




## Maths and Me: Senior Infants – Short-Term Plan, Unit 8: Numbers to 20 (January: Weeks 1&amp;2)

Strand(s) > Strand unit(s)	Number > Place Value and Base Ten; Numeration and Counting; Uses of Number. Algebra > Patterns, Rules and Relationships.			
Learning Outcome(s)	Through appropriately playful and engaging learning experiences children should be able to develop a sense of ten as the foundation for place value and counting; develop an awareness that the purpose of counting is to quantify; use a range of counting strategies for a range of purposes; develop an awareness that numbers have a variety of uses; explore, recognise and create patterns and sequences.			
Lesson	Focus of Learning (with Elements)	CM	Learning Experiences	Assessment
1	<b>Numbers to 15:</b> Counts forwards and backwards within 20, and beyond (U&C); Reads, writes and orders numerals up to at least 15 (U&C); Composes and decomposes the structure of numbers 11–15 in terms of tens and ones (U&C)		D Notice & Wonder L1 C Reason & Respond L1–5 D Think-Pair-Share L1–5 C Build it; Sketch it; Write it L1 C Class discussion: Bigger than 10 L1 D Quick Images L2–3	<b>Intuitive Assessment:</b> responding to emerging misconceptions
2	<b>Numbers to 17:</b> Recalls the number sequence forwards and backwards, between zero and least 20, from any given number (U&C); Reads, writes and orders numerals up to at least 17 (U&C); Composes and decomposes the structure of numbers 16 and 17 in terms of tens and ones (U&C)		D Write-Hide-Show L2–3 C Show Me! L2–4 C Build It! L2–4 D Choral Counting L3–5	<b>Planned Interactions:</b> responding to insights gleaned from children's responses to learning experiences
3	<b>Numbers to 19:</b> Reads, writes and orders numerals up to at least 19 (U&C); Explores mathematical representation (manipulatives and/or pictorially) of tens and ones (C); Composes and decomposes the structure of numbers 18 and 19 in terms of tens and ones (U&C); Discusses the groupings of tens (and ones left over) (C)		P Ordering Numbers 16–20 L4 D Concept Cartoon L4 D Three-Act Task L5	<b>Assessment Events:</b> information gathered from completion of the unit assessment in the Progress Assessment Booklet pages 18–19
4	<b>Numbers to 20:</b> Reads, writes and orders numerals up to at least 20 (U&C); Demonstrates an ability to subitise various arrangements or models of numbers to 20 (U&C); Investigates various arrangements (for example: on ten frames) of manipulatives to prompt different mental images of numbers up to 20, while developing a sense of each number (R); Orders and compares numbers 1–20 with each other (R)		<b>Print resources</b> Pupil's Book pages 43–49 Home/School Links Book pages 21–22	
5	<b>How Many?</b> Selects and uses appropriate materials to make a variety of sets (A&PS); Uses a range of counting strategies to determine quantities and justifies their efficiency (A&PS)			
6	<b>Review and Reflect:</b> Reviews and reflects on learning (U&C)			

**Key: Elements:** (U&C) Understanding and Connecting; (C) Communicating; (R) Reasoning; (A&PS) Applying and Problem-Solving. **CM:** *Cuntas Míosúil*: please tick when you have completed the focus of learning. **Learning Experiences:** C concrete activity; D digital activity; P activity based on printed materials, followed by lesson numbers.

## Additional information for planning

 <b>Progression Continua</b>	See 'Senior Infants <i>Maths and Me</i> Progression Continua Overview' for a detailed breakdown of how all progression continua are covered.
 <b>Maths Language</b>	See 'Senior Infants <i>Maths and Me</i> Maths Language Overview', individual lesson plans and the Unit 8 Maths Language Cards.
 <b>Equipment</b>	See 'Senior Infants <i>Maths and Me</i> Maths Equipment Overview' and individual lesson plans.
<b>Inclusive Practices</b>	<ul style="list-style-type: none"> <li>● See Let's Strengthen and Let's Deepen suggestions throughout lesson plans.</li> <li>● See Unit 8 Let's Strengthen Suggestions for Teachers. (These address the Common Misconceptions and Difficulties listed below.)</li> <li>● See Unit 8 Let's Strengthen PCM</li> <li>● See Unit 8 Let's Deepen PCM.</li> </ul>
<b>Integration</b>	See individual lesson plans.

## Background and rationale

- This unit is a two-week block of content, located in January. The overarching theme of Winter Fun makes it especially meaningful at the start of the new school term.
- The unit is specifically positioned to come after Unit 7 Operations within 15, and before Unit 10 Addition, and Unit 12 Subtraction. The tasks will review and consolidate many of the concepts covered in Number up to this point, including counting strategies, comparing, ordering, etc.
- In this unit, the children will identify numbers up to 20, building on to the concept of Place Value with Base Ten (i.e. a group of ten and leftover ones).
- In keeping with the new PMC 2023, *Maths and Me* uses the terminology 'tens and ones', as opposed to 'tens and units'.

The theme of this unit is **Winter Fun**.

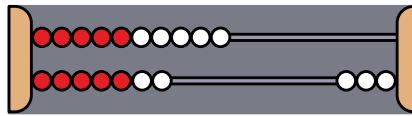
## Common misconceptions and difficulties

- The children may not recognise the idea of '10 and then some more'.
- When counting, the children may miss out numbers or say the wrong number (e.g. saying 'thirty' instead of 'thirteen', or 'fiveteen' instead of 'fifteen').
- The children may think that two-digit numbers are made up of ones and ones rather than tens and ones (e.g. think that 12 is made up of 1 and 2 rather than 10 and 2).

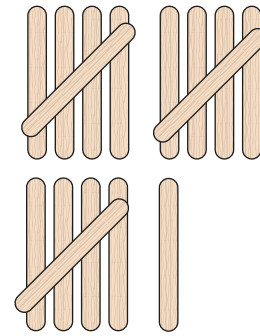
The Unit 8 Let's Strengthen Suggestions for Teachers address the common misconceptions and difficulties listed above.

## Mathematical models and representations

- Assorted countable resources in the classroom (e.g. bears, links, lollipop sticks and counters)
- Groupable manipulatives (e.g. interlocking cubes and links)
- Ten frames
- Rekenreks
- Beads and strings
- Fingers
- Number paths
- Number shapes
- Tally marks
- Branching bonds (example of part–whole models)



*Rekenrek showing 17*



*Tally marks for 16 using lollipop sticks*

### Teaching tip

Ten Frame, Number Path, Number Shapes and Branching Bond manipulative printables are available to support this unit. Click on the resources icon on the *Maths and Me* book cover on [edcolearning.ie](http://edcolearning.ie)

## Day 1, Lesson 1

## Numbers to 15

## Focus of learning (with Elements)

- Counts forwards and backwards within 20, and beyond (U&C)
- Reads, writes and orders numerals up to at least 15 (U&C)
- Composes and decomposes the structure of numbers 11–15 in terms of tens and ones (U&C)

## Learning experiences

- D** Digital activity: Winter Fun (1) **MAM Routines: Notice & Wonder; Reason & Respond, with Think-Pair-Share**
- C** Concrete activity: Representing Numbers 11–15  
**MAM Routine: Build it; Sketch it; Write it**
- C** Class discussion: Bigger Than 10
- P** Pupil's Book page 43: Numbers to 15

## Equipment

- Manipulatives for counting, such as bears, links, cubes, counters and lollipop sticks
- Groupable manipulatives, such as links, interlocking cubes, and lollipop sticks with elastic bands
- Counting aids, such as number paths, ten frames, counting beads, rekenreks, number shapes and part-whole models (e.g. branching bond templates)

## Maths language

- eleven, twelve, thirteen, fourteen, fifteen

## Warm-up

- D** Digital activity: Winter Fun (1)  
**MAM Routine: Notice & Wonder**

Display the poster and click to play or ask:

- What do you notice?
- What do you wonder?

Record the children's responses to both questions on the board. Allow the children the opportunity to respond to (agree/disagree with or query) others' responses, but do not confirm or reject any of the ideas. Note any 'wonderings' that could become the basis for a subsequent maths investigation.

## Main event

- D** Digital activity: Winter Fun (1) **MAM Routines: Reason & Respond, with Think-Pair-Share**

Display the poster and, using Think-Pair-Share to gather feedback, click to play or ask:

- What do you think this unit is about?
- Name some things that you recognise.
- What are the characters doing?
- Do you know what time of year it is?
- How many children are not wearing gloves?
- How many people are wearing hats?
- How many animals can you see?
- How many people are wearing scarves?
- How many children are wearing boots?
- How many boots altogether? (count in 2s)



## Teaching tip

The children could use manipulatives of their choosing (or the teacher's choosing) to help them count and compare.

Monty the puppet might also notice that you could count the boots in 2s.

## Let's deepen

Challenge the children with these additional questions:

- Why, do you think, are there more gloves than scarves in the poster?
- How many more people are there than hats?

**C Concrete activity: Representing Numbers 11–15**  
**MAM Routine: Build it; Sketch it; Write it**

Ask the children to work in pairs or small groups to represent various numbers from 11 to 15, using at least one mathematical model from those below.

- Build it: Can you use materials to represent the number? Show us.
- Sketch it: Can you represent the number as a sketch? Show us.
- Write it: Can you use words, branching bonds or numerals to represent the number? Show us.

### Teaching tip

Enable the children to organise the materials in a way that reinforces the numbers and ‘10 and then some more’. For example: Links can be joined as a ‘bracelet’ of ten, plus single links; interlocking cubes can be joined as a tower of ten, plus single cubes; lollipop sticks can be bound in a bundle of ten, using an elastic band, plus single lollipop sticks.

Optional: Following this task, create a 2-D and/or 3-D display for a particular number (e.g. 14), illustrating all the different ways to represent that number. This display could be changed regularly to represent other numbers and could be incorporated with, or become, a Number of the Day activity.

**C Class discussion: Bigger Than 10**

Allow the children to gather groupable manipulatives of their choosing (e.g. links, interlocking cubes, lollipop sticks and elastic bands). Revisit the class discussion carried out in Unit 5 Numbers to 15. Ask the children to count forwards from 10. As they do so, write the numerals 11–20 first, followed by the

words for these numbers on chart paper (one below the other, to allow for representations to be added in the activities entitled ‘Show Me!’ that follow over the course of the fortnight). Ask/say:

- What do you notice about these numbers and words?
- Most are ten and ‘something’, and most have the suffix ‘teen’ at the end.
- These (pointing out the relevant numbers) are known as teen numbers.

Underline the suffix ‘teen’. Practise saying it with the children, ensuring that they hear the final consonant, ‘n’. Make the connection between ‘teen’ and ‘ten’. Highlight the inconsistencies of the language, and for fun, explore alternative, silly forms of the teen numbers: 11 – ‘oneteen’; 12 – ‘twoteen’; 13 – ‘threeteen’; 15 – ‘fiveteen’. Ask the children to build each number as a ten with ‘leftovers’, using their manipulatives.

**P Pupil’s Book page 43:**  
**Numbers to 15**



### Let's deepen

For further opportunities with page 43 of the Pupil's Book, complete Part A of the Unit 8 Let's Deepen PCM.

## Optional consolidation and extension possibilities

**Integration** Language: Gaeilge: Aimsir, éadaí.  
 Geography: Weather. Science: Seasonal change, heating and cooling.

**Strategy Wall** Add the calculation strategy wall cards for ‘Counting All’, ‘Counting On’, ‘Counting On from the Larger Number’, and ‘Count in 2s’ to the class strategy wall. Refer to them throughout this and subsequent units. The children could also add their own sketches of this strategy, both to the strategy wall and in their maths journals.

**Hop and Count** (Integration with PE) In the PE hall or yard, tell the children to hop/jump/touch the ground 0–20 times while counting.

**Sound of a Number** The children close their eyes, listen, and count silently as you drop marbles or buttons, one by one, into the jar. Ask them how many you dropped. Using Write-Hide-Show, the children use number tallies or other marks to record their responses.

**Story** Read *The Mousier, the Merrier!* by Eleanor May and *One... Two... Three... Sassafras!* by Stuart J. Murphy, both of which include numbers up to 15. Listen to readings at [edco.ie/zez9](http://edco.ie/zez9) and [edco.ie/vxep](http://edco.ie/vxep)



## Days 2 and 3, Lesson 2

## Numbers to 17

## Focus of learning (with Elements)

- Recalls the number sequence forwards and backwards, between zero and at least 20, from any given number (U&C)
- Reads, writes and orders numerals up to at least 17 (U&C)
- Composes and decomposes the structure of numbers 16 and 17 in terms of tens and ones (U&C)

## Learning experiences

- D** Digital activity: Dot Patterns (7)  
**MAM Routines: Quick Images, with Write-Hide-Show**
- C** Concrete activity: Show Me!
- D** Digital activity: Winter Fun (2)  
**MAM Routines: Reason & Respond, with Think-Pair-Share**
- C** Concrete activity: Build It!
- P** Pupil's Book page 44: Numbers to 17

## Equipment

- Manipulatives for counting, such as bears, links, cubes, counters and lollipop sticks
- Groupable manipulatives, such as links, interlocking cubes, and lollipop sticks with elastic bands
- Counting aids, such as number paths, ten frames, counting beads, rekenreks, number shapes and part-whole models (e.g. branching bond templates)
- Representations of 16 and 17 posters (printables)

## Maths language

- sixteen, seventeen, partition, tens, ones

## Warm-up


**D Digital activity: Dot Patterns (7) MAM Routines: Quick Images, with Write-Hide-Show**

(Recommended for Day 2.)

Play the slideshow. Click to briefly reveal and then hide the image(s), and use Write-Hide-Show to collect feedback. Ask the children to share and discuss their estimates to see if they are reasonable. When several children have given their estimates, reveal the collection again and discuss the counting strategies used. Ask:

- What did you see?
- How did you come up with your answer?
- Did anyone see the number a different way?

**C Concrete activity: Show Me!**

(Recommended for Day 3.)

Ask the children to show you the numbers 16 and then 17, in whatever way they choose. They could use materials (e.g. rekenreks, beads and strings, ten frames, number shapes or fingers in pairs), they could create sketches (e.g. tally marks) or they could write the numbers. After the children have used a variety of manipulatives to show you the numbers, display the Representations of 16 and Representations of 17 poster printables to the class.

## Main event

Choose to do some or all over the two days.


**D Digital activity: Winter Fun (2) MAM Routines: Reason & Respond, with Think-Pair-Share**

Display the image and, using Think-Pair-Share, click to play or ask:



- How many snowballs and snowmen can you see altogether?
- How many children are there standing altogether?
- How many children are sliding (sledding and skiing) altogether?

**C Concrete activity: Build It!**

Ask the children to count out 16 interlocking cubes. They then link ten cubes together, in whatever bond of 10 they wish to use ( $9 + 1$ ,  $7 + 3$ , etc.). Ask:

- What bond did you use?
- Did anyone use a different bond?
- What do you notice? How many cubes are left over?
- So we have a 10 and a 6. How much is that?

Ask the children to repeat the activity above, this time with 17 cubes, and using a different bond of 10.

Ask:

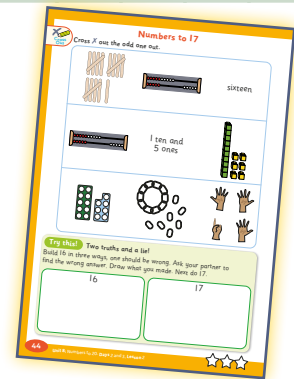
- What bond did you use?
- Did anyone use a different bond?
- What do you notice? How many cubes are left over?
- So we have a 10 and a 7. How much is that?

**Let's deepen**

**Build it:** Can you use other classroom resources to represent the number? Show us.

**Sketch it:** Can you represent the number as a sketch? Show us.

**Write it:** Can you use words, branching bonds or number sentences to represent the number? Show us.

**P Pupil's Book page 44: Numbers to 17****Optional consolidation and extension possibilities**

**Estimation Station** Fill a partially transparent container with 15–20 items from the classroom (ensure the actual amount cannot be counted). Leave a box close by where children can 'post' their estimates. After two or three days, ask a group to count the items and identify who had the closest estimate. The children can then set up the station again with more/less items or different items.

**Sound of a Number** The children close their eyes, listen, and count silently as you drop marbles or buttons, one by one, into the jar. Ask them how many you dropped. Using Write-Hide-Show, the children use number tallies or other marks to record their responses.

**Number Display** Set up (or add to) a classroom display for Number. Use representations of numbers up to 20. Include various amounts from real life found in print media and online, as well as appropriate labels (see the Unit 8 Maths Language Cards). The children could contribute samples of their own works from this, and subsequent lessons and label them. The children could also source real objects or images from home to add to the display.

**Games Bank** Play 'Teen Pairs'.

**Days 4 and 5, Lesson 3****Numbers to 19****Focus of learning (with Elements)**

- Reads, writes and orders numerals up to at least 19 (U&C)
- Explores mathematical representation (manipulatives and/or pictorially) of tens and ones (C)
- Composes and decomposes the structure of numbers 18 and 19 in terms of tens and ones (U&C)
- Discusses the groupings of tens (and ones left over) (C)

Learning experiences

- D** Digital activity: Same But Different – Numbers to 19  
**MAM Routine: Reason & Respond, with Think-Pair-Share**
- D** Digital activity: Dot Patterns (8)  
**MAM Routine: Quick Images, with Write-Hide-Show**
- D** Digital activity: Counting to 20 (1)  
**MAM Routine: Choral Counting**
- C** Concrete activity: Show Me!
- D** Digital activity: Winter Fun (3)  
**MAM Routine: Reason & Respond, with Think-Pair-Share**
- C** Concrete activity: Build It!
- P** Pupil's Book page 45: Numbers to 19

Equipment

- Manipulatives for counting, such as bears, links, cubes, counters and lollipop sticks with elastic bands
- Counting aids, such as number paths, ten frames, counting beads and rekenreks, number shapes and part-whole models (e.g. branching bond templates)
- Representations of 18 and 19 posters (printables)

Maths language

- eighteen, nineteen

Warm-up

Choose to do one of these warm-up activities on each day.



- D Digital activity: Same But Different – Numbers to 19** **MAM Routine: Reason & Respond, with Think-Pair-Share**

(Recommended for Day 4.)

Play the slideshow and, using Think-Pair-Share, ask the children to propose reasons for why the images are the same and why they are different.



- D Digital activity: Dot Patterns (8)** **MAM Routines: Quick Image, with Write-Hide-Show**

(Recommended for Day 5.)

Play the slideshow, which contains dots in a range of subitising patterns. Click to briefly reveal and then hide the image(s), and use Write-Hide-Show to collect feedback. Ask the children to share and discuss their estimates to see if they are reasonable. When several children have given their estimates, reveal the collection again and discuss the counting strategies used. Ask:

- What did you see?
- How did you come up with your answer?
- Did anyone see the number a different way?

Main event

Choose to do some or all over the two days.



- D Digital activity: Counting to 20 (1)** **MAM Routine: Choral Counting**

Choose a random number between 1 and 20 to begin. Ask a child to say this number and the next number. The class then counts forwards or backwards from there, with or without the audio.



- C Concrete activity: Show Me!**

Ask the children to show you the numbers 18 and then 19, in whatever way they choose. They could use materials (e.g. rekenreks, beads and strings, ten frames, number shapes or fingers in pairs), they could create sketches (e.g. tally marks) or they could write the numbers. After the children have used a variety

of manipulatives to show you the numbers, display the Representations of 18 and 19 poster printables to the class.

- D Digital activity: Winter Fun (3)** **MAM Routine: Reason & Respond, with Think-Pair-Share**



Play the slideshow, and click to play or ask:

- How many people can you see altogether?
- How many children are ice skating?
- How many ice-skating boots can you see?

- C Concrete activity: Build It!**

Ask the children to count out 18 interlocking cubes. They then link ten cubes together, in whatever bond of 10 they wish to use (9 + 1, 7 + 3, etc.). Ask:



- What bond did you use?
- Did anyone use a different bond?
- What do you notice? How many cubes are left over?
- So we have a 10 and an 8. How much is that?

Ask the children to repeat the activity above, this time with 19 cubes and using a different bond of 10.

Ask:

- What bond did you use?
- Did anyone use a different bond?
- What do you notice? How many cubes are left over?
- So we have a 10 and a 9. How much is that?

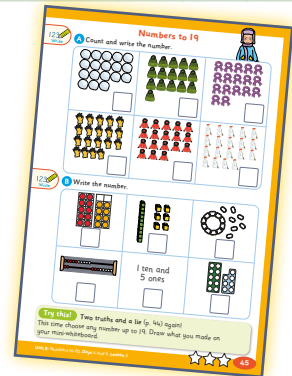
### Let's deepen

**Build it:** Can you use other classroom resources to represent the number? Show us.

**Sketch it:** Can you represent the number as a sketch? Show us.

**Write it:** Can you use words, branching bonds or number sentences to represent the number? Show us.

### P Pupil's Book page 45: Numbers to 19



## Optional consolidation and extension possibilities

**Hop and Count** (Integration with PE) In the PE hall or yard, tell the children to hop/jump/touch the ground 0–20 times while counting.

**Games Bank** Play 'Teen Pairs'.

**Sound of a Number** Tell the children to close their eyes and listen as you drop marbles or buttons into a tin, one by one. Ask them how many you dropped. Using Write-Hide-Show, the children could use number tallies or other marks to record their responses.

### Days 6 and 7, Lesson 4

## Numbers to 20

### Focus of learning (with Elements)

- Reads, writes and orders numerals up to at least 20 (U&C)
- Demonstrates an ability to subitise various arrangements or models of numbers to 20 (U&C)
- Investigates various arrangements (for example: on ten frames) of manipulatives to prompt different mental images of numbers up to 20, while developing a sense of each number (R)
- Orders and compares numbers 1–20 with each other (R)

### Learning experiences

- Concrete activity: Counting to 20  
**MAM Routine: Choral Counting**
- Concrete activity: Show Me!
- Concrete activity: Ordering Numbers 16–20
- Digital activity: Ordering Sets  
**MAM Routine: Think-Pair-Share**
- Concrete activity: Build It!
- Digital activity: Mystery Number (2) **MAM Routines: Concept Cartoon, with Think-Pair-Share**
- Pupil's Book pages 46–47: Numbers to 20

### Equipment

- Manipulatives for counting, such as bears, links, cubes, counters and lollipop sticks with elastic bands
- Counting aids, such as number paths, ten frames, counting beads and rekenreks, number shapes and part-whole models (e.g. branching bond templates)
- Representations of 16–20 posters (printables)

## Maths language

- twenty

## Warm-up

Choose to do one of these warm-up activities on each day.

**C Concrete activity: Counting to 20**  
**MAM Routine: Choral Counting**

(Recommended for Day 6.)

Ask the children to start counting forwards in ones from 1 to wherever you feel is an appropriate end number, e.g. 25. (While 25 has not been formally covered yet, many children will capably reach this number.) Pay particular attention to what they say after '8, 9, ..., 18, 19, ...'.

Say it, then see it: Ask the children to count again, but slowly, so that you can write the numerals as they count. Ask:

- What patterns do you notice?
- What is the same?
- What is different?

Mark or annotate these on the numbers.

If certain features are not mentioned by the children, draw their attention to them. Say/ask:

- Most have 'teen' at the end. Why?
- What does 'teen' mean? (i.e. ten and 'something')

Write a 'teen' number word on the board and underline the suffix 'teen'. Practise saying it with the children, ensuring that they hear the final consonant, 'n'. Make the connection between 'teen' and 'ten'. Highlight the inconsistencies of the language, and for fun, explore alternative, silly forms of the teen numbers: 11 – 'oneteen'; 12 – 'twoteen'; 13 – 'threeteen'; 15 – 'fiveteen'.



**C Concrete activity: Show Me!**

Ask the children to show you the number 20, using rekenreks, beads and strings, ten frames, tally marks, number shapes or fingers (in pairs). After the children have used a variety of manipulatives to show you the number, display the Representations of 20 poster printable to the class.

## Main event

Choose to do some or all over the two days.

**C Concrete activity: Ordering Numbers 16–20**

Ask the children to work in pairs and to use the Representations of 16, 17, 18, 19 and 20 poster printables. The children sequence the numbers in the correct order.



**D Digital activity: Ordering Sets**  
**MAM Routine: Think-Pair-Share**

Play the sequencing activity, in which the children put the sets in the correct order. Use Think-Pair-Share. During the 'Think' time, each child chooses the order of the sets using crayons, counters or cubes. For 'Pair' time, they discuss if they have the same order as their partner. For 'Share' time, choose one child to share their order on the IWB.

**C Concrete activity: Build It!**

Ask the children to count out 20 interlocking cubes. They then link ten cubes together, in whatever bond of 10 they wish to use (9 + 1, 7 + 3, etc.). Ask:

- What bond did you use?

- Did anyone use a different bond?
- What do you notice? How many cubes are left over?
- So we have a 10 and a 10. How much is that?

## Let's deepen

**Build it:** Can you use other classroom resources to represent the number? Show us.

**Sketch it:** Can you represent the number as a sketch? Show us.

**Write it:** Can you use words, branching bonds or number sentences to represent the number? Show us.

**D Digital activity: Mystery Number (2)**  
**MAM Routines: Concept Cartoon, with Think-Pair-Share**

Display the Concept Cartoon, in which the characters are guessing which number is in the box. Click each character to hear their thoughts. Use Think-Pair-Share to collect feedback.

**Let's strengthen**

Some children might need the support of a number path.

**Let's deepen**

Prompt the children to find more than one answer that they agree with or disagree with.

**P Pupil's Book pages 46–47: Numbers to 20****Optional consolidation and extension possibilities**

**Story** Read *20 Hungry Piggies* by Trudy Harris and *Have You Seen My Dragon?* by Steve Light, both of which include numbers up to 20. Listen to readings at [edco.ie/hjuw](http://edco.ie/hjuw) and [edco.ie/v28r](http://edco.ie/v28r)

**Hop and Count** (Integration with PE) In the PE hall or yard, tell the children to hop/jump/touch the ground 0–20 times while counting.

**Games Bank** Play 'Teen Pairs'.

**Estimation Station** Remind the children to submit estimates, count the items and/or set up a new station.

**Maths Journals** The children draw/write/stick images of a chosen number (16–20) in their Maths Journals. They could also record what they built during the main part of the lesson.

**Home/School Links Book** Page 21 can be completed any time after this lesson.

**Days 8 and 9, Lesson 5****How Many?****Focus of learning (with Elements)**

- Selects and uses appropriate materials to make a variety of sets for a given number (A&PS)
- Uses a range of counting strategies to determine quantities and justifies their efficiency (A&PS)

**Learning experiences**

- D** Digital activity: Same But Different – How Many?  
**MAM Routine: Reason & Respond, with Think-Pair-Share**
- C** Concrete activity: Show Me!  
**MAM Routine: Reason & Respond**
- D** Digital activity: Which One Doesn't Belong? (7)  
**MAM Routine: Reason & Respond**
- D** Digital activity: Snowball Stack  
**MAM Routine: Three-Act Task**
- D** Digital activity: Counting to 20 (2)  
**MAM Routine: Choral Counting**
- D** Digital activity: Where in the Queue? (2)  
**MAM Routine: Reason & Respond**
- P** Pupil's Book pages 48–49: How Many?

**Equipment**

- Manipulatives for counting, such as bears, links, cubes, counters and lollipop sticks with elastic bands
- Counting aids, such as number paths, ten frames, counting beads and rekenreks, number shapes and part-whole models (e.g. branching bond templates)
- PCM 24

## Maths language

- There is no new maths language for this lesson.

## Warm-up



- D Digital activity: Same But Different – How Many?** *MAM Routine: Reason & Respond, with Think-Pair-Share*

(Recommended for Day 8.)

Play the slideshow and, using Think-Pair-Share, ask the children to propose reasons for why the images are the same and why they are different.

- C Concrete activity: Show Me!**  
*MAM Routine: Reason & Respond*

(Recommended for Day 9.)

Using manipulatives of their choosing, tell the children to show you 18. Ask:

- Did anyone do it differently?

- Show me one more way, using your MWB.
- Did anyone choose to draw 15?
- Can you find someone in the class who showed me the number the same way as you did? Go hunting!
- Show me 16/19/20/17.
- Did anyone do it differently?

## Teaching tip

Allow time to discuss who represented the numbers the same or differently (e.g. 'We both used tallies, so that's the same. '; 'Anna wrote horizontally, while Billy wrote vertically, so that's different.')

## Main event

Choose to do some or all over the two days.



- D Digital activity: Which One Doesn't Belong? (7)**  
*MAM Routine: Reason & Respond*

Play the slideshow and ask the children to explain why they think each number does not belong.



- D Digital activity: Snowball Stack**  
*MAM Routine: Three-Act Task*

**Act 1: Notice & Wonder**

Play the animation, in which Dara and Mia are making a stack of snowballs for a snowball fight. Click to play or ask:

- What do you notice?
- What do you wonder? (Note any wonderings that may become the basis for a subsequent maths investigation.)
- (Reveal the focus question.) How many snowballs are in the stack?

**Act 2: Productive Struggle**

Look at the image and click to play or ask:

- Make an estimate that is too high.
- Make an estimate that is too low.
- Make an estimate that is reasonable.

The children work in pairs or small groups to answer the focus question. If necessary, prompt them by asking:

- Do you have enough information?
- What else do you need to know?

Once the children explain that they need to know how many snowballs are hidden, and that the snowballs need to be rearranged, click to reveal the second image, which shows the snowballs arranged in an array of 10 with two rows of 5, and more left in the pile. Pause to allow the children to work towards an answer, then click to play or ask:

- What do you know?
- To get an answer, what needs to be done?
- How might we do this?

Using Build it; Sketch it; Write it, the children use their own preferred way to mathematically model their strategies/solution(s). They can use PCM 24 Snowball Stack if they wish.

**Act 3: The Big Reveal**

The children share and discuss their strategies, models and solutions. Click to play or ask:

- What answer did you get?
- How did you get that answer?
- What was difficult? What was easy? (Pause for the children's feedback.)

Next, click to reveal the image of all the snowballs, no longer stacked. Click to play or ask:

- Is this the answer that you expected? Why or why not?

- What 'I wonder' questions did you answer?
- Do you have any new 'I wonder' questions?

**D Digital activity: Counting to 20 (2)**  
**MAM Routine: Choral Counting**

Choose a random number between 1 and 20 to begin. Ask a child to say this number and the next number. The class then counts forwards or backwards from there, with or without the audio.

### Let's deepen

As the children become more confident and competent, challenge them further by asking them to count backwards from various starting points.

**D Digital activity: Where in the Queue? (2)**  
**MAM Routine: Reason & Respond**

Play the slideshow, in which the characters are standing in different queues. Click to play the audio questions about the characters' positions in each queue.

**P Pupil's Book pages 48–49:**  
**How Many?**



### Let's deepen

For further opportunities page 48 of the Pupil's Book, complete Part B of the Unit 8 Let's Deepen PCM.

### Let's strengthen

For further support for page 49 of the Pupil's Book, use the Unit 8 Let's Strengthen PCM.

## Optional consolidation and extension possibilities

**Games Bank** Play 'Teen Pairs'.

**Home/School Links Book** Page 22 can be completed at any time after this lesson.

**Maths Journals** Using images and/or words, the children represent the numbers 16–20 covered in this unit. They could also stick in images from brochures (e.g. images of sets) that represent some of these numbers.

## Day 10, Lesson 6

## Review and Reflect

## Focus of learning (with Elements)

- Reviews and reflects on learning (U&C)

## Warm-up

Carry out a warm-up activity of your choice from one of the lessons in this unit.

## Main event

Choose from this menu of activity ideas, or choose your own way to best structure this last lesson to suit your needs and the needs of your class.

<b>Let's talk!</b>	<b>Let's play!</b>
Use Think-Pair-Share to review the unit. Individual children could present examples of their own drawings/work/constructions to the class, and talk about what they have learned.	Play 'Add 10 Snap' or 'Domino Draw Totals' from the Games Bank.
<b>Maths language</b>	<b>Maths strategies and models</b>
Ask the children to explain the following terms (perhaps using examples or drawings on their MWBs): <i>sixteen, seventeen, eighteen, nineteen, twenty</i> . Use the Unit 8 Maths Language Cards to revise the key terms. For example: if the image and text are cut apart, can the children match them?	Ask the children to give examples of the strategies they used in this unit. Which strategies and models did they prefer and why?
<b>Progress Assessment Booklet</b>	<b>Maths Stations</b>
Complete Questions 34–38 on pages 18–19. Alternatively, these can be left to do as part of a bigger review during the next review week.	Provide manipulatives for the children to represent the numbers 16, 17, 18, 19 and 20. Then use the children's representations to make a display for each of the numbers.
<b>Let's strengthen</b>	<b>Let's deepen</b>
Identify children who might benefit from extra practice with some of the key concepts or skills in this unit. Consult the Unit 8 Let's Strengthen Suggestions for Teachers and/or use the Unit 8 Let's Strengthen PCM.	Use the Unit 8 Let's Deepen PCM.

