

# Mathematics

What type of error did the learner make?

## Conclusion p 101 Blue Book

- **Mathematics is a complex subject** that assumes a skill in both numbers and language.
- Learners who have **language and reading difficulties** will very often experience difficulties with mathematics.
- **The assessment of mathematics requires careful analyses that identifies the difficulties being experienced** and the support that is required to address these areas of difficulty.

# Examples of errors

**Teachers must be detectives:**

- Don't just mark work wrong
- Look very carefully at the errors the learners are making
- Is it an accuracy error or a misunderstanding of the concept
- Try to work out what they did wrong
- Look for a pattern of errors
- Then its easier to support and correct the errors.



# What did the learner do?

1.  $9 + 7 = 15$        $6 + 5 = 12$        $16 - 9 = 8$

# Analysis of errors for support

1.  $9 + 7 = 15$  **16**     $6 + 5 = 12$  **11**     $16 - 9 = 8$  **7**

Counted inaccurately, doesn't know his bonds.

Support by checking how he counts

Go back to concrete objects or semi concrete

Encourage mastery of bonds.

# What did the learner do?

2.  $45 + 33 = 15$

$312 + 231 = 12$

# Analysis of errors

2.  $45 + 33 = 15$  78       $312 + 231 = 12$  543

$4 + 5 + 3 + 3 = 15$        $3 + 1+2+2+3+1 = 12$

Hasn't understood place value or method taught to calculate.

Reteach place value, method of calculating, have an example to follow on the board

# What did the learner do?

- $83 - 37 = 54$        $78 - 35 = 37$



# Analysis of errors

$$3. \quad 83 - 37 = 54 \quad 46$$

$$78 - 35 = 37 \quad 43$$

$$80 - 30 = 50$$

$$70 - 30 = 40$$

$$3 - 7 = 4$$

$$8 - 5 = 3$$

$$50 + 4 = 54$$

$$40 - 3 = 37$$

$$83 - 30 - 7 =$$

$$78 - 30 - 5 =$$

$$83 - 30 = 53$$

$$78 - 30 = 48$$

$$53 - 7 = 46$$

$$48 - 5 = 43$$

They have not understood regrouping and place value or method  
Reteach place value , demonstrate method, always say don't break up  
the first number. Liz Hooijer 2019

# What did the learner do?

251

74

+64

-56

891

22

# Analysis of errors

251

74

+64

-56

891

22

251

74

+ 64

- 56

315

18

# Characteristics of Mathematics that lead to difficulties. Page 90

1. **Right or Wrong** - judged as absolutely right or absolutely wrong
2. **Hierarchical nature of mathematics**- if one cannot succeed with a particular mathematical skill, the hierarchical nature of mathematics will mean that it is nearly impossible to succeed with many other mathematical skills as the skills build on each other.
3. **Accuracy and concentration**- success requires care and accuracy, be self-disciplined, patient and concentrate on the tasks.

4. **Abstractions**- deals with abstract concepts and relationships between these abstractions (concepts of measurement, such as volume, mass, and time)
5. **Symbols**- characteristic way of using symbols to represent and to manipulate abstract concepts
6. **Unstable truths and models**- instances where learners may learn 'truths' and develop models in their early experiences of number, that later on have to be unlearnt or modified as their experience widens.
7. **Complex language patterns**- ways of saying things that are not common in our everyday manner of speaking

8. **Sequencing** - sequential memory (the storage and recall of steps, events and other modes of serial ordering) as well as higher sequential thinking ( the interpretation of complex information and the use of serial order for logical thinking)
9. **Reading and language problems** - communication by way of written instructions
10. **Perceptual problems**- mathematical tasks requires confidence in handling of spatial concepts such as left, right, above, below, over and under

