SA NUMERACY CHAIR PROJECT

NICLE SESSION ONE
NUMBER TALKS

FEBRUARY 2014

- Mathematics is a language, how do you learn a language?
- You learn to talk
- We heard about "Number Talks" from mathematical community
- We watched one to see what all the 'talk' is all about…

Our story… (1)

- Our thoughts:
  - These learners are used to talking about their thinking
  - These are small groups
  - Teacher is used to recording and notating
  - Space in the classroom
- Yaleka at SN:
  - Had she tried one of these?
  - Could we watch to see how learners respond and react?
  - We were invited to watch one
  - Grade 4 learners speaking in English (Gr 3 class from 2013)

Our story… (2)

Yaleka's talk using 30 dots

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- What worked well?
- What could be done differently next time?

Your feedback

- What worked well?
  - Questions
  - Learners did come up with different methods
  - Task at end of talk
- What could be done differently next time?
  - Increase the pace
  - Learners point to and verbalise their method
  - Teacher records, not the learners (as they try to be neat!)

Our thoughts

- Mel and Debbie then tried one with the learners
- Thinking about the things that could be done differently
- Read the Post Talk Reflection in your flip file as a guide for watching the next talk..

Our story …(3)

Debbie's talk using 10-frames

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- What's different?
- What worked well?
- What could be done differently next time?

Your feedback

- We were excited with the trialling process
- Could see some learners progressing through the talk
- Happy to now share it with you

Our story …(4)

The Talk Plan

Timing	Section of talk	
30 SECONDS	**Hand out cards to groups of learners**	
30 SECONDS	**Breathe and visualise**	• Close eyes and visualise the pattern / sum on the card
30 SECONDS	**How many and how do you see them? OR Can you solve this problem? Think about how you will explain how you got your answer**	• No touching (hands behind back) • No writing (except for large multiplication problems)
8 MINUTES	**Whole class talk**	• Use the PROMPT • Use QUESTIONS • TEACHER RECORDS VISUALLY (use coloured chalk if possible) • Keep all records up so learners can see while watching / listening to others and see if their method is same / different • Encourage use of hand signals
1 MINUTE	**Discussion of strategies**	• Discuss the strategies contributed • Which are more EFFICIENT? ACCURATE? • As a class agree on the 2 most efficient strategies as key strategies • Write **FINAL STRATEGIES ON FLIP CHART** to hang on class wall
30 SECONDS	**Recap of efficient strategies**	• Whole class to point and say the **2 MOST EFFICIENT STRATEGIES**
APPROX 11 MINUTES		

Why strategy talks?

During number talks, students are asked to communicate their thinking when presenting and justifying solutions to problems they solve mentally. These exchanges lead to the development of more accurate, efficient, and flexible strategies.

The heart of number talks is classroom conversations focused on making sense of mathematics

- CLARIFY thinking
- INVESTIGATE and apply mathematical relationships
- Build a REPERTOIRE of efficient strategies
- Make decisions about choosing EFFICIENT strategies for specific problems
- Consider and TEST other strategies to see if they are mathematically logical

Classroom environment and community

- Safe, comfortable, accepting
- Teacher practices "blank face"

Classroom discussions

- Use of hand signals
- All answers – correct and incorrect – are recorded

The teacher's role

- Move into roles of facilitator, questioner, listener, and learner
- Change question from, "What answer did you get?" to "**How did you solve this problem?**"

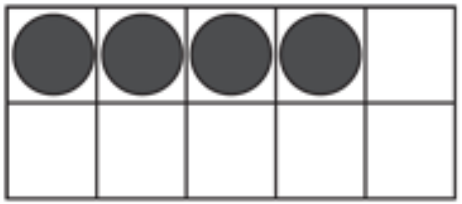
Role of mental math

- When students approach problems without paper and pencil, they are encouraged to rely on what they know and understand about the numbers and how they are interrelated.

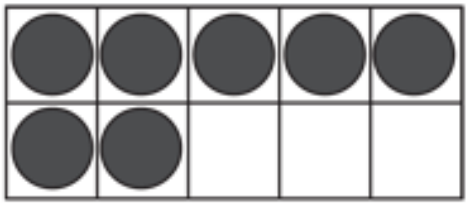
Purposeful computation problems

- Crafting problems that guide students to focus on mathematical relationships
- Carefully planning is necessary

Key Components of the talk



standard 4 on the ten-frame



standard 7 on the ten-frame

- A ten frame: a simple graphic tool that allows people to "see" numbers
- Understanding that numbers are composed of tens and ones is an important foundational concept
- A strong sense of "ten" is a prerequisite for place-value understanding and mental calculations
- If you want your learners to really know their number facts and not just become "better counters" have them work with the ten-frame

10-frames – why so important?

- In your groups:
  - Do one different number talk each as facilitator, others act as learners
  - Choose from examples in your flip file:
    - Dot cards
    - 10-frames
    - 10-frame multiplication
    - Addition
    - Subtraction
  - Take 12 minutes per talk
  - Record final methods on flip chart to hang on walls

Your turn…