Teaching Notes

Please note: these Teaching Notes are available at www.nelsonprimary.com.au/primary

Up and Over, pp. 2–3

Teaching Focus: to explore location language, counting collections and 1-1 correspondence

- Have children look at the picture. Ask, *What things can you see in the picture?*
- Point to the zoo sign and say, *This is a picture of a zoo.* Ask, *What do you think is happening in this picture? What do you think the mother monkey is doing?*
- Point to the dotted pathway. Ask, *What do you think this dotted pathway is for?* Say, *It shows us the pathway the baby monkey took when he escaped from the zoo.*
- Say, *Let's have a look at how the baby monkey got from the zoo to the hammock.* Trace along the dotted pathway and discuss directional language with children.
- Say, *Look at the zoo gates.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **through** the gates.*
- Say, *Look at the bush.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **behind** the bush.*
- Say, *Look at the pedestrian crossing.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **across** the crossing.*
- Say, *Look at the fountain.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **around** the fountain.*
- Say, *Look at the rocks.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **behind** the rocks.*
- Say, *Look at the steps.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **up** the steps.*
- Say, *Look at the bridge.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **over** the bridge.*
- Say, *Look at the park bench.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **around** the park bench.*
- Say, *Look at the long grass.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **through** the long grass.*
- Say, *Look at the river.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **beside/along** the river.*
- Say, *Look at the rocks.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **over** the rocks.*
- Say, *Look at the rose bushes.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **between** the rose bushes.*
- Say, *Look at the park bench.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **under** the park bench.*
- Say, *Look at the cubby house.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **under** the cubby house.*
- Say, *Look at the ladder.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **up** the ladder.*
- Say, *Look at the cubby house.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **through** the cubby house.*
- Say, *Look at the ladder.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **up** the ladder.*
- Say, *Look at the tunnel.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **through** the tunnel.*
- Say, *Look at the fireman's pole.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **down** the fireman's pole.*
- Say, *Look at the slide.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **down** the slide.*
- Say, *Look at the flowers.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **between** the flowers.*
- Say, *Look at the ladder.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **up** the ladder.*
- Say, *Look at the hammock.* Ask, *What did the baby monkey do?* Say, *The baby monkey went **into** the hammock.*

Have children look at other items in the picture.

- Say, *Look at the pink ball.* Ask, *Where is the pink ball?* Say, *It is **in front of** the bush.*
- Say, *Look at the yellow ball.* Ask, *Where is the yellow ball?* Say, *It is **under** the park bench.*
- Say, *Look at the flowers.* Ask, *Where are the flowers?* Say, *They are **under** the tree.*
- Say, *Look at the apples.* Ask, *Do all the apples look the same?* Say, *How many **big** apples do you see? How many **little** apples do you see?*
- Say, *Look at the dog.* Ask, *What is it standing **next to**?*
- Say, *Look at the duck on the grass.* Ask, *What is it standing **near**?*
- Say, *Look at the mother monkey.* Ask, *What can you see that is **far away** from the mother monkey?*
- Say, *Look at the rose bushes.* Ask, *What can you see that is **far away** from the bushes?*
- Say, *Look at the cubby house.* Ask, *What is **on top of** the cubby house?*

Extension
- Count objects in the picture: ducks, trees, flowers, apples, cars, balls, ladder rungs.
- Ask children to identify **inside/outside** using the cubby house.

Counting, pp. 4–5

Teaching Focus: to investigate number facts to 12: counting, addition and subtraction equations/number stories; count to find the total of two sets; part/part whole of numbers

- Have children look at farm scene. Ask, *What is this a picture of? What can you see in this picture?* Have children look at the numbers across the base of the page. (Refer to these when counting items on the page or use as a number line to assist with counting forwards and back when doing addition and subtraction stories.) For each paddock, ask children to guess numbers, eg Ask, *How many cows/sheep/pigs are there?* Ask, *How do you know there are x cows/sheep/pigs?*

Note: when exploring equations and number stories (see notes below) teachers may like to record these on sticky notes and attach to the relevant part/s of the picture.

- **Exploring numbers 8 and 5:** Have children look at the horse paddock. Ask, *How many horses can you see? How many brown horses are there? What are the brown horses doing? How many grey horses (with blue rugs) are there? Are there more grey horses or brown horses? How many rugs are there altogether?* Say, *We can make up some number stories about the horses: 5 brown horses and 3 grey horses make 8 horses.* Ask, *Can you make up some more number stories?* (eg There are 8 horses in the paddock, 3 horses have rugs on. How many horses do not have rugs on? Four brown horses are looking at the farmer and 1 horse is looking the other way: 4 horses and 1 horse make 5 horses altogether, etc). Say, *We can make up equations/sums about the horses, eg 5 and 3 is 8.* Ask children to make up more equations about the horses.
- **Exploring numbers 1 and 2:** Have children look at the paddock with the tractor. Ask, *Who is in the paddock? What is in the paddock? Can you see another tractor in the picture? Where is it?* Ask children to look at the garage. Ask, *How many tractors are there altogether?* Ask children to talk about and/or make up number stories and equations about the tractor. Ask them to look at the house. Ask, *How many people do you think would live in the house? Why do you think that? How many beds/cakes/windows/doors are there?* Ask children to make up number stories and equations about the house. Have them look at the trees near the house. Ask children to make up number stories and equations about the trees.
- **Exploring number 7:** Have children look at the cow paddock. Ask, *How many cows are in the paddock? What do the cows look like?* Discuss how some cows are white with black spots and one cow is black. Say, *We can make up number stories about the cows.* Ask, *Are there more black and white cows or more black cows?* Ask children to talk about and/or make up some number stories about the cows, eg *3 black and white cows and 1 black cow makes 7 cows: 6 and 1 is 7. There are 7 cows in the paddock. One cow turned around and went to walk out the gate, so there will only be 6 cows left in the paddock: 7 take away 1 is 6.* Ask children to make up more equations about the cows.
- **Exploring numbers 9 and 12:** Have children look at the sheep paddock. Ask, *How many sheep are in the paddock? How many big sheep are there? How many little sheep are there? Are there more big sheep or little sheep? What colour hooves do the sheep have?* Say, *We can make up number stories about these sheep.* Discuss possible number stories with children, eg *In the paddock there are 4 big sheep standing together and 5 big sheep standing together. The paddock has 9 big sheep.* Discuss part/part whole of numbers, eg *What numbers make up 12? 3 and 9, 8 and 4,* etc. Ask, *Are there more little sheep or big sheep?* Say, *We can make up equations/sums about the sheep, eg 4 and 5 is 9, 9 big sheep + 3 little sheep = 12 sheep altogether.* Introduce the +, – and = symbol if appropriate. Encourage children to make up more number stories/equations about the sheep. Have children look at the hay bales. Ask, *How many hay bales are there?* Discuss number stories/equations about the hay bales.
- **Exploring numbers 5 and 10:** Have children look at the pig pen. Ask, *How many pigs can you see? How many pigs are in the pig house? How many pigs are outside the pig house? How many pigs are muddy?* Ask children to talk about and/or make up some number stories/equations about the pigs.

Exploring numbers to 10
- Have children look at the barn. Point out the hay bales. Say, *We can count the bales in many different ways:* horizontally (across), vertically (up and down), by colour (light brown and dark brown). Select a column or row and ask children to count the number of bales.
- Have children look at the chickens. Ask, *What are the chickens doing? What can you see near the barn that would make the chickens stand up in their nests? How many eggs can you see in this nest?* (Start with the top left-hand corner.) Repeat for all the nests, encouraging children to predict how many eggs would be under the two chickens that are not standing.
- Have children look at the vegie patch. Ask, *How many lettuces can you count? How many carrots are there? How many more vegetables could be planted in the vegie garden?*
- **Exploring numbers 4, 8 and 3:** Have children look at the pond. Ask, *How many ducks are in the pond? What are the ducks doing?* Ask children to make up some number stories/equations about the ducks, eg *There are 3 ducks looking for food and 5 ducks floating on the water. How many ducks are there altogether?* Ask, *How many frogs can you see? What are they doing?* Ask children to make up some number stories/equations about the frogs.

- **Exploring numbers 3, 6 and 9:** Have children look at the 2 apple trees. Ask, *How many green apples are there? How many red apples are there? How many apples are there altogether?* Ask children to make up some number stories/equations about the apples/trees.

Extension
- **Using a calculator:** Ask children to key in a specific number into the calculator. Discuss the way the number looks, eg not as round, like microwave numbers, etc. When identifying quantities of animals ask children to find the number on the calculator, eg *How many cows are here?* Key this number into the calculator. When exploring number stories, key numbers into the calculator, that is, as each cow is pointed to, children key 1 into the calculator: 1, 2, 3, 4, 5, 6, and 1 more… 7 so that repeated addition occurs. To reinforce the 'count on' strategy, children can key in 6 and then + 1.

At a Glance, p. 6

Teaching Focus: to investigate subitising numbers to 6, number facts/stories/equations, part/part whole of numbers to 6, estimating and ordering

Subitising
- Say, *We are going to look at some pictures of dice and play a guessing game. I am going to ask you to quickly look at the pink die and tell me how many dots you think there are.* Have children quickly look at the picture of the pink die and then cover. (Dice could be covered with Sticky Notes before the lesson begins.) Ask, *How many dots are on this die?* Say, *Let's count the dots to check our guess.* Ask, *What can you tell me about the dots on the pink die?* Encourage discussion that leads children to an understanding of the concept of what 3 looks like, eg there are a few dots. They are in a row. They go down, etc. Collect a range of items, eg counters, pegs, blocks. Say, *I am going to quickly put some counters on the mat and then I would like you to guess how many there are without counting them.* Randomly select 3 objects (3 counters) and place them on a mat. Ask, *How many counters are there?*
- Have children look at the remaining dice and play the guessing game (as described above) with the dice and then a range of items.
- Randomly refer to the dice on the page and play the guessing game. Say, *Quickly tell me how many dots you can see?*
- **Number facts/stories:** Point to the pink die. Cover 1 dot and ask, *If you take 1 dot away how many dots are left? Now if you had 2 pink dice how many dots would you have?* Cover a different dot on the pink die. Ask, *If you take 1 dot away how many dots are left?* Lead children to understand that it doesn't matter what dot you take away, you will still be left with the same answer. Repeat the activity with the other dice.
- **Part/part whole of number:** Look at a die, eg 6. Discuss the combination of dots that can make up 6: 0 and 6, 1 and 5, 2 and 4, 3 and 3, 4 and 2, 5 and 1, 6 and 0.
- Have children complete number stories using a combination of 2 or more dice, eg *If I had 1 green die and 1 orange die how many dots would we have altogether?*
- Discuss the terms smallest/largest. Order the dice from smallest to largest and from largest to smallest.
- Make the same quantities as shown on the dice using counters.

Extension
- Play subitising games with numbers to 10.
- Play subitising games and number fact/stories games with 3-D dice.

Patterns, p. 7

Teaching Focus: to explore patterns using different attributes and to recognise visual patterns

- Have children look at the first block pattern. Point to the first block. Ask, *What is this? What colour is this block?* Point to the remaining blocks and repeat the question. Chant the pattern with children as you point to the blocks: *1 red block, 1 blue block, 1 red block, 1 blue block.* Ask children to make and/or draw an identical pattern. Have children look at the picture of the block pattern. Say, *We can keep this pattern going.* Chant the pattern and ask, *What colour block comes next?* Ask children to make and/or draw the continued pattern.
- Have children look at the second block and counter pattern. Point to the first block. Ask, *What colour is this block?* Point to the remaining blocks and counters and repeat the question. Chant the pattern with children as you point to the blocks: *1 red block, 1 green circle, 1 red block, 1 green circle.* Chant the pattern by highlighting the shape: *square, circle, square, circle.* Chant the pattern by highlighting the colour: *red, green, red, green.* Ask children to make and/or draw an identical pattern. Have them look at the picture of the block and counter pattern. Say, *We can keep this pattern going.* Chant the pattern and ask, *What comes next?* Ask children to make and/or draw the continued pattern. Ask, *What is different about the first pattern and the second pattern?* Talk about the different attributes.
- Have children look at the third block and counter pattern. Point to the first block. Ask, *What colour is this block?* Point to the remaining blocks and counters and repeat the question. Chant the pattern with children as you point to the blocks: *1 blue block, 1 yellow circle, 1 yellow circle, 1 blue block, 1 yellow circle, 1 yellow circle.* Chant the pattern by highlighting only the colour: *blue, yellow, yellow, blue, yellow, yellow.* Ask children to make and/or draw an identical pattern. Have them look at the picture of the block and counter

pattern. Say, *We can keep this pattern going.* Chant the pattern and ask, *What comes next?* Ask children to make and/or draw the continued pattern. Ask, *What is different about the second pattern and the third pattern?* Discuss the different attributes. Talk about the order of objects (first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth).
- Have children look at the dice pattern. Point to the dice and ask, *Do the dice look the same? What is different about them?* Chant the pattern with children as you point to each die: *1 dot, 4 dots, 1 dot, 4 dots.* Ask children to make and/or draw an identical pattern. Have children look at the picture of the dice pattern. Say, *We can keep this pattern going.* Chant the pattern and ask, *What comes next?* Ask children to make and/or draw the continued pattern.
- Have children look at the animal pattern. Point to the animals and ask, *What pattern can you see?* Chant the pattern with children: *1 tiger, 1 tiger, 1 elephant, 1 tiger, 1 tiger, 1 elephant.* Ask children to draw an identical pattern. Say, *We can keep this pattern going.* Chant the pattern and ask, *What comes next?* Ask children to make and paste the continued pattern.
- Have children look at the teddy bear pattern. Ask, *What do the teddies look like? Is there size/colour the same?* Chant the pattern with children as you point to the blocks: *1 big red teddy bear, 1 little blue teddy bear, 1 big red teddy bear, 1 little blue teddy bear.* Ask children to make and/or draw an identical pattern. Have them look at the picture of the teddy bear pattern. Say, *We can keep this pattern going.* Chant the pattern and ask, *What comes next?* Ask children to make and/or draw the continued pattern.
- For each pattern talk about the shapes and their size using words like square, circle, box (cube), big and small.
- For each pattern randomly ask, *What is the first/second/third/fourth/fifth, etc shape/animal?*

Extension
- Make other patterns using a combination of different attributes (size, shape, colour).
- Have children use shape templates and draw their own patterns.

Ten Frames, pp. 8–9

Teaching Focus: to investigate number facts to 10, identify numbers to 10, explore conservation of number, and part/part whole of numbers to 10

Individual numbers
- Have children look at a number (eg ten-frame 6) that you wish to focus upon. Ask *How many dots are there? How do you know? What can we do to check our guess?* (eg count the dots, touch the dots, place counters/blocks on the dots) Count the dots one-by-one to find the value.
- Make models of ten using blocks/counters/sticks, etc.
- Make models of the number (eg 6) on a blank ten-frame (see *Nelson Maths AC TRB Foundation*, BLM 38) using counters. Allow children to arrange the counters. Talk about the different positions counters could be placed. Ask, *Does it matter where the 5 counters are placed? Does the number still stay the same?*
- Have children look at the ten-frame (eg 6). Give children two different-coloured collections of counters and say, *There are many ways to make this number. I want you to make the number on the ten-frame and tell me the story.* Discuss combinations that make up the number, eg 0 and 6, 1 and 5, 2 and 4, 3 and 3, 4 and 2, 5 and 1, 6 and 0.

Extension
- Extend to arranging 3 colours, eg 1, 3 and 2.

Relationship to other numbers (transferring knowledge)
- Have children look at two or more ten-frames (eg 6 and 7). Ask, *What is the same about these ten-frames? What is different? What do we have to add/subtract/do to this ten frame to get to this ten-frame?* (eg 7 is just 1 more dot than 6.) *What number is bigger/smaller?*
- Have children look at the ten-frames. Ask, *What can you tell me about the number 1/2/3? etc. How are they different? How are they the same?* Ask for an example, *What is different about number 3 and number 2? What do you have to do to 3 to make 2? What do you have to do to 2 to make 3? What is different about number 10 and number 8? What do you have to do to 8 to make 10? What do you have to do to 10 to make 8?* Repeat with other combinations of numbers.
- Say, *Look at number 3.* Ask, *How many more dots do you need to make 10?* Have children count by touching the blank spaces (or by attaching removable stickers to show how many more dots are needed). Discuss that 10 is made up of 3 and 7 or 7 and 3. Repeat with other numbers.
- **Using a calculator:** Look at the ten frame containing 1 dot. Ask children to key in 1 on their calculator. Ask, *How many dots do we have to put in the tens frame to get to 2?* (1 more). Ask children to key in + 1. Continue to do this to show that each number is 1 more than the previous number.
- **Number games:** Look at two selected ten frames (eg 5 and 2). Ask, *When you put these dots together how many dots do you have? Which number (5 or 2) is bigger/smaller? Why? What is the difference between these two numbers?* Repeat with two other ten frames.

Teaching Notes continued

shampoo bottles and 2 red shampoo bottles makes 4 shampoo bottles. Discuss the numbers that can make up 4: 1 and 3, 3 and 1, 2 and 2, 4 and 0, 0 and 4.

- **Packing bag scene 5:** Have children look at the packing bag scene. Ask, *What can you see in this picture?* Have children count the objects in the scene. Encourage them to use 'quantity' language such as, 'I can see **5** large plates. There are **5** mugs — 2 blue mugs and 3 red mugs.' Have children make up simple equations about the items, eg 2 blue mugs and 3 red mugs make 5 mugs. Discuss the numbers that can make up 5: 1 and 4, 4 and 1, 2 and 3, 3 and 2, 5 and 0, 0 and 5. Ask, *How many apples are there?* (1 on the table and 4 in the bowl: 1 and 4 makes 5)

- **Walking to school scene 6:** Ask, *What can you see in this picture?* Have children count all the objects in the scene. Encourage them to use 'quantity' language such as, 'I can see **6** cars. There are **6** houses — 1 double-storey house and 5 single-storey houses.' Have children make up simple equations about the items, eg 1 double-storey house and 5 single-storey houses make 6 houses; 3 brick letter boxes and 3 wooden letter boxes makes 6 letter boxes; 3 red doors and 3 brown doors makes 6 doors; 2 red flowers and 4 blue flowers makes 6 flowers. Discuss the numbers that can make up 6: 1 and 5, 5 and 1, 2 and 4, 4 and 2, 6 and 0, 0 and 6, 3 and 3. Ask, *How many children are there?* (4 boys and 2 girls makes 6 children. 2 children with hats and 4 children without hats.)

Extension
- Have children make up subtraction equations for each picture, eg the packing bag scene: 5 bags take away 1 bag leaves 4 bags.
- Have children make up other sequence pictures to continue the little girl's day.

Ordinal Number, pp. 22–23
Teaching Focus: to explore ordinal numbers to 10, and pattern and order

Ordinal number
- Have children look at the clowns. Say, *The clowns are standing in line near the balloons.* Ask, *How many clowns are there?* Say, *Point to the clown that is next to/closest to the balloons. Point to the clown that is furthest away from the balloons.* Ask, *If the clowns are lining up so each of them can get a balloon, which clown is first?* Discuss the relationship between *one* and *first*. Talk about strategies when finding position, eg You just count along. Ask, *Which clown is last? What helped you to work out which clown was first and which clown was last? Which clown is the second clown? How do you know?* Discuss strategies to work out the second clown, eg The clown is standing next to the first clown. You just count along two. You say, first, second. Discuss the relationship between *two* and *second*. Continue discussing the order of the remaining clowns and highlight the relationships between ordinal number and cardinal number. Reinforce ordinal number by chanting the sequence: first, second, third…etc. while pointing to individual clowns.
- Say, *Point to the third clown.* Ask, *What clown comes before/after this clown?*
- Ask, *Which clown is wearing a red jacket?* (fifth clown) *Which clown is wearing a blue jacket?* Repeat the question for different coloured jackets. Ask, *Which clown is the tallest clown? Which short clown is wearing a small hat?* Point to a clown. Ask, *What can you tell me about this clown?*

- Ask children to point to the fourth, seventh, etc. clown. Ask, *How did you know which clown to point to? What tricks/strategies did you use to help you?*

Counting
- Ask, *How many clowns have small/tall hats? How many clowns are wearing red/blue hats? How many clowns have orange hair? What is different about their hair? How many tall clowns are there? How many middle-sized clowns are there? How many small clowns are there? How many clowns are there with curly hair?*
- Have children look at the ice-cream stand. Ask, *How many ice-creams are there? How many sticks of fairy floss are there?*
- Have children look at the flowers in the ground. Ask, *How many flowers are there? How many flower holes are there? How many clowns are there? Where do you think the flowers for the clowns' hats came from?*
- Have children look at the blue ball. Ask, *What shapes are on the ball? How many squares are on the ball?* Repeat the questions with remaining balls. Ask, *How many balls altogether?*

Pattern, order, shape
- Have children look at the picture. Ask, *What can you see in this picture? How many clowns are there? Are the clowns the same/different? What colour shoes are the clowns wearing?* Chant the coloured-shoe pattern: *red, blue, red, blue, …* etc.
- Ask, *What colour hats are the clowns wearing?* Chant the coloured-hat pattern: *blue, red, blue, red, blue, …* Ask, *Are the clowns wearing the same-coloured shoes as their hats? What size hats are the clowns wearing?* Chant the hat size pattern: *small, tall, tall, small, tall, tall, …* Ask, *If there was another clown standing in line, what size hat would he or she be wearing? What colour would his or her hat be? What tricks/strategies did you use to help you?*
- Ask, *How many buttons does the first/second/…, etc. clown have? What pattern do you notice?*
- Have children look at the balloons and the clowns' jackets. Ask, *What colour balloon do you think the first clown will get? Why?*
- Ask, *If there was another clown standing beside the last clown, what colour shoes would he or she have?*

Extension
Ask, *What other patterns can you see?* Look at the pattern and order of the ice-creams, fairy floss, clouds and tent.