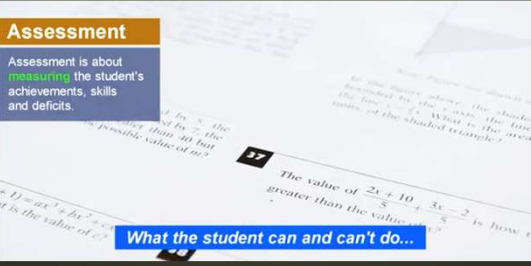


Assessment

Assessment is about **measuring** the student's achievements, skills and deficits.



What the student can and can't do...



Diagnosis

Diagnosis is about **understanding why** a student is not learning or why he / she is underachieving and should also lead to advice on how to teach the child.


Assessment or diagnosis?

Assessment is about **measuring** the student's achievements, skills and deficits.

Diagnosis is about **understanding why** a student is not learning or why he / she is underachieving and should also lead to advice on **how** to teach the child.

Diagnosis and intervention

Mabbott and Bisanz. (2008) JLD 41 (1) 15-28




'Children who experience difficulties in mathematics are a **heterogeneous** group...'

'**Diagnosis and intervention** requires tools that are useful for identifying the many reasons why children may perform poorly on standardized tests...'

Evaluation of a broad range of skills and knowledge...

Diagnosis and intervention

Zhou and Cheng. (2015)



'**Mathematical competence** is a constellation of abilities which might have different origins, and disabilities in mathematics would be diagnosed with different screening measures and successfully intervened using different approaches.'

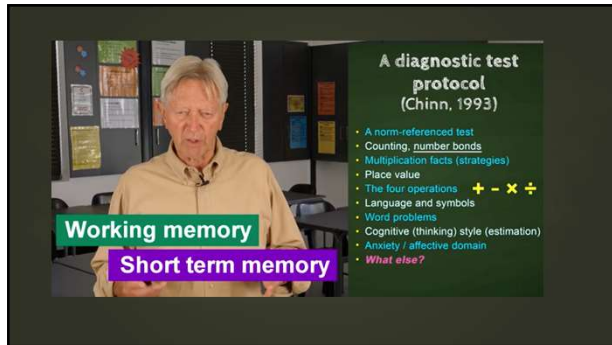
Learner skills (A reminder)



Your knowledge

Your experience

Your skills

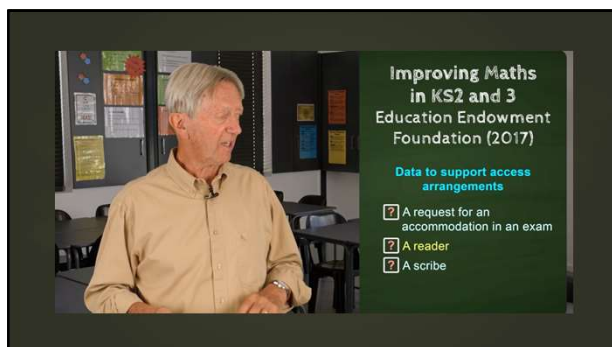


Working memory

Short term memory

A diagnostic test protocol (Chinn, 1993)

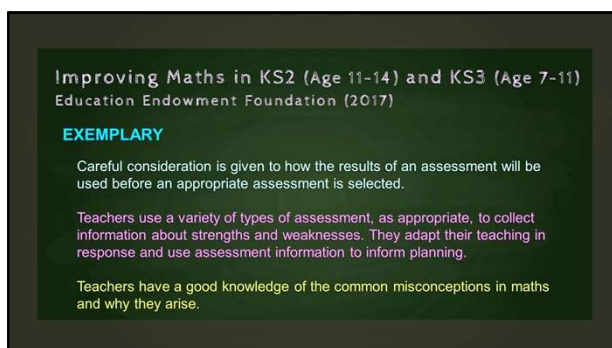
- A norm-referenced test
- Counting, number bonds
- Multiplication facts (strategies)
- Place value
- The four operations + - × ÷
- Language and symbols
- Word problems
- Cognitive (thinking) style (estimation)
- Anxiety / affective domain
- *What else?*



Improving Maths in KS2 and 3
 Education Endowment Foundation (2017)

Data to support access arrangements

- A request for an accommodation in an exam
- A reader
- A scribe



Improving Maths in KS2 (Age 11-14) and KS3 (Age 7-11)
 Education Endowment Foundation (2017)

EXEMPLARY

Careful consideration is given to how the results of an assessment will be used before an appropriate assessment is selected.

Teachers use a variety of types of assessment, as appropriate, to collect information about strengths and weaknesses. They adapt their teaching in response and use assessment information to inform planning.

Teachers have a good knowledge of the common misconceptions in maths and why they arise.

What are you assessing / diagnosing?

Why are you assessing / diagnosing?

How are you assessing / diagnosing?

How long have you got?

What else can you find?

**What mix of tests and activities?
 Online or clinical?**

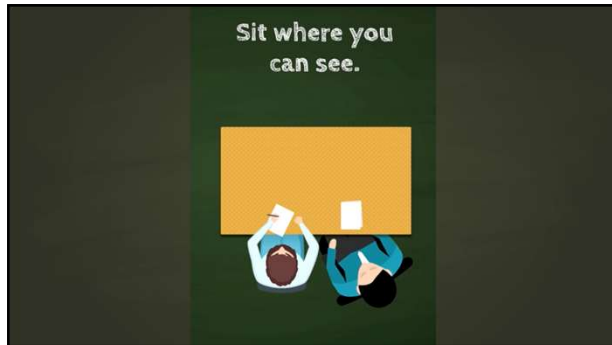
- ✓ A mix of informal and standardised: Formative and summative.
- ✓ Initial / informal / structured activities
- ✓ To include: subitizing, place value, vocabulary
- ✓ Retrieval of basic facts
- ✓ Speed of processing
- ✓ Word problems and problem solving
- ✓ Short-term and working memory
- ✓ Anxiety
- ✓ Cognitive style
- ✓ Achievement test (and error analysis)

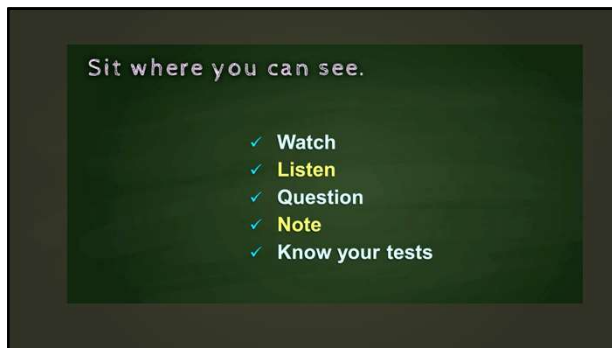
**Alan Kaufman
 (Weschler)**

'Be better than the test you use.'

Clinical approach. Dialogue.
 'How did you do that?'

Are you getting the accurate picture?








The dyscalculia checklist

- ✓ This is about the interaction between the demands of maths and the learner.
- ✓ It can be used as a straight Yes / No list or given with gradings, using a Likert Scale.
- ✓ It is based on commonly found behaviours. It is not about extrapolating.
- ✓ There is no 'score'.
- ✓ I want to know what the teacher knows.



The dyscalculia checklist



'More Trouble with Maths'
 (3rd edition 2020)
www.stevechinn.co.uk

37 'behaviours', such as:

- Makes big errors for multiplication facts, such as $6 \times 7 = 67$.
- 'Sees' numbers literally and not inter-related, for example, not realise 9 is 1 less than 10.

- ✓ IEP
- ✓ Goals and objectives
- ✓ There is no 'score'.

Visual / Vision / Hearing / Speaking

Checking the obvious.

Can they see / hear?

Presentation

Is the font writing clear?



Communication
 (Including STM)

**The 'warm-up'.
Setting the ethos.**

Basic questions.

Simple number concepts.

Intuitive grasp of numbers.
