

Mathematics

What type of error did the learner make?

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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 make 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.

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

Help Themba

- Using the bottle tops find a way to see if he can:
- Estimate number
- Count accurately
- Understand more and less
- Work out bond sums such as –


I have 3 how many more do I need to get to 10

7 and $4 = ?$

15 take away 9 $= ?$

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.

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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



Bonds of tens song

- 9 and 1 are number bonds
- 8 and 2 are friends
- 7 and 3
- 6 and 4
- 5 and 5 are twins