

Maths and Me: Junior Infants – Short-Term Plan, Unit 3: Numbers 1 to 3 (October: Weeks 3&4)

Strand(s) > Strand Unit(s)

Number > Uses of Number, Sets and Operations; Numeration and Counting; Place Value and Base Ten. Algebra > Patterns, Rules and Relationships.




Learning Outcome(s)

Through appropriately playful and engaging learning experiences children should be able to develop an awareness that numbers have a variety of uses; recognise and understand what happens when quantities (sets) are partitioned and combined; develop an awareness that the purpose of counting is to quantify; use a range of counting strategies for a range of purposes; develop a sense of ten as the foundation for place value and counting; explore, extend and create patterns and sequences.

Lesson	Focus of Learning (with Elements)	CM	Learning Experiences	Assessment
1	Exploring and Counting Numbers: Demonstrates an awareness of number and number word sequencing through song, stories, rhymes and games (U&C); Explores how numbers are used for quantifying and that the last number in the count indicates the quantity of objects in a set (U&C); Counts objects or people by touching, gesture or verbalisation from 1. (C)		D Choral Counting L1–8 D Reason & Respond L1–8 C Class Clothesline L1 C Counting Manipulatives L1 D Notice & Wonder L2 C Nature Walk Count L2	Intuitive Assessment: responding to emerging misconceptions
2	Real-life Counting: Investigates and undertakes tasks involving counting in real-life situations and other areas of learning (A&PS); Engages in counting of concrete objects in their environment (U&C); Substitises amounts of 1, 2, 3 objects and checks the count (U&C); Demonstrates a growing understanding of the five principles of counting (one-one, stable order, cardinal, order relevance and abstraction) (U&C)		D C Sorting Numbers and Letters L3 C Matching Numerals to Sets L4 C Game: After, Before and In-between L5 C Think-Pair-Share L5, L6 D Quick Images L6, 8 D Order the Dots L6 C Combining and Partitioning Manipulatives L7	Planned Interactions: responding to insights gleaned from children's responses to learning experiences
3	Exploring Symbols: Distinguishes numerals from letters and other symbols (R); Sorts sets of symbols into numerals and letters (A&PS); Recognises numerals in the immediate environment (U&C)			
4	Matching Numerals to Sets: Matches numerals to sets and to other numerals in a variety of contexts (A&PS); Connects numbers to counted objects (U&C); Selects and uses appropriate materials to make a variety of sets for a given number (A&PS); Sorts items into sets by quantity (U&C); Uses appropriate strategies to find out how many (A&PS); Recognises that objects and symbols can represent number (U&C)			
5	Ordinality of Number: Explains ordinality using the language of <i>after</i> , <i>before</i> and <i>in-between</i> (C)			
6	Ordering of Number: Represents quantities, order and labels by numerals (R); Orders and distinguishes between sets without counting (subitising) and checks by counting (R); Engages in classifying, matching, sorting and ordering activities (A&PS)		C Game: Domino Match L7 C Game: Body Numerals L8 C Maths Stations L8	Assessment Events: information gathered from completion of the unit assessment in the Progress Assessment Booklet pages 9–10
7	Composition of Number: Attends to activities where quantities (1–3) are combined and partitioned (U&C); Combines and partitions sets of two or more objects (U&C); Focuses on the counting, cardinality and composition of numbers (1–3) (U&C)		D Number Formation – 1 to 3 L8	
8	Making Numerals 1 to 3: Focuses on the order, conservation and cardinality of numbers (1–3) (U&C); Makes numerals creatively (C); Represents numbers using informal symbols (e.g. fingers, tallies of marks and pictures), and begins to record such numbers (C); Explores numerals in 2-D and 3-D sensory form (e.g. tracing numbers on paper and in sand) (U&C); Discusses, draws and writes representations of numbers (1–3), using manipulatives (C)		Print resources Pupil's Book pages 16–22 Home/School Links Book pages 10–11 PCMs 9, 13, 15, 16	
9	Review and Reflect: 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 Miosúil:** 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

 Progression Continua	See 'Junior Infants <i>Maths and Me</i> Progression Continua Overview' for a detailed breakdown of how all progression continua are covered.
 Maths Language	See 'Junior Infants <i>Maths and Me</i> Maths Language Overview', individual lesson plans and Unit 3 Maths Language Cards
 Equipment	See 'Junior Infants <i>Maths and Me</i> Maths Equipment Overview' and individual lesson plans.
Inclusive Practices	<ul style="list-style-type: none"> ● See Let's Strengthen and Let's Deepen suggestions throughout lesson plans. ● See Unit 3 Let's Strengthen Suggestions for Teachers. (These address the Common Misconceptions and Difficulties listed on the next page.) ● See Unit 3 Let's Strengthen PCM. ● See Unit 3 Let's Deepen PCM.
Integration	See individual lesson plans.

Background and rationale

- The children are counting from 1 to 10 in the correct order. Counting from 1 to 10 puts the numbers 1 to 3 in context. The children are not expected to count an amount of objects more than 3, or recognise the numerals 4 to 10. They will be focusing on counting, and the numeration and composition of numbers 1 to 3. They use one-to-one correspondence, where initially they are giving each object a 'name', i.e. a verbal numeral (leading to assigning a printed numeral).
- One of the key skills of counting is understanding that the last number is the total count, so plenty of use of concrete materials is needed.
- The children also begin to form an understanding of the conservation of number where the amount of objects remains the same, regardless of reconfiguration, i.e. in a line or circle, or spread out. They also acquire the skill of counting an amount of objects from a greater amount of objects (e.g. taking 3 objects from a set of 5 objects). Many children will 'double count' or take the whole set.
- A cornerstone of understanding, for example, the 'threeness of three' is composition of number, where the number is broken down and then reconstructed. In this way, the children discover how, for example, the number 3 is made up of both 1 and 2, and 2 and 1. They experience how, for example, 3 counters can be broken down into 2 red counters and 1 blue counter, and how these counters can be put back together again to make 3. Using small quantities of concrete materials lays the foundation for later work in the operations of adding and subtraction.
- It is of key importance that children see the application of numbers and counting outside the classroom environment, so there should be plenty of opportunities to extend their experience.
- While a key aspect of learning about a number is learning to form the numeral, this is generally seen as the last stage of number recognition, following ample opportunities to recognise, identify, sequence and order. Furthermore the PMC introduces the writing of numerals only in progression milestone 'd'. Therefore, in *Maths and Me* Junior Infants, numeral formation comes at the end of a unit. Further supports for numeral formation can be found in the PCMs and Printables. We would also recommend that the children trace over the relevant tactile numbers in their pupil book and take every opportunity to make numerals creatively (e.g. in the sand area, during visual arts/crafts sessions, using manipulatives/ playdough). See the various relevant lesson plans for further details and ideas.

The theme of this unit is **Autumn**.

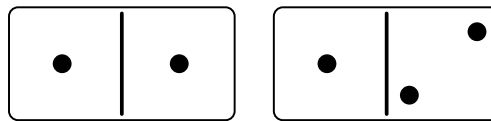
Common misconceptions and difficulties

- Children can become confused with words that have the same sound but different meanings, e.g. *one* and *won*; *two* and *to/too*; *for* and *four*; *ate* and *eight*.
- There is a lot of additional vocabulary to make sense of: *after*, *before*, *in-between*, *right order*, *take away*, *break up*. It is very helpful to make up small stories for this age group (*There were two frogs, but one frog hopped away.*)
- Making the link between the numeral, the number word and the objects (concrete and pictorial) requires engaging in multiple hands-on activities that reinforce this concept.
- The children can mix up letter symbols and number symbols, e.g. 1 (the numeral) and l (the letter); the number 5 and the letter S; the number 8 and the letter B.

The Unit 3 Let's Strengthen Suggestions for Teachers address the common misconceptions and difficulties listed above.

Mathematical models and representations

- Set rings
- Tactile numerals
- Number-line flip chart
- Domino pieces and numbers
- Dot cards



Domino pieces

Teaching tip

Sorting Circles (which can be used as set rings, along with a stick or pencil) and Domino Pieces manipulative printables are available to support this unit. Click on the resources icon on the *Maths and Me* book cover on edcolearning.ie.

Day 1, Lesson 1

Exploring and Counting Numbers

Focus of learning (with Elements)

- Demonstrates an awareness of number and number word sequencing through song, stories, rhymes and games (C)
- Explores how numbers are used for quantifying and that the last number in the count indicates the quantity of objects in a set (U&C)
- Counts objects or people by touching, gesture or verbalisation from 1 (C)

Learning experiences

- D** Animation: Maths Choir (Numbers 1 to 10)
MAM Routine: Choral Counting
- D** Digital activity: Count with Monty
MAM Routine: Choral Counting; Reason & Respond
- C** Concrete activity: Class Clothesline
- C** Concrete activity: Counting Manipulatives
- P** Pupil's Book page 16: Exploring and Counting Numbers

Equipment

- Numerals 1 to 10 on the class clothesline
- Manipulatives (bears, counters, beads, collections of items)
- Cup
- Monty the puppet

Maths language

- numbers 1 to 10
- (informal use of: take one away, add one more, break up)

Warm-up

- D** **Animation: Maths Choir (Numbers 1 to 10)**
MAM Routine: Choral Counting

Play the animation. The children chant the numbers 1 to 10, using their fingers. You can assess the children's sequencing of number skills. (You will have been counting informally since early September, but this is a formal opportunity for assessment).



Teaching tip

It is recommended to carry out this Choral Counting activity at the start of each lesson in this unit.

Children can count aloud to larger numbers, without expecting them to count that number of objects.

- D** **Digital activity: Count with Monty** **MAM Routines: Choral Counting; Reason & Respond**

Use Monty the puppet alongside this digital counting activity. Tell the children to count with Monty and help him name the numbers.

Assess the following:

- Are they counting in sequence (not missing any number)?
- Are they counting each number (once not twice)?
- Can they start at a number and count on?
- Can they stop at a designated number?
- Can they recognise each number and its position?

- C** **Concrete activity: Class Clothesline**

You will need the class clothesline with numerals 1 to 10 for this activity. Begin by asking:

- Can three children come up to me? (The class should help you to count 1, 2, 3 as you touch the head of each child.)

Move the children around in the 'set' and ask:

- How many children are there now?

Notice if any children in the class need to recount.

Say:

- We have a set of three children. (Emphasise the last number in the count: 1, 2, 3.)

Take away one child and ask:

- How many children are there now?

Add the child back and ask:

- How many children are there now?
- Can someone get me the correct number from our clothesline?
- What will we do with this number 3? (Give it to the set of three children.)

Continue making sets of 1, 2, 3 children and 'matching' the numerals to the sets.

Main event

C Concrete activity Counting Manipulatives

Distribute the manipulatives to each group. Initially they should have one type of manipulative, e.g. counters. When you judge that they are ready, move on to assorted items. Ask:

- Can you guess (subitise) how many ... (e.g. bears) there are?
- Are you correct? Let's count and find out.
- If I move this bear, how many bears are there?
- If I put the bears in a little group (as opposed to in a line) how many bears are there?
- How will you count them?
- Can you give me three bears (from a larger amount of bears)?
- Can you make a set of 2? A set of 1? A set of 3?

Assess whether each child is counting the items correctly, i.e. touching each object and giving it a number name as they count.

Pair work: Can you give 1/2/3 counters to your partner (from a larger set)?

Let's deepen

Ask:

- Can you turn your set of 3 into a set of 2? How will you do that? (Take one away.)
- Can you turn your set of 2 into a set of 3? How will you do that? (Add one more.)

Teaching tip

Assess whether the children know the *order* in which to count (1, 2, 3); are using one-to-one correspondence (assigning a number name to each object); that the last number is the *total* count; and that they understand conservation of number.

Let's deepen

Ask:

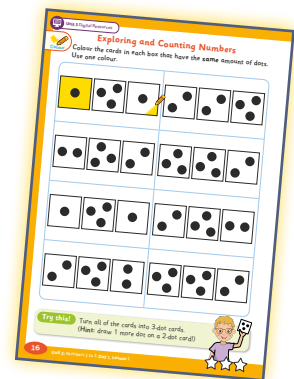
- Can you break up your set of 3? How did you break it up?

Let's deepen

You will need three counters and a cup. Beginning with two counters, say/ask:

- I have two counters here.
- I put one counter under the cup.
- How many counters do I have left in my hand?
- Now, everybody, close your eyes. (Put one counter under the cup.)
- Open your eyes.
- How many counters are under the cup? (Continue with three counters.)

P Pupil's Book page 16: Exploring and Counting Numbers



Optional consolidation and extension possibilities

Number of the Day (or Week) The children can decide which number (1, 2 or 3) they would like to make 'Number of the Day'. Using PCM 8: Numerals 1, 2 and 3 (Large) and maths language cards (one, two, three), stick the numeral and its number name above a small table. The children should make sets of the number, e.g. a set of 3 conkers and a set of 3 lunch boxes, and put them on the table. Using real-life

objects makes numeration part of the children's wider experience. The correct small numeral from PCM 9: Numerals 1, 2 and 3 (Small) should be placed beside each set. (Change the number at the beginning of the next day/week.)

Jump Out of My Boat! Place sheets of newspaper on the floor to make a 'boat' shape. Three children are counted and take up their positions in the boat.

One of the three is the captain. (They could take turns.) The captain commands one child/two children to: 'Jump out of my boat!' The class count the remaining children. The captain then commands other children to: 'Jump onto my boat!' The class count the additional children. Play the following song, just focusing on 1,2,3. edco.ie/4yya

Irish Dancing (Integration with PE) Teach the children the first steps to Irish dancing: 1, 2, 3 and 1, 2, 3.

Musical Chairs Put three chairs out on the floor. Ask: *How many chairs are there?* Nominate four children to come up. Ask: *Are there enough chairs for everyone?* (No.) *How many chairs will I add?* Now, *are there enough chairs for everyone?* Play some music. Take one chair away. Continue until one child wins the game.

Day 2, Lesson 2

Real-life Counting

Focus of learning (with Elements)

- Investigates and undertakes tasks involving counting in real-life situations and other areas of learning (A&PS)
- Engages in counting of concrete objects in their environment (U&C)
- Subitises amounts of 1, 2, 3 objects and checks the count (U&C)
- Demonstrates a growing understanding of the five principles of counting (one-one, stable order, cardinal, order relevance and abstraction) (U&C)

Learning experiences

- D** Digital activity: Numbers 1 to 10
MAM Routine: Choral Counting
- D** Digital activity: Real-life Counting
MAM Routines: Notice & Wonder; Reason & Respond
- C** Concrete activity: Nature Walk Count
- P** Pupil's Book page 17: Real-life Counting

Equipment

- A small bag for each child to collect materials during a nature walk
- Materials found on the nature walk (cones, feathers, leaves, bits of bark, twigs, pebbles, etc.)

Maths language

- There is no new maths language for this lesson.

Warm-up

- D** **Digital activity: Numbers 1 to 10**
MAM Routine: Choral Counting

Using the counting tool, ask the children to chant the numbers 1 to 10, using their fingers. (Or, replay the Maths Choir animation from Lesson 1.)

- D** **Digital activity: Real-life Counting MAM Routines: Notice & Wonder; Reason & Respond**

Display the poster and explore all the counting possibilities shown. The images may spark additional discussion of examples of counting. Click to play or ask the following questions:

- What can you see on the poster?
- How many children are on the slide?
- How many children are on the trampoline?
- Can you count the sheep?
- How many dogs can you see?
- Can you count the balloons?
- Can you count the oranges?
- How many pictures show children?
- Can you count the pictures that show animals?
- How many pictures show orange things?

Now ask the children the following questions:

- What could you count at home? (e.g. place settings, chairs, steps, teddies, biscuits, treats, books)
- What could you count in the supermarket? (e.g. fruit, vegetables)
- What could you count at the playground? (e.g. slides, swings, see-saws)

Main event

C Concrete activity: Nature Walk Count

Assess the children's counting skills (the one-to-one principle and the cardinal principle).



Distribute a small bag to each child and go on a nature walk. When you return to the classroom, each child displays and explores the objects they collected. Ask them to explain why they collected particular items. Tell them they are going to sort their objects. Ask:

- How will you sort all your different objects?

The children sort their objects into sets according to their own criteria (e.g. big/small things; green/brown things; soft/hard things; long/short things; heavy/light things). When the objects have been sorted, the children should subitise and then count the objects in each of their sets. They are making sets of 1, 2 and 3. Ask:

- If you wanted to put *more* leaves in that set of 2, what could you do? (Ask a friend for a leaf.)
- Now, how many leaves do you have?

Provide support if any set 'accidentally' goes above 3.

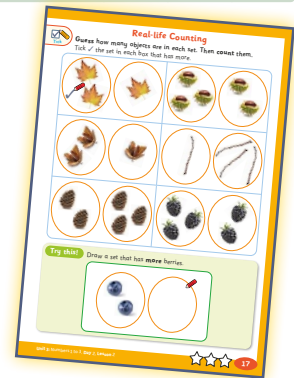
Let's deepen

The children compare two sets and find out which set has more, using one-to-one correspondence and then by counting. Ask:

- Which set has more? How many more ... (e.g. pebbles) are there in this set?
- Which set has less?
- Can you make the two sets the same?
- How will you do that?

Next, the children put all the items in the middle of the table, and then sort them into, for example, a set of twigs, or a set of cones. They should subitise and then count the number of objects in each set.

P Pupil's Book page 17: Real-life Counting



Optional consolidation and extension possibilities

Music Use a simple 1-2-3 beat to create percussion. One group of children could clap 1, 2, 3. A second group could use a percussion instrument. And a third group could use body percussion or an object (e.g.

tap a pencil). Orchestrate the whole piece, with one group coming in as another is going out.

Home/School Links Book Page 10 can be completed any time after this lesson.

Day 3, Lesson 3

Exploring Symbols

Focus of learning (with Elements)

- Distinguishes numerals from letters and other symbols (R)
- Sorts sets of symbols into numerals and letters (A&PS)
- Recognises numerals in the immediate environment (U&C)

Learning experiences

- D** Animation: Maths Choir **MAM Routine: Choral Counting**
- D** Digital activity: Which Number Am I?
MAM Routine: Reason & Respond
- D** Digital activity: Sorting Numbers and Letters
- C** Concrete activity: Sorting Numbers and Letters
- P** Pupil's Book page 18: Exploring Symbols

Equipment

- Tactile numerals 1 to 10
- Tactile letters
- Tactile numerals in Pupil's Book
- Examples of real-life numbers (e.g. birthday cards, birthday badges, calendars)
- Examples of real-life letters (e.g. cut from magazines)

Maths language

- letters, signs

Warm-up



- D** **Animation: Maths Choir**
MAM Routine: Choral Counting

Play the animation. The children chant the numbers 1 to 10, using their fingers.



- D** **Digital activity: Which Number Am I?**
MAM Routine: Reason & Respond

Assess which children are having difficulty identifying individual numbers.



Play the interactive game, which slowly reveals each number from 1 to 3. The children guess which number will be revealed. Ask the children to say the name of the number as soon as they recognise it.

- D** **Digital activity: Sorting Numbers and Letters**

Play the interactive sorting game, in which the children will sort symbols into two groups – letters or numbers.



Main event

- C** **Concrete activity: Sorting Numbers and Letters**

Distribute tactile numerals and letters (if you have them, e.g. sandpaper numerals, magnetic numerals) and examples of 'real-life' numbers and letters to each group. The children sort the collection into numbers and letters. Ask:

- Which one is a number/letter?
- How do you know?
- Can you tell me about the shape of this number?

Focus their attention on the shape of the numbers 1, 2, 3, but let them explore the other numbers as well.

Explore their recognition of each numeral by using the tactile numerals 1, 2, and 3. Ask:

- Which number is this? (2)
- How do you know?
- Which number is this? (3)
- Can you find number 1?

Let's deepen

Cut out and distribute the symbols from PCM 10: Letters a–z, PCM 11: Numerals 1–10, PCM 12: Signs Around Us. Ask:

- Are there any signs with numbers on them?
- Are there any signs with letters on them?

The children sort the collection into numbers (single numbers and signs with numbers on them) and letters (single letters and signs with letters on them).

Let's strengthen

The children trace over the tactile numerals in their Pupil's Book with their finger. They name each number as they trace (in the sequence 1 to 3).

Teaching tip

Some children will recognise numerals 1 to 3 from Early Years settings, but others will need plenty of practice in identifying numerals in different locations, positions and representations.

P Pupil's Book page 18:
Exploring Symbols



Optional consolidation and extension possibilities

Exploring Symbols (Integration with PE) This activity should be carried out in the PE hall. You will need to make two copies each of PCM 10, PCM 11 and PCM 12. Cut out all the symbols (or ask the children to help you cut them out) and organise them into two identical sets. Divide the class into two same-size groups and distribute one set of symbols to each group. The first pair of children with three

matching symbols (e.g. a number, a letter and a sign) wins the game. (You could simplify this by just distributing numbers and letters. You might need a few practice runs!)

Letters or Numbers Play the multiple-choice game. Ask the children to decide which picture shows numbers.

Days 4 and 5, Lesson 4

Matching Numerals to Sets

Focus of learning (with Elements)

- Matches numerals and number words to sets and to other numerals in a variety of contexts (A&PS)
- Connects numbers to counted objects (U&C)
- Selects and uses appropriate materials to make a variety of sets for a given number (A&PS)
- Sorts items into sets by quantity (U&C)
- Uses appropriate strategies to find out how many (A&PS)
- Recognises that objects and symbols can represent number (U&C)

Learning experiences

- D** Digital activity: Numbers 1 to 10 **MAM Routine: Choral Counting**
- D** Digital activity: Real-world Numbers **MAM Routine: Reason & Respond**
- C** Concrete activity: Matching Numerals to Sets
- P** Pupil's Book page 19: Matching Numerals to Sets

Equipment

- Manipulatives (e.g. bears, counters, beads)
- Tactile numerals
- PCMs 9, 13

Maths language

- There is no new maths language for this lesson.

Warm-up

D Digital activity: Numbers 1 to 10
MAM Routine: Choral Counting

Using the counting tool, ask the children to chant the numbers 1 to 10, using their fingers.

D Digital activity: Real-world Numbers
MAM Routine: Reason & Respond

Display the poster and discuss the real-life examples of numbers shown. Click to play or ask:

- What numbers can you see on the poster? (This is another opportunity for numeral identification.)
- What items on the poster could you count?
- What is the number on the blue door?
- What are the numbers above the black doors?
- What is the number on the wall?
- What numbers can you see on the hopscotch game?
- What number can you see in the car park?
- What number can you see on the sign in the street?
- Where else can you see numbers on a street?
- Did you see any numbers on your way to school today?

You could also ask:

- Can you see any numbers in the classroom?
- Are there sets/groups of items in the classroom that you could count? (e.g. three books on a table, two pencils at a desk)

Main event

Teaching tip

When working closely with your groups over the next two days, use this opportunity to assess their understanding of numeration and their counting skills.

C Concrete activity: Matching Numerals to Sets

Distribute manipulatives, tactile numerals 1, 2 and 3 and small numerals 1, 2 and 3 (cut out from PCM 9: Numerals 1, 2 and 3 (Small)) to each group. Split the activities over the two days as follows.



Day 4

- Matching numerals from PCM 9: Numerals 1, 2 and 3 (Small) to tactile numerals and 'real-life' numerals from PCM 13: Real-World Numbers
- Subitising amounts of 1, 2, 3 objects and then counting

- Making a variety of sets of 1, 2, 3 objects (using the same or different objects and arranging them in different ways)

Day 5

- Matching numerals to sets of 1, 2, 3 of the same object, and then assorted objects
- Taking a numeral and counting out the corresponding number of objects
- Taking one object from a larger amount and assigning the correct numeral. (Repeat for two objects and then three objects.)

P Pupil's Book page 19: Matching Numerals to Sets



Optional consolidation and extension possibilities

Group Dash (Integration with PE) This activity should be carried out in the PE hall. You will need the following representations of numerals: PCM 8: Numerals 1, 2 and 3 (Large), maths language cards (one, two, three) and PCM 14: Sets of 1, 2 and 3. Hold up a representation (e.g. the numeral 3, the word

'three' or a set of three objects), or call out the number, or clap that number of times. The children then arrange themselves into groups of this number. Any 'leftover' children must try to make a group of this number or they are out!

Day 6, Lesson 5

Ordinality of Number

Focus of learning (with Elements)

- Explains ordinality using the language of *after*, *before* and *in-between* (C)

Learning experiences

- D** Animation: Maths Choir **MAM Routine: Choral Counting**
- D** Toolkit: Number Line Flip Chart **MAM Routine: Reason & Respond**
- C** Game: After, Before and In-between
- C** Concrete activity: Ordinality of Number
MAM Routines: Reason & Respond, with Think-Pair-Share
- P** Pupil's Book page 20: Ordinality of Number

Equipment

- Numerals 1 to 10 on the class clothesline
- Manipulatives (e.g. bears, counters, beads)
- PCM 9
- Unit 3 Maths Language Cards

Maths language

- after, before, in-between, order, first, last, in order

Warm-up

**D Animation: Maths Choir**
MAM Routine: Choral Counting

Play the animation. The children chant the numbers 1 to 10, using their fingers.

**D Toolkit: Number Line Flip Chart**
MAM Routine: Reason & Respond

Display the interactive number line flip chart (or use a concrete number flip chart if you prefer). Use numbers 1 to 10 but focus on 1 to 3. Ask:

- Can you name each number? (Some children may be able to do this.)
- Which number comes after/before ... (e.g. 3)?
- Which number comes in-between 1 and 3? How do you know?
- (Hide a number, e.g. 3.) What number is missing? How do you know?
- (Hide a number, e.g. 2.) What number comes before/after this missing number?
- Which number would you prefer: 1, 2 or 3? Why?

Call three children up beside you. Ask a fourth child to take the numerals 1, 2 and 3 from the clothesline and to assign a numeral to each of the three children, from left to right, to make a human number line. Ask:

- How did you know how to put the numbers in the right order (1, 2, 3)?
- Which is the biggest/smallest/in-between number?

- Which number comes after/in-between/before ...?

The three children then mix themselves up and the other children can reorder them again.

Teaching tip

You can assess and reinforce the cardinality of number by asking:

- How *many* children have we got?



Children can easily become confused with ordinality and cardinality.

C Game: After, Before and In-between

Using the maths language cards (after, before, in-between), show the following words to the children: *after*, *before* and *in-between*. You are not expecting them to read the words, but some children may be able to 'sight read' them. You could also draw their attention to 'a' for *after* and 'b' for *before*. Call three children up beside you and give one of the three words to each. They arrange themselves in accordance with the three words. The rest of class could help out. Ask:

- Who is in-between Sarah and Lily? (Liam)
- Who is before Liam?
- Who is after Liam?

Can the children assign each word to the correct child?

Main event

C Concrete activity: Ordinality of Number
MAM Routines: Reason & Respond, with Think-Pair-Share

Distribute manipulatives to each group. The children will make a set of three different objects, e.g. a red bear, a yellow bear and a blue bear. Ask:

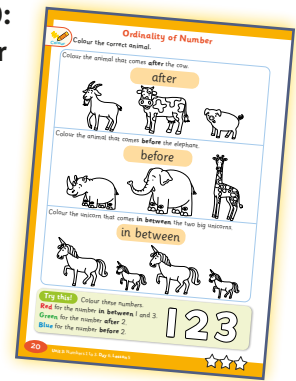
- Which colour bear is in-between? (e.g. red)
- Which colour bear comes after the red bear?
- Which colour bear comes before the red bear?

Pair work: The children place three objects on their table, e.g. a pencil, an eraser and a sharpener. They ask their partner questions, such as:

- Where is the eraser?
- What comes after the eraser?

Distribute small numerals 1 to 3 from PCM 9: Numerals 1, 2 and 3 (Small) to each pair. The children place the numerals on the table. The same questions are posed. Mix up the numerals and ask the children to reorder them.

P Pupil's Book page 20: Ordinality of Number



Optional consolidation and extension possibilities

Number Path/Hopscotch (Integration with PE) This activity should be carried out in the PE hall. The children hop/jump along a large number path or hopscotch grid as they count out 1 to 10. Tell them to stop on certain numbers, and then to move forwards one step/hop. Ask them which number is next/ in-between/after/before.

Make Three (Integration with PE) This activity should be carried out in the PE hall. Use the maths language cards (after, before, in-between). Choose three children and give each child one of the following cards: *before*, *after* and *in-between*. The three children stand at the top of the hall to demonstrate

what will be required of the rest of the class. Divide the class into three equal groups – a ‘before’ group, an ‘in-between’ group and an ‘after’ group. (If you can’t make three equal groups, add yourself to a group or ask a child/two children to ‘help’ you.) When you shout ‘Go!’, the children arrange themselves into groups of three that mirror the three children at the top of the hall (i.e. one from the ‘before’ group, one from the ‘in-between’ group and one from the ‘after’ group, standing in the correct order). The first group of three to arrange themselves win the game. (No doubt chaos will ensue, but there will be plenty of fun and learning as well!)

Day 7, Lesson 6

Ordering of Number

Focus of learning (with Elements)

- Represents quantities, order and labels by numerals (R)
- Orders and distinguishes between sets without counting (subitising) and checks by counting (R)
- Engages in classifying, matching, sorting and ordering activities (A&PS)

Learning experiences

- D** Digital activity: Numbers 1 to 10 **MAM Routine: Choral Counting**
- D** Digital activity: Arrays of Dots **MAM Routine: Quick Images**
- C** Concrete activity: Ordering Sets and Assigning Numerals
MAM Routines: Reason & Respond, with Think-Pair-Share
- D** Digital activity: Order the Dots

Equipment

- Manipulatives (e.g. bears, counters, beads)
- Tactile numerals
- PCM 9
- Numeral posters (printable)

Maths language

- There is no new maths language for this lesson.

Warm-up

D Digital activity: Numbers 1 to 10

MAM Routine: Choral Counting

Using the counting tool, ask the children to chant the numbers 1 to 10, using their fingers. You could use the numeral posters (printables) as a reference and visual aid for the children.

Assess whether each child is saying the numbers in the correct sequence. Ask individual children or pairs of children to chant the numbers.



D Digital activity: Arrays of Dots

MAM Routine: Quick Images

Display the Quick Images activity, in which the children will subitise, then count the amount of dots. The arrays of dots are shown in different configurations. Click to briefly reveal and then hide each image.

Main event

C Concrete activity: Ordering Sets and Assigning Numerals MAM Routines: Reason & Respond, with Think-Pair-Share

Activity 1: Distribute manipulatives and tactile numerals (or small numerals from PCM 9) to each group. The children make three sets of 1, 2 and 3 objects, using the same type of manipulative, e.g. counters. (They subitise the amounts in each set and then check by counting.) Ask:

- Which set comes first/last?
- Can you put the sets in order?
- Which set is first, in-between, last, second, third?
- Which set is in-between, after, before?
- Which set is the biggest/smallest?
- Which set would you prefer? Why? (This set has one more./This one has one less.)
- This set has 1 bear. This set has 2 bears. How many more bears in this set of 2? Is that why you would prefer it?
- This set has 2 bears. This set has 3 bears. How many more bears in this set of 3? Is that why you would prefer it?

The children then arrange the sets in order (e.g. one blue bear, two red bears, three yellow bears), so that one more item can be clearly seen in each set. They should assign the correct numeral to each set. Ask:

- Which number goes with this bear? Why?

- Is this correct (e.g. numeral 2 beside three bears)? Why not?
- Set out the numerals in order. Can you put the correct amount of bears beside each number?
- Mix up the bears and numerals. Can you put the bears in order and give them the correct number?
- Leave out the two bears and their numeral. How many bears are missing? Which number is missing?

Activity 2: Distribute tactile numerals (or small numerals from PCM 9) to each group. The children use the various items on their tables (e.g. pencils, crayons, erasers or copies) to make sets, order the sets and assign the correct numerals.

Activity 3: Distribute tactile numerals (or small numerals from PCM 9) to each pair. One child in each pair takes an assortment of objects and make sets of 1, 2 and 3 objects. Their partner assigns the numerals and puts the sets in order.

Let's strengthen

Use Unit 3 Let's Strengthen PCM: Dot Cards. The children put the different arrays of one, two and three dots in order and assign the correct numeral.

D Digital activity: Order the Dots

Play the interactive sequencing game, in which the children must put the arrays of dots in order.

Optional consolidation and extension possibilities

Get into Order (Integration with PE) This activity should be carried out in the PE hall. When you shout, 'Get into order!', the children arrange themselves into groups of six (one child, two children and three

children). Demonstrate first with a group of six children. When the children have 'ordered' themselves, you (and a helper, if one child is left out) could check the order.

Day 8, Lesson 7

Composition of Number

Focus of learning (with Elements)

- Combines and partitions quantities (1–3) (using concrete materials) (U&C)
- Combines and partitions sets of two or more objects (U&C)
- Focuses on the counting, cardinality and composition of numbers (1–3) (U&C)

Learning experiences

- D** Animation: Maths Choir **MAM Routine: Choral Counting**
- D** Animation: Combining and Partitioning with Monty!
MAM Routine: Reason & Respond
- C** Concrete activity: Combining and Partitioning Manipulatives
- C** Game: Domino Match
- P** Pupil's Book page 21: Composition of Number

Equipment

- Manipulatives (bears, counters, beads, collections of items)
- Set rings
- Maths sticks (or twigs or cord to partition)
- PCM 15
- Monty the puppet

Maths language

- (Informal use of: separate, put back together, take away)

Warm-up



- D** **Animation: Maths Choir**
MAM Routine: Choral Counting

Play the animation. The children chant the numbers 1 to 10, using their fingers.



- D** **Animation: Combining and Partitioning with Monty!** **MAM Routine: Reason & Respond**

Use Monty the puppet alongside the animation. Play the animation, in which Monty has three favourite

toys but he keeps losing some of them. Ask:

- How many toys does Monty have? Let's count them.
- Which toy is in-between/after/before ...?
- Monty has lost one of his toys. Which one has he lost?
- Monty is playing with his bone/duck/ball. Which two toys are missing?

Main event

- C** **Concrete activity: Combining and Partitioning Manipulatives**

Composition of number is a key stage in the children's understanding of number (discovering that numbers greater than 1 can be 'broken' up into smaller numbers and then 'put back together again'). Assess whether the children understand that the numbers can be 'put back together again'. This is similar to 'decomposing', for example, 3 building bricks and then reassembling them.

Distribute manipulatives, set rings and sticks to each group. The children will practise the following:

- Making sets of 2 and 3 objects



- Partitioning each set of 2 and 3 objects, and explaining what they are doing (e.g. *I have made a set of 1 and a set of 2.*)
- Combining the sets again and explaining what they have done (e.g. *I have put the set of 1 and the set of 2 back together. I now have a set of 3.*)
- Using objects that are the same, and assorted objects
- Using the set rings to make the set of 3, for example
- Using the sticks to partition the set of 3, for example
- Taking away the stick to make the full set again.

Let's deepen

Some children might assign the correct numeral to each set and record what they are doing pictorially.

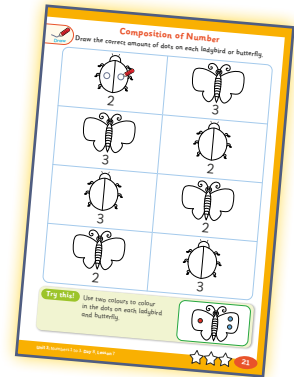
C Game: Domino Match

There are two variations of this game, for which you will need PCM 15: Domino Pieces and Numerals.

Game 1: Distribute a 2-dot domino piece and a 3-dot domino piece to some pairs, and a numeral 2 and a numeral 3 to other pairs. The first pair to find their matches wins the game (e.g. a child with a 2-dot domino piece finds a child with a numeral 2).

Game 2: Divide the children into two groups. Give each child in Group 1 a 2-dot or 3-dot domino piece.

Give each child in Group 2 a numeral 2 or 3. You could make this competitive by saying, 'On your marks, get set, go!' The first pair to find their match wins the game (e.g. a child with a 2-dot domino finds a child with a numeral 2). All of the groups in the class could play this.

P Pupil's Book page 21: Composition of Number**Optional consolidation and extension possibilities**

Games Bank Play 'Cotton Ball Throws' from the Games Bank.

Story Read *How Do Dinosaurs Count to Ten?* by Jane Yolen, or listen to a reading at: edco.ie/xcpq

**Day 9, Lesson 8****Making Numerals 1 to 3****Focus of learning (with Elements)**

- Focuses on the order, conservation and cardinality of numbers (1–3) (U&C)
- Makes numerals creatively (C)
- Represents numbers using informal symbols (For example: fingers, tallies of marks and pictures), and begins to record such numbers (C)
- Explores numerals in 2-D and 3-D sensory form (e.g. tracing numbers on paper and in sand) (U&C)
- Discusses, draws and writes representations of numbers (1–3), using manipulatives (C)

Learning experiences

- D** Digital activity: Numbers 1 to 10 **MAM Routine: Choral Counting**
- D** Digital activity: Name That Number!
MAM Routines: Quick Images, with Reason & Respond
- C** Game: Body Numerals
- C** Concrete activity: Maths Stations
- D** Animations: Number Formation – 1 to 3
- P** Pupil's Book page 22: Making Numerals 1 to 3

Equipment

- Sand area
- Counters
- Beads and cord
- Play dough
- PCM 16
- Tactile numerals in Pupil's Book

Maths language

- (Informal use of: tally marks)

Warm-up

- D** Digital activity: Numbers 1 to 10
MAM Routine: Choral Counting

Using the counting tool, ask the children to chant the numbers 1 to 10, using their fingers.



D Digital activity: Name That Number!

MAM Routines: Quick Images, with Reason & Respond

Play the Quick Images slideshow. Briefly reveal and then hide each image. Ask the children to guess which numeral they saw and explain why they thought it was that number (for example, for 3, 'It had two round parts.'). They will also see sets of 1, 2, and 3 objects (in different arrays) and subitise the amount.

C Game: Body Numerals

Ask:

- Can anyone make the number 1? (With a finger? An arm? Full body standing straight with hands by their side?)
- What about the number 2? (Fingers? Arms? Body curled around, on knees with feet behind?)
- How about the number 3? (Fingers from both hands? Body? With a partner?)

Main event

C Concrete activity: Maths Stations

Use the opportunity afforded by the Maths Stations to assess each child's readiness and ability to form numerals. Some will have had practice in an Early Years setting, some will be older or at a different developmental stage. Some will have more developed fine motor skills.



Arrange the children into five groups. Before beginning the activities, support the children in tracing over numerals 1 to 3 in their Pupil's Book with their finger. Can they locate each individual numeral and trace over it with their index finger?

Group 1: In the sand area, the children should make sets of 1, 2 and 3 objects (counting the amount of objects in each set). They can use concrete objects or make their own representations, using the sand. They should trace the correct numeral (1, 2 or 3) beside each set. Ask:

- Can you use any items in the sand area to help you trace the numerals in the sand?
- Can you also make 'raised' numerals using the sand?

Groups 2 and 3: Distribute counters, beads and cord. Ask:

- How many different ways can you make the numbers 1, 2 and 3?

Groups 4 and 5: Distribute play dough, counters and a copy of PCM 16 – Making Tally Marks to each child. The children will also need paper and pencils for drawing. Ask:

- How could you make the numbers 1, 2, 3, using play dough?
- How could you show, e.g. three children on paper?
- Can you show them on the PCM? (the children make a mark beside each child e.g. 2 marks beside the two children)

Allow the children to make their own representations. Next, show the children how to make tally marks (limited to three) on paper. Say/ask:

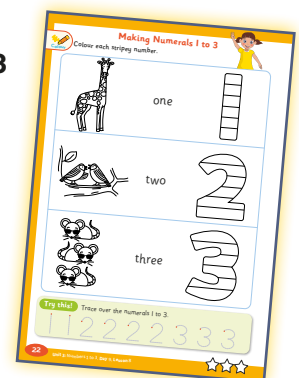
- We call these tally marks. How many does this tally mark show? (e.g. 2)
- How many more/less tally marks do we need for the number...?
- How can we show the number... with tally marks?
- Can you put the correct amount of counters beside your tally marks? (e.g. two counters beside the tally mark of 2)

D Animations: Number Formation – 1 to 3

Play the numeral formation animations for each numeral. They describe the formation very clearly.



P Pupil's Book page 22: Making Numerals 1 to 3



Optional consolidation and extension possibilities

Five-Senses Counting The children could *hear* and count (1, 2, 3) sounds; *taste* and count foods; *smell* and count scents (e.g. three herbs); *touch* and count (e.g. close their eyes while another child taps their arm); see and count objects.

Tracing Numerals The children trace over the numerals, using PCM 17 Dotted Numerals 1–3, and/or Unit 3 Let's Deepen PCM: Dotted Numerals 1–3.

Home/School Links Book Page 11 can be completed any time after this lesson.

Maths Journal Ask the children to write the numeral 1 in their journal. How will they do this? Where will they start? Depending on the children's stage of development, they could also write 2 and 3. If this is not an option, they could add stickers to the numeral 1, stick cotton wool on it, or draw one object beside it.

Number Guessing The children work in pairs. Child A closes their eyes while Child B uses their finger to 'write' a numeral (1, 2 or 3) on Child A's palm. Child A guesses the numeral. Alternatively, Child A closes their eyes while Child B uses their finger to 'draw' a quantity of circles on Child B's palm. Child A guess the amount.

Mystery Numerals (Integration with PE) This activity should be carried out in the PE hall. A small group of children try to make the numeral 1, 2 or 3 on the floor, using their bodies or PE equipment. The other children guess what numeral has been made. Can some of the other children form the correct amounts (1 child, 2 children or 3 children) to match the numeral?

Story Read *Dr Seuss's 1, 2, 3* by Dr Seuss, or listen to a reading at: edco.ie/4efv



Day 10, Lesson 9

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.

Let's create!	Let's play!
The children could design pictures or collages, or construct vehicles or buildings, using the materials they collected on their nature walk.	Play one of the games or PE activities you did not have time to try.
Maths language	Maths Stations
Ask the children to explain the following terms (perhaps using drawings on their MWBs): <i>before</i> , <i>in-between</i> , <i>after</i> , <i>take one away</i> , <i>add one more</i> . Use the maths language cards for this unit to revise the key terms. For example: If the image and text are cut apart, can the children match them?	Set up the Maths Stations from Lesson 8, but change the groups, e.g. Group 3 use the station that Group 2 used.
Progress Assessment Booklet	Maths story
Complete Questions 9–12 on pages 9–10. Alternatively, these can be left to do as part of a bigger review during the next review week.	Try one of the books you did not have time to read.
Let's strengthen	Let's deepen
Identify children who might benefit from extra practice with some of the key concepts or skills in this unit. Consult the Unit 3 Let's Strengthen Suggestions for Teachers.	Use the Unit 3 Let's Deepen PCM.

