

Descriptor

- 5.4 interpret student data (Highlighted in yellow)

Student A: Lara

Grade/Year: 1

Date Interviewed: 26/03/2014

1. Growth Point Table

Domain	Assigned Growth Point
Counting	3
Place Value	2
Addition and Subtraction	2
Multiplication and Division	0

Comment [JV1]:

5.4 Interpret student data.
This is the data that I collected from the interview.
After evaluating the data I had to plan a lesson that would meet the students learning needs.

2. Nutshell Statement

Lara counts a set of objects, this shows one-to-one correspondence. Lara has a strong understanding of forward counting sequences to 113 and backward counting sequence from 23-10. Lara was able to name the number after a given whole number and also understand the one less principle which demonstrates that she has a good conservation of number. Lara appears to understand cardinality; this is evident when she counts on to work out simple addition problems and counts backwards to work out subtraction problems. She was able count from 0 by 10's, 5's and 2's; however unable to count by 3's and 7's from another number, her ability to count by 2's helped her solve multiplication problems. Lara was unable to work out what x more/less than y was this hinders her ability to work out addition and subtraction problems. Lara was unable to solve simple division problems mentally; although she was able to work the problems out using materials.

Lesson Plan

Lesson Title: Solving addition and subtraction problems.

Learning intention/s:

The student will represent and solve simple addition and subtraction problems by using a range of strategies such as counting on, adding ten, doubling, partitioning and rearranging parts.

Comment [JV2]:

5.4 Interpret student data.
After analysing Lara's mathematical knowledge, understanding and thinking, I planned a mathematics lesson that addresses a specific learning need.

e5: ENGAGE, EXPLORE

Lesson introduction

I will get Lara to sit at her desk. I will tell Lara a story and she has to work out the answer using the icy pole sticks (bundles of ten and single). "My family has eaten 14 ice creams this week, by the end of the week we will eat 11 more. How many ice creams did my family eat in a week?"

e5: EXPLORE, EXPLAIN, ELABORATE

Development/investigation

I would ask Lara to tell me the answer and how she got it.

"Can you tell me how many ice creams my family has eaten in a week?"

"How did you solve the problem?"

"What did you do first?"

I will ask Lara to make the number 43 using the icy pole sticks and how she got the answer.

"Can you make the number 43 using the icy pole sticks?"

"How did you work that out?"

I will then tell her to add 10 to 43 "If I add 10 more to 43 what would the answer be?"

"What did you do to get 53?"

I will introduce different terms such as plus, minus, the difference between, more than and less than. Lara will have to demonstrate the problems using the icy pole sticks.

"What is 83 plus 4?"

"What is 72 plus 10?"

"What is 10 less than 70?"

"What is 5 more than 26?"

"Can you tell me the answer for 6 less than 68?"

"What is 20 minus 2?"

"30 + 30?"

"What 23 + 12?"

"What is 32 minus 19?"

"What is the difference between 38 and 42?"

"What is the difference between 33 and 23?"

I will ask Lara questions so I understand what she is thinking throughout the lesson such as "How did you work that out?" "Why did you work it out like that?"

I use the Pirie-Kieren model to help Lara understand how to work out addition and subtraction problems. Lara uses icy pole sticks to help her solve the problems, I made many bundles of ten so she is able to visualise that one bundle represents ten and to help her count.

Adjusting the lesson

Lara may not understand the terms I am using. I will further explain the terms until she has an understand of what they mean. Eg: 20 more than 40 is 20 plus 40. Lara may find the task easy, I will then ask her more complex addition and subtraction problems to enhance her learning such as $72 + 34$ and what is the difference between 112 and 23.

e5: EXPLAIN, ELABORATE, EVALUATE

Making connections

I will assess Lara by observing her and asking her questions throughout the lesson so I know what she is thinking and how she got the answers. Such as, "How did you work that out?"

At the end of the lesson I will ask Lara "What have you learnt today?" "What was one thing you found difficult?" and "What was some things you learnt about solving addition and subtraction problems that could help you next time?"

Materials:

- Icy pole sticks

4. Lesson Rationale

I have chosen this task as Lara was unable to solve many addition and subtraction problems. This lesson is about solving addition and subtraction problems and representing them with icy pole sticks. Lara has to think of appropriate methods to solve these problems and decide what strategy she is going to use such as counting on, counting on or back to find the difference between two numbers, adding ten and doubling numbers (Reys et al, 2012). I use different terms when asking Lara questions so she is aware that there are many ways to ask a question. The terms I used include plus, minus, more/less than and difference between (Reys et al, 2012). Using different terms and encouraging her to use different strategies will help her work out problems in the future. Grade ones must construct addition or subtraction problems using materials as children count the objects to work out addition problems and take away to subtract (Fuson et al, 1997). Using appropriate materials is effective as students refer to images when working out addition and subtraction problems (Fuson et al, 1997). Zevenbergen et al (2004) states that making bundles of ten are an effective way to make counting easier, this is a reason why I have chosen to use icy pole sticks also because it is easy to subtract and add.

Student B: Ava

Grade/Year: 3

Date Interviewed: 26/03/2014

5. Growth Point Table

Domain	Assigned Growth Point
Counting	4
Place Value	3
Addition and Subtraction	4
Multiplication and Division	5

Comment [JV3]: Data that I collected from the interview.

Student's name: Chantal Disco and Rachel Kelly

Date: 4/04/2014

1. Nutshell Statement

Ava has a strong understanding of forward counting sequence to 113 and backwards counting sequence from 23-10. She was able to count from 0 by 10's, 5's and 2's, however unable to count by 10's, 5's 3's and 7's starting from another number. Her knowledge of skip counting by 2's, 5's and 10's enabled her to work out simple multiplication and division problems. Ava understood the one less principle and was able to name the number after and before a given whole number, this demonstrated that she has a good conservation of number. It is evident that Ava understands cardinality as she was able to count on to work out simple addition problems and count backwards to work out subtraction. Ava was able to work out problems with the number ten which demonstrated her knowledge of the place value; this also enabled her to work out simple addition and subtraction problems, however Ava was unable to work out complex addition and subtraction problems using multi-digit strategies.

7. Lesson Plan

Lesson Title: Place value to solve problems.

Learning intention/s:

The student will use place value to partition, rearrange and regroup numbers to assist her with solving addition problems.

Comment [JV4]:

5.4 Interpret student data
After analysing Ava's mathematical knowledge, understanding and thinking, I planned a mathematics lesson that addresses a specific learning need.

e5: ENGAGE, EXPLORE

Lesson introduction

I will get Ava to bring a chair in front of the interactive whiteboard. I will explain to her that we are going to be using "Little Monkey App" to help her work out addition problems. I will open the app and explain to her the features that the app has and how it works.

The app has base-ten blocks to help her solve addition problems. The app also contains a place value mat, a basket for trading and a calculator.

Ask Ava to think why there is a basket for trading.

"Why do you think there is a basket for trading?"

e5: EXPLORE, EXPLAIN, ELABORATE

Development/investigation

Ava will first be learning how to trade units. I will first explain to her that ten units is one ten, ten tens is one hundred and ten hundreds is one thousand.

I will do the first problem with her.

The first problem is $12 + 9$.

I will put one 10 in the tens column and 11 ones in the units column.

I will then ask Ava "Can you tell me what I have to trade?"

"Why do I have to trade 10 ones for a ten?"

"What will the answer be now?"

I will ask Ava to do the next question that shows 10 hundreds, 2 tens and 8 ones.

"What do you notice about the hundreds?"

"What do we have to trade and why?"

"Can you tell me the number?"

The next question shows 2 hundreds, 10 tens and 5 ones.

"By just looking at the amount of blocks, what do you think you will need to trade?"

"What is the number?"

The next section is working out problems without grouping.

I will get Ava to put the blocks in their correct column and put the answer on the calculator.

The problems are:

* $52 + 25$

* $522 + 301$

* $7104 + 1704$

* $1104 + 1505$

* $31 + 34 + 12$

The last section is working out problems that enable children to regroup.

The problems are:

* $1 + 19$

* $115 + 68$

* $592 + 10$

$*99+769$

$*848+476$

$*73+75+71$

Throughout the lesson I will ask her questions so I am aware of what she is thinking and how she gets the answer.

"Is the answer going to be more or less than one hundred/thousand?" "How are you going to work out the problem?" "How did you get that answer?"

This app is very effective as Ava is able to use the base ten blocks to help her solve the problems; she is then able to image what is happening and write the number in the calculator. This app relates to the Pirie-Kieren model.

Adjusting the lesson:

Ava may find it difficult working out the questions that need to be regrouped. I will advise Ava to put both the numbers in the columns first and do the trading last as it will be easier to identify what needs to be traded. If Ava is having trouble with a question I will direct her in the right spot without giving her the answer.

e5: EXPLAIN, ELABORATE, EVALUATE

Making connections

After the lesson I will ask Ava "What have you learnt from today's lesson?"

"Why do we need to trade and what is regrouping?"

Materials:

Interactive whiteboard.

8. Lesson Rationale

I have chosen the “Little Monkey App” as Ava was unable to solve complex addition and subtraction problems using multi-digit strategies. This app enables Ava to trade, group and regroup numbers to help her solve addition problems and help her work out strategies. Students need a lot of experience with the trading, grouping and regrouping in order for them to build relationships between numbers and place value (Zevenbergen et al, 2004). Learning how to trade and regroup takes place when students experiment with materials and practice, that is why I thought this app was excellent as Ava is able to use the base ten blocks to help her solve the problems (Reys et al, 2012). Children must have an understanding of place value in order for them to solve addition and subtraction problems. The use of base ten blocks helps children visualise what a number looks like and the place value mat is useful as it reminds the students what quantities are involved (Reys et al). The calculator is very effective as students can see what digits are changing and when (Reys et al, 2012). Throughout the lesson I ask many questions to help direct her mathematical thinking and to know what she is thinking (Numeracy Professional Development Projects, 2012).

References

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