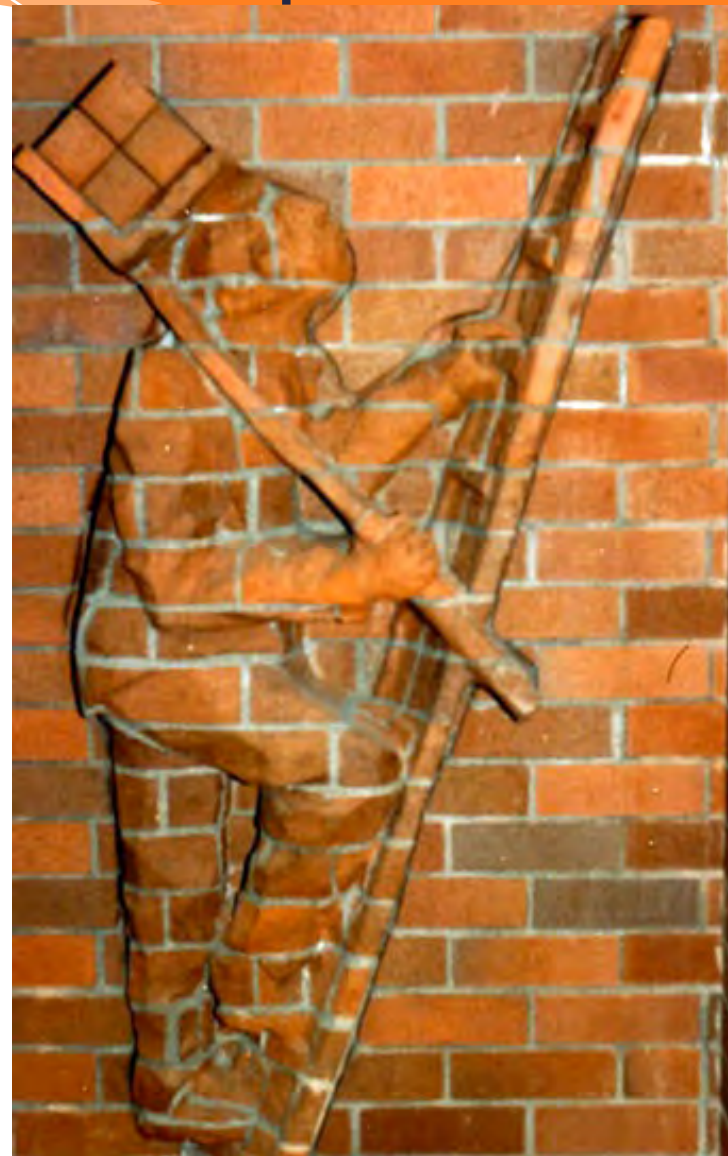


Getting to know you

- * School visits - meet & feel for physical spaces in classrooms
- * Know most schools from NICLE but not G R
- * Need more background and views - tailor ENF & support your trajectory
- * Questionnaire (30 minutes)
- * Teacher introductions



Pre-school is critical in closing the performance gap





Orientation document

- * CoPs and PLCs buzzword for supportive communities focused on learning
- * We all learn - common goal
- * our role to bring quality resources for engaging
- * Resources chosen - consulted widely (including teachers)
- * Practitioner and research informed
- * Program/resources transform with your input
- * tailor program according to feedback







Guiding assumptions/ Big ideas

- * Active construction
- * Build on existing knowledge
- * Activities should be at ‘cutting edge’
- * Activities should encourage
 - * language development
 - * play / imaginary play
 - * story telling
 - * movement activities





Lila video

- * building on learner knowledge and working at the cutting edge





Assumption: parents critical resource

- * Pilot parent program in 2016 with one school
- * Depending on feedback offer to all schools
- * Based on similar resource kit





Progressive numeracy learning

		Grade R	Gr R → 1	Gr 1 & 2	Gr 3 & 4	Gr 4 →
Cranfield et al.		Emergent numeracy	Learning to count and calculate	Calculate by structuring	Formal calculating	Counting and calculating up to 100
Wright et al. (LFIN)	EAS	0, 1, 2	3, 4	5		
	Structuring nos. 1 - 20	1, 2, 3				
	CPV				3	3
Buy & Treffers		Stages 1 to 4 Context bound - up to 4 objects Object bound - up to 10 objects Via symbolisation - unseen items/fingers	Stages 5 & 6 Count all Count on Count up to Count down	Stages 7 & 8 Stringing & splitting Doubles/halves Combining with 5 & 10 Partitions of 5 & 10		Stages 9 & 10 2-digit + and -
Buy & Treffers Visual progression				6 - 7 Calculate by structuring	8 Formal calculating	9 Count to 100 10 Calculate to 100
Representations		Tallies, finger patterns, dot patterns	Models of... Line, group, combination, part-part-whole			

Context-bound

- * Putting across “How Many” and comparison questions in such a way that they are embedded in the child’s world of experience.
- * Thus takes place in meaningful problem-related situations
- * Big push here is to present situations that encourage the child to:
 - * Count synchronously as a meaningful function
 - * order, compare, estimate,
 - * more, less, many, few, ‘add’, ‘take away’
- * Examples through circle time and in activity areas:
 - * **How old** - a birthday party cake where candles are lit one-by-one
 - * **What time is it** - counting by clock strikes
 - * **How high is the tower** - counting a stack of building blocks
 - * **How many children in the group** - counting to know how many for sweets etc

Object-bound

- * Putting across “How Many” and comparison questions that are related directly to concrete objects.
- * To progress from context-bound, gradually push the context into the background but the situation still remains available for those children who still need it
- * E.g. Shift birthday party question from “how old” to “how many candles”
- * Big push here is to present situations that encourage the child to:
 - * Count concrete objects synchronously as a meaningful function
 - * Some visible and some hidden via concealment games
 - * Lay out objects in an orderly way or pattern for recognition
 - * Order, compare, estimate,
 - * more, less, many
 - * Simple strategies for adding and taking away items

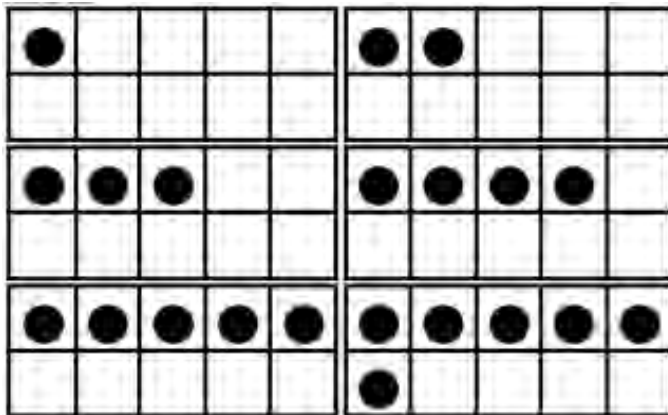
Pure counting

- * Transferring counting from objects to representations of the objects such as
 - * Fingers
 - * Dot patterns
 - * Concrete objects
 - * Tallies
 - * Number symbols
 - * All above except the number symbol contain something in a countable form.
- * Big push here is to:
 - * provide situations where the children can link countable items with the numeral form using flash cards and other resources.
 - * The objective is not to do arithmetical operations but rather to focus on the understanding of the what the numeral symbol means.
- * Continuing to work with visible and non visible items so that children start to imagine representations.

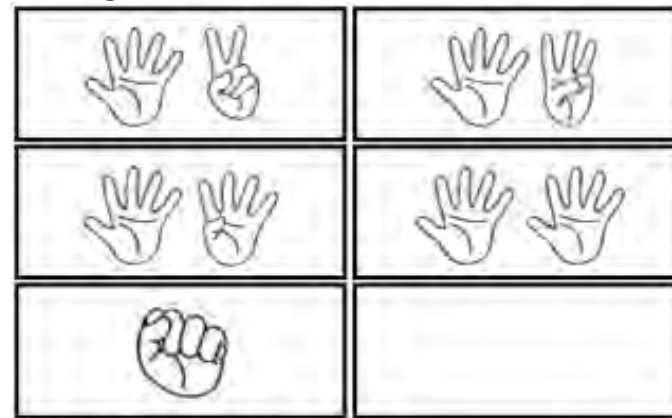


Key representations help to progress up the steps

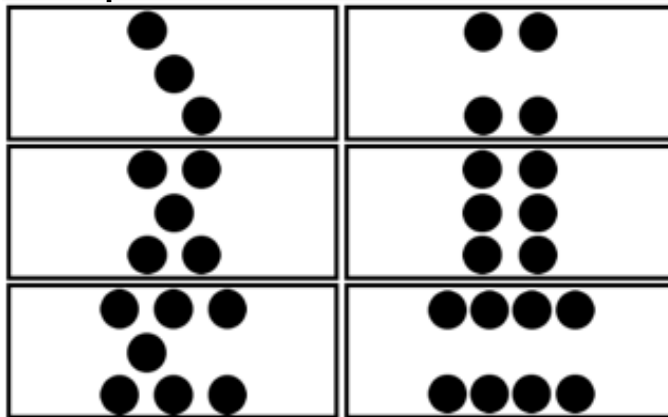
5 and 10-frames



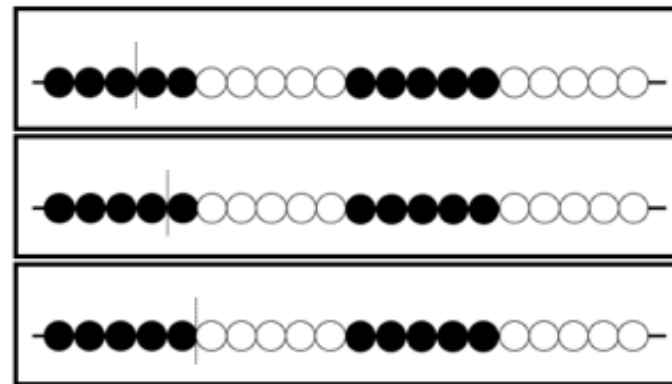
Fingers



Dot patterns



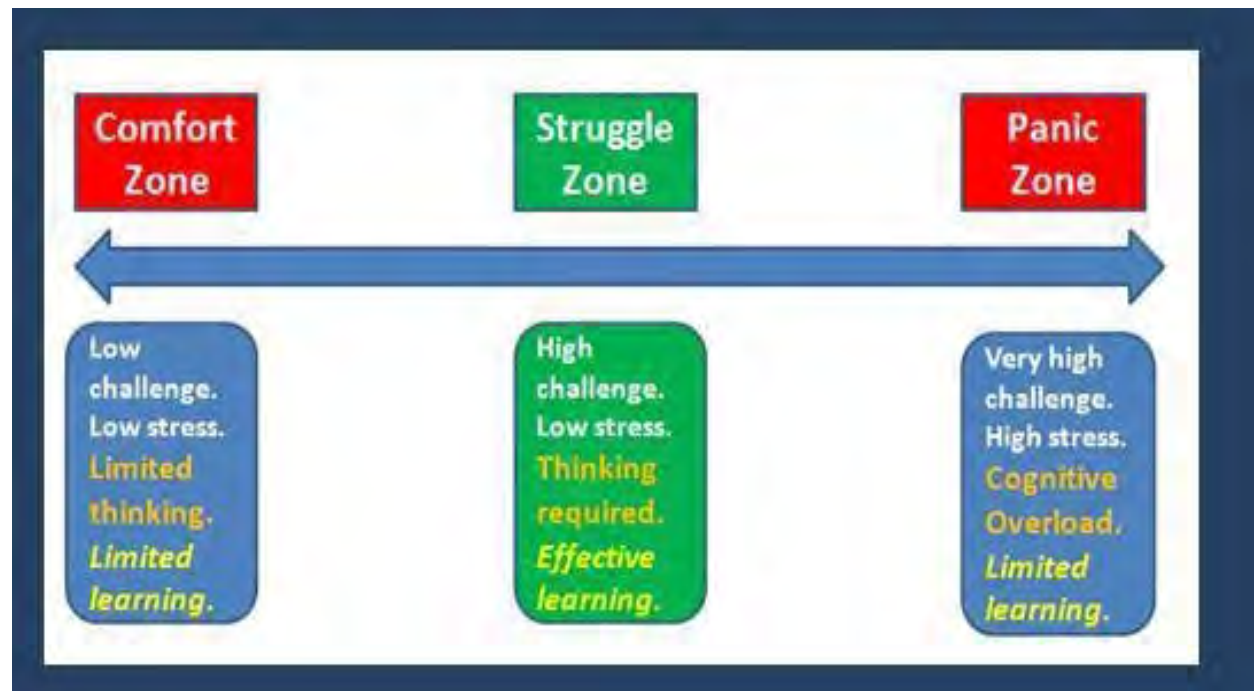
Bead strings





Emotions matter - but children must learn to enjoy a challenge

A teachers job is not to make all learning easy - its to help children rise to the challenges of learning and to enjoy the learning process with all the mistakes along the way



Growth mindset

Research on mindsets overwhelmingly strong

 <p>1. Persisting <i>Stick to it!</i> Persevering in task through to completion; remaining focused. Looking for ways to reach your goal when stuck. Not giving up.</p>	 <p>2. Managing Impulsivity <i>Take your time!</i> Thinking before acting; remaining calm, thoughtful and deliberative.</p>	 <p>3. Listening with understanding and empathy <i>Understand others!</i> Devoting mental energy to another person's thoughts and ideas; Make an effort to perceive another's point of view and emotions.</p>	 <p>4. Thinking flexibly <i>Look at it another way!</i> Being able to change perspectives, generate alternatives, consider options.</p>
 <p>5. Thinking about your thinking (Metacognition) <i>Know your knowing!</i> Being aware of your own thoughts, strategies, feelings and actions and their effects on others.</p>	 <p>6. Striving for accuracy <i>Check it again!</i> Always doing your best. Setting high standards. Checking and finding ways to improve constantly.</p>	 <p>7. Questioning and problem posing <i>How do you know?</i> Having a questioning attitude; knowing what data are needed & developing questioning strategies to produce those data. Finding problems to solve.</p>	 <p>8. Applying past knowledge to new situations <i>Use what you learn!</i> Accessing prior knowledge; transferring knowledge beyond the situation in which it was learned.</p>
 <p>9. Thinking & communicating with clarity and precision <i>Be clear!</i> Strive for accurate communication in both written and oral form; avoiding over-generalizations, distortions, deletions and exaggerations.</p>	 <p>10. Gather data through all senses <i>Use your natural pathways!</i> Pay attention to the world around you. Gather data through all the senses. taste, touch, smell, hearing and sight.</p>	 <p>11. Creating, imagining, and innovating <i>Try a different way!</i> Generating new and novel ideas, fluency, originality</p>	 <p>12. Responding with wonderment and awe <i>Have fun figuring it out!</i> Finding the world awesome, mysterious and being intrigued with phenomena and beauty.</p>
 <p>13. Taking responsible risks <i>Venture out!</i> Being adventuresome; living on the edge of one's competence. Try new things constantly.</p>	 <p>14. Finding humor <i>Laugh a little!</i> Finding the whimsical, incongruous and unexpected. Being able to laugh at one's self.</p>	 <p>15. Thinking interdependently <i>Work together!</i> Being able to work in and learn from others in reciprocal situations. Team work.</p>	 <p>16. Remaining open to continuous learning <i>Learn from experiences!</i> Having humility and pride when admitting we don't know; resisting complacency.</p>

Mindset posters for your classrooms

My
brain
grows
when
I think
hard



EARLY NUMBER FUN
0533
0533
SA
NUMERACY
CHAIR
PROJECT





Cognitive control (Executive functioning)

- * Neurological research on executive functioning informs many activities we have chosen
- * 3 key aspects - influence school readiness and performance more than IQ
 - * Working memory
 - * Inhibition
 - * Shifting attention





Example game for working memory

- * Here is a picture of 10 objects on a plate
- * You have 30 seconds to try to remember them without writing them down
- * **How many can you remember?**
- * Learners will use real objects that they bring from home
- * The game can be made harder by:
 - * More items
 - * Asking to remember colours, size, quantity...





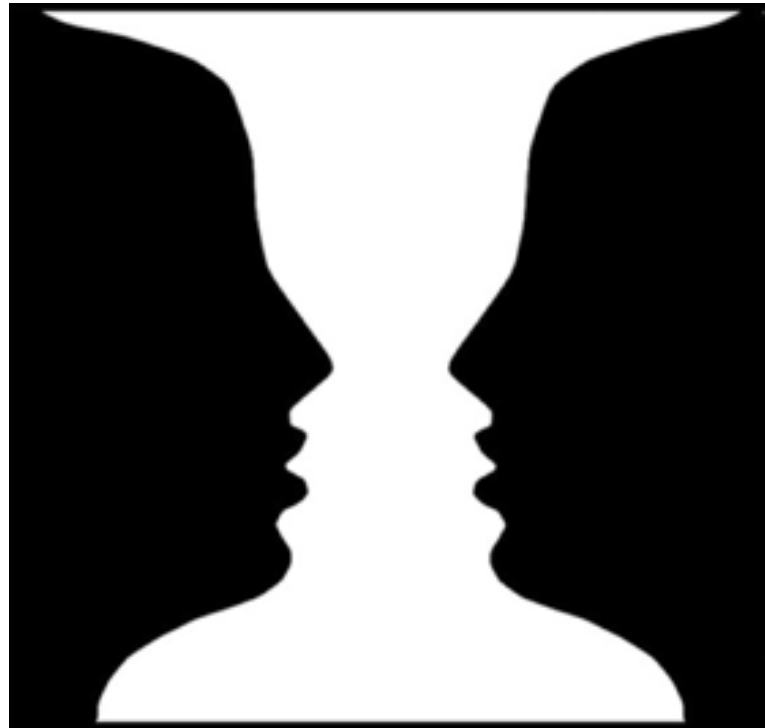


Example game for Inhibition

- * Simon says - change to isiXhosa or Afrikaans
- * Play it



Examples for Shifting attention



Rabbit or Duck?





How many ways can you sort a pack of cards?





Each month

- * **Resources** relating to each of the above aspects
- * **Teacher handbook** to build up into a library
- * This session resources have focused on those needed for assessment
 - * Focusing on learner progression is essential but can't be done without individual assessment





Assessment

- * Demo of Lebone learners teachers stand around us do it in groups with their clipboards

Assessment resource		Pegs		Pegs on a paper plate			
Learner Name	Verbal counting to 10	Count objects to...		Recognise 2-ness	Recognise 3-ness	Recognise many	Comments
		5	10				

Assessment resources	Learner's fingers					Big dice with dots			Numeral flashcards				Show 5-frame flash cards from 1 to 6				Comments
Learner Name	Show me fingers					Recognise dot patterns			Recognise numerals				Recognise 5-frame numbers				
	2	3	5	6	10	4	5	6	2	3	5	8	4	5	Most	least	

Assessment resources	Make pattern with 2 coloured pegs on paper plate e.g. Green and Red		Comments
Learner Name	Pattern 1 variable (GR/GR)	Pattern 2 variables (GRRR/GRRR)	



Ongoing research about what we are learning

- * Our accountability involves us sharing what we are learning about how to strengthen Grade R learning with others at conferences and through research and publications
- * All schools and teachers names are anonymous
- * We are researching whether the support we are giving and bringing helps
- * For this we will draw on questionnaires, interviews (occasional), classroom visits and learner assessment forms
- * NOT assessing you as teachers - researching how key resources and activities may or may not be helping



Fun game activity - Lion, lion what's the time

- * Make a lion, leopard or other scary creature mask
- * Materials:
 - * Paper plate, marker pens, elastic scissors, stapler
- * Children can make own and can be zebras or other in pretend play
- * Play game (can also use chalk on floor)





Next month: 17th May

- * Plastic box with range of other resources
BUT need to bring assessment sheets of
learners for our records
- * Travel well and we are really excited to be
partnering with you all!

