

Number Knowledge

Your child is currently working at the **Emergent Stage (0)** in Numeracy.

At this stage counting is the most important skill to master. Counting is learnt through repetition so take lots of opportunities to rote count (just saying the numbers) and counting objects. Help your child with counting up to 5. Model counting up to 10. Children can begin to explore the number of fingers on their hands and show numbers to 5 on them, perhaps more.

There are some key items of knowledge that your child needs to learn to help them progress through this stage. In the left hand column below are knowledge activities that your child should practise at home. The right hand column gives an example.

Number Identification	
Read numbers to 5	0 1 2 3 4 5 Read and identify these numbers on letter boxes, car number plates, road signs, telephone numbers, clock, microwave, video, etc. Practise showing numbers on fingers e.g. show me 5 fingers, 2 fingers.
Sequencing and Ordering	
Count forwards to 5	0 1 2 3 4 5 Count the number of toys, books, lollies, shoes, plates on the table, steps to their bedroom etc. Count how long it takes to do things e.g. walk to the door, get dressed.
Count backwards from 5	5 4 3 2 1 0
Say the number after any number (in the range 1-5)	3, 4, _
Say the number before any number (in the range 1-5)	_ , 4, 5
Order numbers to 5	5 3 1 2 4 reorders to 1, 2, 3, 4, 5

Activities to do at home with Emergent children (Stage 0):

At this stage counting is the most important skill to master. Counting is learnt through repetition so take lots of opportunities to rote count (just saying the numbers) and counting objects. Count with your child, and help them count right up to 100, or demonstrate it to them so that they hear the patterns of the numbers.

Children can begin to explore the number of fingers on their hands and show numbers to 5 on them, perhaps more.

Singing counting/nursery rhymes.

Using picture books for example "The hungry caterpillar"

Play "Snap" with playing cards.

Counting backwards and forwards to 5.

Number Knowledge

Your child is currently working at the **One to One Counting (1)** stage in Numeracy.

Children at this stage can count a small group of objects but have not yet learnt to add two numbers together. At this stage finger patterns to 10 are a very important tool to have (you always carry your fingers with you and don't need a container of counters). Support your child with these activities. They are not yet proficient at doing them totally themselves.

There are some key items of knowledge that your child needs to learn to help them progress through this stage. In the left hand column below are knowledge activities that your child should practise at home. The right hand column gives an example.

Number Identification	
Read and write numbers to 10	<p>7 6 8 4</p> <p>Read and identify these numbers on letter boxes, car number plates, road signs, telephone numbers, clock, microwave, video, etc.</p> <p>"Show me 5 fingers, show me seven fingers". Show the child 5, 3, 7, 8 fingers and see if they can tell you how many there are.</p>
Sequencing and Ordering	
Count forwards to 10	<p>1 2 3 4 5 → ... 10</p> <p>Count the number of toys, books, lollies, shoes, plates on the table, steps to their bedroom etc.</p>
Count backwards from 10	<p>10 9 8 7 6 → ... 0</p>
Say the number after any number (in the range 1 — 10)	<p>3, 4, _</p>
Say the number before any number (in the range 1 — 10)	<p>_ , 4, 5</p>
Order numbers to 10	<p>8 5 10 3 reorders to 3, 5, 8, 10</p>
Grouping	
Instantly recognise patterns to 5, including finger patterns	<p>Recognises the number of dots on dice. Recognises how many fingers a person shows on one hand.</p>

Activities to do at home with One to One Counting children (Stage 1):

These children can count a small group of objects but have not yet learnt to add two numbers together. At this stage finger patterns to 10 are a very important tool to have (you always carry your fingers with you and don't need a container of counters). Support your child with these activities. They are not yet ready to do them by themselves.

Continue becoming proficient at showing numbers to 10 on fingers. "Show me 5 fingers (high five!), show me 7 fingers," etc.

"Show me 3 fingers on one hand and 2 fingers on the other hand. How many altogether? (Help the child count from one to find out. They will not yet be able to start from 3 and count on).

Show the child 5, 3, 7, 8, etc. fingers on your hands and see if they can tell you how many there are. As they get more proficient at this they may recognize patterns instantly. Build up to five fingers on one hand first, then some more eg 7 will be one whole hand and 2 more. This helps the children see patterns more quickly and will link to the tens frames and other representations of numbers by building to 5 first at school.

Three big plates on the table and three small plates. How many plates altogether? (Count from one)

Practise counting up to 10 eg number rhymes "Ten Little Indians", 'Once I caught a fish alive" etc.

Practise counting down from 10 eg a rocket blasting off. "Ten Fat Sausages" song.

Look at the calendar to see the number today is. What number was it yesterday? What will it be tomorrow?

Look at the numbers on letter boxes.

Learn the child's phone number and read it as well.

Use everyday happenings to discuss numbers — counting people, food, cars in the driveway, wheels on the cars, etc.

Include subtraction with addition. We have 9 muffins. How many will be left when we have eaten 2? Find out by eating 2 muffins to see if you were right!

Halve and quarter oranges and apples and name the pieces. Count how many quarters there are in two apples when cut, etc.

Play Dominoes.

Number Knowledge

Your child is currently working at the **Counting From One on Materials (2)** stage in Numeracy.

At this stage children can solve addition and subtraction problems to 10 using their fingers, by counting from the first finger. They now need to learn to hold an image of these numbers in their head. They will need patience and support to do this.

There are some key items of knowledge that your child needs to learn to help them progress through this stage. In the left hand column below are knowledge activities that your child should practise at home. The right hand column gives an example.

Number Identification	
Read any number up to 20	17 6 18 9 11 Read and identify these numbers on letter boxes, car number plates, road signs, telephone numbers, clock, microwave, video, etc.
Sequencing and Ordering	
Count forwards from any number up to 20	14 15 16 17 → ... 20 Count the number of toys, books, lollies, shoes, plates on the table, steps to their bedroom etc.
Count backwards from any number up to 20	15 14 13 12 → ... 0
Say the number after any number in the range 1 — 20	6, 7, _ 11, 12, _
Say the number before any number in the range 1 — 20	_ , 4, 5 _ , 14, 15
	13 20 6 13 reorders to 6, 13, 17, 20
Basic Facts	
Know groupings within 5	3 and 2 4 and 1
Know groupings with 5	5 and 2 5 and 1 5 and 3
Fractions	
Read symbols for halves and quarters	$\frac{1}{2}$ $\frac{1}{4}$ Lead into time with $\frac{1}{2}$ and $\frac{1}{4}$ to/past on analogue clocks. Make meaningful connections eg half an apple, a quarter of the pizza, equal sharing between family members.

Activities to do at home with Counting From One on Materials children (Stage 2):

These children can now solve addition and subtraction problems to 10 using their fingers, by counting from the first finger. They now need to learn to hold an image of these numbers in their head. They will need patience and support to do this. They can now explore problems with bigger numbers — to 20, and start to group objects into tens to learn about our place value system.

Cut up a calendar so that you have the numbers to 31. Help the child to reassemble the numbers into the right order (you could start with smaller sections first eg 1 — 10, 1 — 20, etc.) Use a complete page of a month to check whether it's correct, or use a complete month to use as a guideline. Count the numbers and point to each number in order. Count backwards while pointing to the numbers. Cover up some numbers and see if the child can tell you what they are. E.g. cover 15. The child might count from one to find out, or just know. Uncover the number to see if they were right.

Use fingers to learn the groupings to 5. eg 2 and $_?$, 4 and $_?$, 3 and $_?$ And groupings to 10: "How many more do we need to make ten? We have 6; we have 8; we have 2, etc."

Pizza night! "We have 2 pizzas cut into 6 pieces each. How many pieces altogether? How many will the 4 of us have each if we share them evenly?" Do it with your child to find out.

"Nana gave us 20 lollies. Two people will get half each. How many is half of 20?" Share the lollies out to find out.

Use fingers to solve addition and subtraction problems to 10, then when really good at that, do it on your fingers behind your back. Check if you're right by looking at the fingers afterwards.

Number Knowledge

Your child is currently working at the **Counting From One by Imaging (3)** stage in Numeracy.

Children at this stage can now hold numbers in their heads without having to look at all the objects. They are learning to count on and back from the biggest number.

There are some key items of knowledge that your child needs to learn to help them progress through this stage. In the left hand column below are knowledge activities that your child should practise at home. The right hand column gives an example.

Number Identification	
Read any number up to 20	17 6 18 11
Sequencing and Ordering	
Count forwards from any number up to 20	9 10 11 12 13 → ...20
Count backwards from any number up to 20	16 15 14 13 → ... 0
Say the number after any number in the range 1 — 20	6, 7, _ 12,13, _
Say the number before any number in the range 1 — 20	_ , 11, 12 _ , 17, 18
Order numbers to 20	20 13 6 17 2 reorders to 2, 6, 13, 17, 20
Skip count forwards and backwards in 2's, 5's and 10's	2 4 6 8 10 → ... 20 5 10 15 20 → ... 50 10 20 30 40 → ... 100 30 25 20 15 → ... 0
Grouping / Place Value / Basic Facts	
Know groupings within 10	7 and 3 6 and 4
Instantly recognise patterns to 10 (Doubles and 5 based, including finger)	1+1 2+2 3+3 4+4 5+5 5+0 5+1 5+2 5+3 5+4
Know doubles to 10	1+1 2+2 3+3 4+4 5+5 6-3 8-4 4-2
Fractions	
Read symbols for halves and quarters	$\frac{1}{2}$ $\frac{1}{4}$ Lead into time with $\frac{1}{2}$ and $\frac{1}{4}$ to/past on analogue clocks. Make meaningful connections eg half an apple, a quarter of the pizza, equal sharing between family members.

Activities to do at home with Counting from One by Imaging children (Stage 3)

These children can now hold numbers in their heads without having to look at all the objects and need to learn to count on eg $9 + 4 = 10, 11, 12, 13$ (counting from the 9 now and not from one) and back down for subtraction eg $12 - 3 = 11, 10, 9$. It is important that the second number added is no bigger than 4 while learning this skill, as it is the optimum number that can be kept track of in their head. Children can keep track of what they're adding on either by their fingers or in their head.

Count with or for your child in 10s to 100, 2s to 20 or more, 5s to 50 or more. Then back again. Write the numbers down so the child can use them as a guide. Keep skip counting in 2's, 5's 10's etc. To work out three 2's, use fingers to track – 2, 4, 6. Or use pictures cut out and group into twos etc.

Board games eg snakes and ladders, etc help counting on because the child moves the counter from the number they're on (at earlier stages children want to move right back to one each time they have a turn as they don't yet understand about 6 more, 4 more, etc)

Bundle iceblock sticks with pipe cleaners into 10s, or haricot beans (uncooked!) into empty film canisters (these are often freely available at photo shops) to see how many there are. Count the 'tens' in tens and the ones left over in ones. Start with numbers up to 40 or so. Start calling the bundles of ten 'a ten'. "Let's get 30 sticks. How many bundles of 10 will that be? How many tens have we got here? How many is that altogether?"

Play a game with 2 dice and the iceblock sticks or haricot beans and film canisters. Roll the dice and work out how many has been thrown. Collect that number of sticks or beans. The rule is that every time you have ten they must be bundled up or put in the canister. Keep playing and see who gets the most. *(Often interesting talk will be generated by this game as the children work out who has got the most, how many more they need to have the same number, etc. As adults we can generate this talk without dominating the game too much, to keep the game fun.)*

Use contexts to practice maths equations:

- There are three people in our family, we have two people coming for tea – How many more chairs will we need? (No materials in front of the child – they need to picture what it will look like.)

Play card games such as "Memory".

Number Knowledge

Your child is currently working at the **Advanced Counting (4)** stage in Numeracy. (also known as Counting On)

There are some key items of knowledge that your child needs to learn to help them progress through this stage. In the left hand column below are knowledge activities that your child should practise at home. The right hand column gives an example.

Number Identification	
Read any number up to 100	17 26 38 44 65
Sequencing and Ordering	
Count forwards from any number up to 100	34 35 36 37 → ... 100
Count backwards from any number up to	75 74 73 72 → ...0
Say the number after and before any number 1 —100	54, 55, 56, _
	_ , 66, 65, 64
Order numbers to 100	41 27 64 58 33 reorders to 27, 33, 41, 58, 64
Count forwards and backwards in 2's, 5's and 10's to 100	2 4 6 8 → ... 100 5 10 15 20 25 → ...100 10 20 30 40 → ... 100 100 95 90 85 80 → 0
Grouping / Place Value	
Know number of 10's in decades	six 10's in 60 three 10's in 30
Know groupings within 20	17+3 4+16 11+9 5+15
Basic Facts	
Know 'teen' number facts	10 + 6 = 16 3 + 10 = 13 10 + ? = 18 ? + 10 = 11
Know multiples of 10 that add to 100	30 + 70 = 100 80 + 20 = 100
Know doubles and halves to 20	3+3 7+7 8-4 18-9 14-7 ½ of 6 ½ of 16
Know addition and subtraction facts to 10	4 + 3 = 7 7 + 1 = 8 8 - 5 = 3
Fractions	
Read unit fractions	½ ¼ 1/3 1/5 1/10 Lead into time with ½ and ¼ to/past on analogue clocks. Make meaningful connections e.g. half an apple, a quarter of the pizza, equal sharing between family members.

Activities to do at home with Advanced Counting children (Stage 4)

These children are now heading towards the transition to Part-Whole thinking. They may have trouble believing there are strategies beyond 'counting on as counting on is a milestone in itself and the children are often very proud they have reached this stage! We now need to let them know that they're very clever at counting on, but now they need to use the knowledge they have of numbers to try to use other clever ways to add numbers.

This is a very difficult and lengthy transition to make so remain patient and support the child's effort. It may take a while.

Part-Whole thinking is the ability to split numbers into parts and rejoin them to solve sums, without having to count on or back in ones, etc.

Eg working out $9 + 4$ by just knowing that $9 + 1 = 10$, so we can take one from the four and add it to the 9, making ten, then we'll have 3 left.

Or, $8 + 7 = 15$ because if/know that $8 + 8 = 16$ off by heart, I can take one off to get the answer, because 7 is one less than 8.

So in order to use these strategies the child needs to have certain knowledge

Know their doubles to 20 off by heart ($6 + 6$, $7 + 7$, $4 + 4$, etc.)

Know combinations to 10 off by heart ($7 + 3$, $2 + 8$, $9 + 1$, etc.)

Know $10 +$ some more off by heart ($10 + 2 = 12$, $10 + 6 = 16$, etc.)

When playing board games see if the child can work out which number they're going to land on without having to move space by space. Eg I'm on 26 and I've thrown a 5. Where will I land? Games such as Ludo and Backgammon can involve split moves. Eg instead of moving one counter 6, they could move another counter 4 and another 2.

Continue playing grouping to 10 games with iceblock sticks or haricot beans, etc (mentioned in 'Counting From One By Imaging' section.) Try using 3 dice to make adding the totals a little more challenging.

Board games could be played using two multi-sided dice so that the children are adding bigger numbers together.

Practise basic facts —doubles ($4 + 4$, $9 + 9$, etc.) and addition and subtraction facts to 10 (eg $6 + 4$, $2 + 8$, $5 - 3$ etc.)

Learn as family of facts:

$4 + 3 = 7$

$3 + 4 = 7$

$7 - 4 = 3$

$7 - 3 = 4$

Practise counting forwards to 100 and back to 0 again (or lower!), counting in 2s 5s 10s.

Use the odometer reading of the car to practise reading large numbers. See how many kilometers were travelled on a long trip.

Use contexts to practice maths equations especially with money:

- I've got 50 cents, I get 20 more cents – how much have I got? (50, 60, 70)
- I've got \$27, my sister has \$32 – How much more has she got? (27, 28, 29, 30, 31, 32 or 32, 31, 30, 29, 28, 27)
- I have 21 lollies that I will share between three of us – how many do we get each? (may need materials)

Number Knowledge

Your child is currently working at the **Early Additive (5)** stage in Numeracy.

There are some key items of knowledge that your child needs to learn to help them progress through this stage. In the left hand column below are knowledge activities that your child should practise at home. The right hand column gives an example.

Number Identification	
Read any number up to 1,000	333 479 983 561 600
Sequencing and Ordering	
Count forwards and backwards by 1's, 10's and 100's in the range 0-1,000	245 255 265 → ...1,000 700 600 500 → ... 0
Say the number 1 more than, 10 more than, 100 more than	712, 713, 714, _ 428, 438, 448, _ 512, 612, 712, _
Say the number 1 less than, 10 less than, 100 less than	_ , 184, 185, 186 _ , 345, 355, 365 _ , 465, 565, 665
Order numbers to 1,000	400 512 389 754 126 reorders to 126, 389, 400, 512, 754
Skip count forwards and backwards in 3's (as well as in 2's, 5's and 10's)	3 6 9 12 → ...30 30 27 21 18 → ...0
Fractions	
Know symbols for the most common fractions, including at least halves, quarters, thirds, fifths & tenths	$\frac{1}{2}$ $\frac{1}{4}$ etc.
Order fractions with the same denominators	$\frac{3}{5}$ $\frac{4}{5}$ $\frac{1}{5}$ $\frac{2}{5}$ reorders to $\frac{1}{5}$, $\frac{2}{5}$, $\frac{3}{5}$, $\frac{4}{5}$
Grouping / Place Value	
Know groupings of 10's in a 3 digit number	327 = 32 tens 500 = 50 tens
Know groupings to 100, particularly multiples of 5	43 and 57 28 and 72 25 and 75 40 and 60
Round 3 digit numbers to the nearest 10 or 100	561 rounded to the nearest 10 is 560 and to the nearest 100 is 600
Basic Facts	
Know addition facts to 20 and subtraction facts to 10	$7 + 8 = 15$ $6 + 14 = 20$ $7 - 3 = 4$ $9 - 6 = 3$
Know multiples of 100 that add to 1,000	400 and 600 800 and 200
Know multiplication and division facts for x2, x5, x10	$5 \times 2 = 10$ $16 \div 8 = 2$ $7 \times 5 = 35$ $50 \div 5 = 10$ $8 \times 10 = 80$ $30 \div 10 = 3$

Activities to do at home with Early Additive children (Stage 5):

Early Additive children have now become capable of part-whole thinking. Part-Whole thinking is the ability to split numbers into parts and rejoin them to solve sums, without having to count on or back in ones, etc.

Eg working out $9 + 4$ by just knowing that $9 + 1 = 10$, so we can take one from the four and add it to the 9, making ten, then we'll have 3 left.

Or, $8 + 7 = 15$ because if I know that $8 + 8 = 16$ off by heart, I can take one off to get the answer, because 7 is one less than 8.

Car journeys — we've travelled 25 km today. If we travel that far tomorrow, how far will we have gone? If we'd stopped 8 km back, what would the odometer reading be? (Children at this stage might mentally solve the problem by using $25 - 5 - 3 = 17$. Taking away 5 first takes us to a 'tidy' number of 20, then their basic fact knowledge should help them know that $20 - 3 = 17$. Because they are part-whole thinkers they know that the 8 can be split into 5 and 3 to make working out the problem easier.)

Explain to your child the strategies you are using to work things out as they occur. You may be surprised by the number of mental strategies you have. See if your child can use your strategy and you use theirs. See if they can think of other ways it could be worked out. E.g. when shopping, you may have bought something for \$12 and something for \$9. How would you work out the total in your head? You may know that \$12 and \$8 is \$20, then one more is \$21. Or that $\$9 + \$9 = \$18$, and \$3 more is \$21.

Children at this stage need to learn a lot about the Base Ten nature of our number system. Continue playing grouping to 10 games with ice-block sticks or haricot beans, etc (as mentioned in 'Counting From One By Imaging' hand out). Try using 3 dice to make adding the totals a little more challenging.

Continue checking doubles to 20 ($4 + 4$, $9 + 9$, $14 - 7$ etc.) have been remembered and facts to 20 (eg $16 + 4$, $2 + 12$, $9 + 11$, $17 - 4$).

Practise automatically knowing facts from the 2, 5 and 10 times tables (\times and \div). Learn them as family of facts. Use flash cards to help with this.

$5 \times 4 = 20$

$4 \times 5 = ?$

$20 \div 4 = ?$

$20 \div 5 = ?$

Talk about the link between basic facts and fractions (using common fractions)

eg. $5 \times 4 = 20$ so $\frac{1}{4}$ of 20 = 5 $\frac{1}{5}$ of 20 = 4

Begin to learn counting patterns and groupings for the others eg 3's, 4's etc. forwards and backwards.

Take opportunities to share your maths strategies with your child and encourage them to share their own. Play board games and card games together— crib, 500, etc.

Using dates and calendars e.g. I was born in 1987 – How old am I now?

Car licence plates can be useful for numeracy games while travelling:

- "Licence Cricket" – take turns to use the last number on car number plates to score (you're out when you get a '0').
- Add the numbers on a plate, look for patterns e.g. add tidy tens together first
- Read the numbers aloud – 3 and 4 digit number practice e.g. 7263
- Add the first two digits to the second two digits e.g. $72 + 63$

Number Knowledge

Your child is currently working at the **Advanced Additive (6)** stage in Numeracy.

There are some key items of knowledge that your child needs to learn to help them progress through this stage. In the left hand column below are knowledge activities that your child should practise at home. The right hand column gives an example.

Sequencing and Ordering / Fractions	
Read and order any number in the range 0 – 1,000,000	698,999 543,206 700,881 reorder to 543,206 698,999 700,881
Read decimals to 3 decimal places	0.764 (764 thousandths)
Read any fraction including greater than 1	8/6 4/5 1 3/5
Order unit fractions	1/3 1/8 1/10 1/4 reorders to 1/10, 1/8, 1/4, 1/3
Say the same number 1, 10, 100 and 1,000 more or less than	654 754 854... 8,432 7,432 6,432...
Count forwards and backwards in halves, quarters, thirds, fifths and tenths	8/10 9/10 1 11/10 ...
Groupings and Place Value	
Know groupings of 10's and 100's in a 4 digit number	4,676 = 467 tens or 46 hundreds 5,012 = 501 tens or 50 hundreds Tens in 4,562 is 456 with 2 remainder
Know groupings within 1,000	455 and 555 200 and 800 199 and 801
Know groups of 2's, 3's, 5's and 10's in numbers to 100 and any remainders	Threes in 17 = 5 and 2 remainders Nines in 85 = 9 and 4 remainders
Round whole numbers to the nearest 10, 100, 1,000	5,508 → 6,000 2,289 → 2,000
Round decimals to the nearest whole number	3:49 → 3 8.15 → 8
Know tenths and hundredths in decimals to two places	Tenths in 7.2 is 72 Hundredths in 2.84 is 284
Basic Facts	
Recall all basic multiplication facts up to the 10 times tables (10x10) and some corresponding division facts	3 x 8 = 24 7 x 7 = 49 45 ÷ 9 = 5
Recall addition and subtraction facts to 20	13 + 5 = 18 16 - 9 = 7
Know what happens when you multiply by 1, 0 or 10	9 x 1 = 9 25 x 0 = 0 14 x 10 = 140

Activities to do at home with Advanced Additive children (Stage 6):

Advanced additive children use a variety of ways to solve and estimate the answers to addition and subtraction problems. They see numbers as whole units in themselves but are also able to split numbers up and see lots of possibilities for subdivision and recombining.

Children working at this stage need lots of reinforcement of their basic facts both in addition, subtraction, multiplication and division.

Making small flash cards of all the basic facts and then putting them into piles of those you know and those you don't know. Work on the pile you don't know, gradually getting that pile less.

Continue reading large numbers up to trillions. Use the odometer of the car and read these numbers. What is one more? One less? Ten more? Twenty more? A hundred less? A hundred more?

Gather some decimal numbers from magazines, newspapers, advertising flyers etc. Place these in order. Be careful to use more than just prices. Do the same with fractional numbers.

Use the car sales pages or house sale pages in a Saturday paper and get the children to say and then order some large numbers. Which is the most expensive car? The cheapest?

Using dates and calendars, look for patterns e.g. numbers in a square or diagonal numbers.

Use contexts to practice maths equations:

Buying packs e.g. cans of soft drink – 6 packs of 4 cans – how many altogether? What is the total volume?

If a packet of 10 cakes were \$2.50 – how much would each cake cost?

8 pies shared among 3 people – how much would each person get?

Reading family phone numbers as a number rather than as digits e.g. 3126533 – three million, one hundred and twenty-six thousand, five hundred and thirty-three.

Practise automatically knowing all basic facts (x and ÷). Learn them as family of facts. Use flash cards to help with this.

$5 \times 4 = 20$

$4 \times 5 = ?$

$20 \div 4 = ?$

$20 \div 5 = ?$

Include fractions

$\frac{1}{4}$ of 20 = 5

$\frac{1}{5}$ of 20 = 4

Number Knowledge

Your child is currently working at the **Advanced Multiplicative (7)** stage in Numeracy.

There are some key items of knowledge that your child needs to learn to help them progress through this stage. In the left hand column below are knowledge activities that your child should practise at home. The right hand column gives an example.

Sequencing and Ordering	
Count forwards and backwards by thousandths, hundredths, tenths, ones, tens etc.	1.2 1.3 1:4 ... 6:43 6:42 6:41 6:40 ...
Say the number one-thousandths, one-hundredth, one-tenth, one, ten etc. before and after any given number	1.2, 1.3, 1.4, _ _, 4.53, 4.54, 4.55
Fractions	
Order decimals to 3 decimal places	0.8 0.126 0:48 0.379 reorders to 0.126, 0.379, 0:48, 0.8
Order mixed fractions including halves, thirds, quarters, fifths & tenths	5/3 2/10 3/4 1/2 reorders to 2/10, 1/2, 3/4, 5/3
Know equivalent fractions for halves, thirds, quarters, fifths & tenths with denominators up to 100 and up to 1,000	1 in 4 is equivalent to 25 in 100 or 250 in 1,000 $1/5 = 2/10 = 20/100 = 200/1,000$
Grouping / Place Value	
Know groupings of ten, one hundred and one thousand that can be made from a number of up to seven digits	$3,456,789 = 345,678 \text{ tens}$ $5,546,120 = 55,461 \text{ hundreds}$
Round whole numbers and decimals to nearest whole number or one-tenth	0:47 → 0.5 (nearest tenth) 6:49 → 6.5 (tenths) or 6(tens)
Basic Facts	
Recall all multiplication and division facts to 10 x 10. Learn as fact families (<i>Explore links between basic facts and fractions</i>)	$8 \times 7 = 56$, $7 \times 8 = 56$, $56 \div 8 = 7$, $56 \div 7 = 8$ ($1/8$ of 56 = 7, $1/7$ of 56 = 8)
Recall conversions between decimals, fractions and percentages for halves, thirds, quarters, fifths and tenths	$3/4 = 0.75 = 75\%$ $1/2 = 0.5 = 50\%$
Use divisibility rules for 2, 3, 5, 9, 10	471 is divisible by 3 since $4+7+1=12$ and 12 can be divided by 3
Know square numbers to 100 and the corresponding square root	$7^2 = 49$ $49 = 7^2$
Identify factors of numbers to 100, including prime numbers	Factors of 35 = 1, 5, 7, 35 Factors of 36 = 1,2,3,4,6,9,12,18,36
Find common multiples of numbers to 10	Common multiples of 3 & 7 are 21, 42, 63, 84 ...

Activities to do at home with Advanced Multiplicative children (Stage 7)

Advanced Multiplicative thinkers use a variety of ways of partitioning, manipulating and recombining numbers to solve problems.

Practise automatically knowing facts all times tables (x and \div). Learn them as family of facts. Use flash cards to help with this.

$8 \times 4 = 32$

$4 \times 8 = ?$

$32 \div 4 = ?$

$32 \div 8 = ?$

Include fractions

$\frac{1}{4}$ of 32 = 8

$\frac{1}{8}$ of 32 = 4

Gather some decimal numbers from magazines, newspapers, advertising flyers etc. Place these in order. Be careful to use more than just prices. Do the same with fractional numbers.

Use the car sales pages or house sale pages in a Saturday paper and get the children to say and then order some large numbers. Which is the most expensive car? The cheapest? What is the difference between the two?

Encourage students to use more than one strategy to check their answers.

Use contexts to practice maths equations:

- Use decimals and fractions – everyone gets $\frac{2}{5}$ s of the pizza, how many pizzas to feed 6 people?
- In the supermarket – look for the most economical size/brand

Number Knowledge

Your child is currently working at the **Advanced Proportional (8)** stage in Numeracy.

There are some key items of knowledge that your child needs to learn to help them progress through this stage. In the left hand column below are knowledge activities that your child should practise at home. The right hand column gives an example.

Sequencing and Ordering	
Count forwards and backwards by thousandths, hundredths, tenths, ones, tens etc. starting at any decimal number	1.2 1.3 1.4 1.5 ... 6:43 6:42 6.41 6.40 ...
Say the number one-thousandth, one-hundredth, one-tenth, one, ten etc. before and after any given decimal number	6:42, 6.52, 6.62, _ 8.502, 8.501, 8.500, 8.499, _
Order fractions, decimals and percentages	0.4 50% 4/5 0.24 30% 2/3
Grouping and Place Value	
Know how many tenths, hundredths and one-thousandths are in numbers of up to 3 decimal places	1.873 → 18 tenths or 187 hundredths Tenths in 45.6 is 456 Hundredths in 9.03 is 903
Know what happens when a whole number or decimal is multiplied or divided by a power of 10	1.23 x 100 = 123 6.53 ÷ 10 = 0.653
Round decimals to the nearest hundred, ten, one, one-tenth or one-hundredth	9.876 → 9.88 (nearest hundredth) 5,234 → 5,200 (nearest hundred)
Basic facts	
Recall fraction, decimal and percentage conversions for commonly used fractions and decimals (1/8, 1/10, 1/20 etc.)	1/8 = 0.125 = 12.5% 9/8 = 1.125 = 112.5%
Know simple powers of numbers to 10	2 ³ = 8 5 ³ = 125
Use divisibility rules for 2,3,4,5,6,8,9,10	276 is divisible by 3 because 2+7+6=15 and 15 can be divided by 3
Identify common factors of pairs of numbers to 100, including the highest common factor	Highest common factor of 72 & 81 = 9 Common factors of 48 & 64 = 1,2,4,8,16
Identify lowest common multiple of pairs of numbers to 10	Lowest common number of 6 & 8 = 24
Recall prime numbers to 20	1 2 3 5 7 11 13 17 19

Activities to do at home with Advanced Proportional children (Stage 8)

Advanced Proportional thinkers find solutions using common factors, the multiplication of decimals and the calculation of percentages. These thinkers can find the relationship between two different measures.

Children should be encouraged to say decimal word sequences counting forwards, backwards by the thousandth, hundredths, tenths, ones, tens etc., starting at any decimal number.

Children need to practice saying the number one-thousandth, one-hundredth, one-tenth, one, ten, etc. before and after any decimal number.

Gather some decimal numbers from magazines, newspapers, advertising flyers etc. Place these in order. Be careful to use more than just prices. Do the same with fractional numbers.

Use the car sales pages or house sale pages in a Saturday paper and get the children to say and then order some large numbers. Which is the most expensive car? The cheapest? What is the difference between the two?

Continue to use contexts to practice maths equations:

- Make use of percentages – 20% discount on an item? How much will we save? What will the final price be?
- Use ratio/proportion – At our hangi we need six carrots for every five people, how many will we need for 15 people?

Again encourage students to try other strategies to check their answers.