# Observation Notes
## Place Value – Section B

### QUESTIONS

<table>
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<th>8. Reading Numerals</th>
<th>OBSERVATIONS</th>
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<td>Show the child number cards (green) one at a time. Discontinue at first difficulty.</td>
<td>• The order that the cards are presented is very important.</td>
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<td>a) Read these numbers: 3, 8, 36, 83, 18, 147, 407, 1847.</td>
<td>• Note any reversal problems when reading and writing numbers e.g. saying 63 for 36.</td>
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<td><strong>If the child has difficulty with any of 3, 8, 36, or 83, spread out the mauve cards with digits 0 to 9 face down on the table.</strong></td>
<td>• Students often have confusion with the teen numbers. Confusions may include saying 80 for 18 or a reversal saying 81 for 18.</td>
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<td>b) Pick a card and tell me the number you have taken.</td>
<td>• When students begin working with 3 digit numbers zeros can cause difficulties.</td>
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<td>After moving through the whole set, point to the ‘7’ card.</td>
<td>• Note how they say 1847 - Eighteen hundred and forty seven or One thousand eight hundred and forty seven. Explore if they can say it a different way.</td>
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<td>c) Get me this many teddies.</td>
<td><strong>REMEMBER TO DO PART B IF THEY HAVE DIFFICULTY WITH 3, 8, 36, OR 83.</strong></td>
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<th>9. Calculator Tasks</th>
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<td>(Hand the child the calculator.) Have you used a calculator before? Please turn it on.</td>
<td>• Take note of how they write the numbers, e.g. 47 may be 407, 60 may be confused with 16, 15 may be confused with 50, 724 may be 700204</td>
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<td>a) Type these numbers on the calculator (7, 47, 60, 15, 724, 105, 2469, 6023) (Stop when the child is not successful. Ask the child to clear the calculator between numbers.)</td>
<td><strong>REMEMBER TO DO THE SECOND PART OF THE TASK</strong></td>
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<td>b) Step 1: Pick any number from 2 to 9, and type it on the calculator. Read the number. (Don’t clear the calculator.) <strong>Step 2:</strong> Type in a different number from 2 to 9 (forming a 2-digit number). Read the number. <strong>Step 3:</strong> Type in a different number from 2 to 9 (giving a 3-digit number). Read the number. [Continue Step 4, Step 5, etc. until first difficulty]</td>
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10. Ordering Task

Based on the child’s success in Q8 and Q9, select the 1-, 2-, 3-, or 4-digit set of cards — Pick the number of digits for which the child has been completely successful to that point.

[Move up or down through the card sets depending upon success e.g. success with 2 digits, try 3. If unsuccessful with 2, try 1-digit cards etc. If child has had earlier difficulty with reading 1-digit numbers, there is little point in continuing the ordering task.]

Spread one set of cards out on the table. Do not read the numbers aloud.

a) 1-digit set (blue: 2, 5, 9)
b) 2-digit set (yellow: 19, 36, 74)
c) 3-digit set (pink: 97, 156, 403, 813)
d) 4-digit set (orange: 3569, 3659, 3956)

Here are some numbers. Order these numbers from smallest to largest… Please point to the largest… Please point to the smallest. (The child does not need to read the numbers, only point to them.)

- Do not read the numbers aloud. Students are only required to point to the largest and smallest, they are not required to read the numbers but some students will automatically read the numbers as they point to them.
- Some students may not comprehend the task and not understand how to order numbers from smallest to largest. Student may sort the cards into two groups – small numbers and large numbers.
- Note how students order the numbers. This can give some insight into the thinking and reasoning about how you order numbers, e.g. two digit set may order as 36, 74, 19. Reasoning might be: “19 is the largest because it has a nine in it and nine is the largest number of them all, 36 is the smallest number because it has a three in it and it is the smallest number of them all.” This student is using single digit thinking and applying it to two digit numbers.
- May be able to order two digit numbers but applies the thinking outlined above to three digit numbers.

11. Bundling Tasks

Ask the child to unpack the icy pole sticks. Here are some icy pole sticks in bundles of ten. (Offer the chance to check a bundle if it seems appropriate.) Here are some more loose ones. Show white card for 36.

a) Get me this many (icy pole) sticks.
If child starts to count all in ones, interrupt and ask them if they can do it a quicker way with the bundles.
b) Tell me how you worked that out.

- Have 8 bundles and twenty single icy pole sticks ready.
- Are they confident that there are 10 in a bundle?
- Consider the confidence with which they set about the task.
- Do they attempt to count items by ones and need to be prompted to do it a quicker way with the bundles?
- Do they ignore the prompt and continue in the same way?
- Do the use one bundle and then use single sticks
- Listen carefully to the language they use to explain:
  - Count 10, 20, 30 and 31, 32, 33, 34, 35, 36
  - 10, 20, 30 and 6 ones
  - 3 bundles and 6 ones
  - or 3 tens and 6 ones
- Record their explanation.

12. 2-Digit Chart Task

Show the child the mauve 2-digit chart card. Look at the way the numbers go.

a) Tell me which number goes in the blue square.
b) Please explain.

- Note how they solve the problem.
- Example strategies are
  - Count on from 54 by ones
  - Count on from 48 by tens because they recognized the counting pattern down the column is counting by 10
13. 3-Digit Chart Task

*Show the child the white 3-digit chart card.*

This is a different chart. Look at how these numbers go.

a) Tell me which number goes in the orange square.
b) Please explain.

**Only continue on now if the child has had complete success on all tasks involving 1, 2, 3, and 4 digit numbers in Q8–Q13. Otherwise, go to Section C.**

- Count back from 59 by ones or says the number before 59 is 58

- Note how they solve the problem.
- Example strategies are - Count on from 510 by 10s
  - Count on from 340 by 100s
  - Count back from 640 by 100
  - Count back from 560 by 10s
- Students may not look at the relationship between the numbers on the chart
- Note any patterns/relationships students observe & comment on:
  - the chart is not continuous across the row and onto next row
  - first row is 110, 120, 130, 140, 150, 160, 170, 180, 190
  - second row is 210, 220, 230, 240, 250, 260, 270, 280, 290

14. Ten More

*Show the child the white 2791 card. Pause for a couple of seconds for the child to look at the number.*

Tell me the number that is ten more than this number (2801).

- If students can think flexibly about numbers and the various ways numbers can be made it can assist them to solve this task.
- For example: 2791 can be thought of as 2 thousand 79 tens and 1 one. If we add another ten we have 2 thousand 80 tens and 1 one which is 2801

15. One Hundred Less

*Show the child the white 3027 card. Pause for a couple of seconds for the child to look at the number.*

Tell me the number that is 100 less than this number (2927).

- This task also requires students to think flexibly about numbers
- 3027 can be read as 3 thousand and twenty seven but also as 30 hundred and twenty seven. 100 less would be 29 hundred and twenty seven 2927
- Experiences with number expanders can help develop flexibility with numbers

16. Sorting the Capital Cities

*Show the child the pink chart with population figures. Here is a list of Australia’s capital cities (point to the names of the cities)... These numbers show many people live in each city.*

a) (point to the word Darwin)
How many people live in Darwin?
b) (point to the word Canberra)
How many people live in Canberra?
c) (point to the word Adelaide)
How many people live in Adelaide?
d) Please point to the city that has the third largest number of people.
e) How did you work that out?

- Students maybe able to read 5 digit, 6 digit or seven digit numbers but experience difficulty in applying what they know to solve the problem of which is the third largest city.
### 17. Interpreting the Number Line

*Show the child the orange page of number lines. Point to the first one, pointing to the relevant numbers as you read the question.*

a) The numbers on this line go from zero to 100 ... *(pointing to the little mark).* Round about what number would this be? *(acceptable range: 55 to 75)*.

b) The numbers on this line go from zero to 2000 ... *(pointing to the little mark).* Round about what number would this be? *(acceptable range: 400 to 600)*.

c) The numbers on this line go from 39 to 172 ... *(pointing to the little mark).* Round about what number would this be? *(acceptable range: 65 to 95)*.

d) The numbers on this line go from zero to one million ... *(pointing to the little mark).* Round about what number would this be? *(acceptable range: 700 000 to 800 000)*.

- This task helps to determine students understanding of where numbers sit in relationship to other numbers.
- The range for acceptable answers is quite generous.
- Note what answer they give and the thinking they use to arrive at their answer.