

Maths and Me: Junior Infants – Short-Term Plan, Unit 1: Number Readiness (September: Weeks 1&2)

Strand(s) > Strand Unit(s) Number > Sets and Operations; Fractions. Data and Chance > Data.




Learning Outcome(s)

Through appropriately playful and engaging learning experiences children should be able to recognise and understand what happens when quantities (sets) are partitioned and combined; explore, interpret and explain data in a variety of ways for a range of purposes.

Lesson	Focus of Learning (with Elements)	CM	Learning Experiences	Assessment
1	Same and Different: Recognises, identifies and matches pairs (U&C); interprets and matches related data sets or collections of data (A&PS)		D Reason & Respond, L1–6, 8–9 C What things are the same? L1	Intuitive Assessment: responding to emerging misconceptions
2	Matching Pairs – One Criterion: Matches objects and/or sets using one-to-one correspondence (U&C); Recognises, identifies and matches pairs (U&C)		C Matching Socks and Gloves L1 D Notice & Wonder L2, 5	
3	Matching Pairs – Two Criteria: Matches objects and/or sets using one-to-one correspondence (U&C); Recognises, identifies and matches pairs (U&C)		C Matching Pairs for One Criterion L2 P Story: <i>Hoorary for Fish!</i> by Lucy Cousins L6	
4	What is a Set?: Sorts and classifies objects according to at least one attribute (R); Justifies classifications (R); Sorts and re-sorts a variety of materials (U&C)		C Using Three Sorting Circles L7 C Sorting Random Collections L8	Planned Interactions: responding to insights gleaned from children's responses to learning experiences
5	Sorting Sets – One Criterion: Sorts and classifies objects according to at least one attribute (R); Justifies classifications of objects into sets; (R); Sorts a variety of random materials into a set according to a single attribute [property] each time (U&C)		Print resources Pupil's Book pages 4–9 Home/School Links Book pages 6–7 PCMs 6, 7	
6	Sorting Sets – Two Criteria: Sorts and classifies objects and sets according to two attributes (R); Classifies objects into sets (R); Sorts materials multiple times in different ways in an undirected manner (according to self-selected criteria) (R)			
7	Sorting Sets – Three Criteria: Sorts and classifies objects and sets according to multiple attributes (R); Sorts materials multiple times in different ways in an undirected manner (according to self-selected criteria) (R); Describes and/or labels the attributes of different objects and sets (C)			Assessment Events: information gathered from completion of the unit assessment in the Progress Assessment Booklet page 6
8	Sorting at School: Describes the process of sorting and justifies selection criteria used in forming sets (C)			
9	Comparing Sets – One-to-one Correspondence: Matches objects and/or sets, using one-to-one correspondence (U&C)			
10	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 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

 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 1 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 1 Let's Strengthen Suggestions for Teachers. (These address the Common Misconceptions and Difficulties listed below.) ● See Unit 1 Let's Strengthen PCM. ● See Unit 1 Let's Deepen PCM.
Integration	See individual lesson plans.

Background and rationale

- Some children will have had plenty of practice of matching objects in Early Years settings, but others will have had very little practice. Matching is a key component of understanding Number, so it is a very important concept.
- Once the children can distinguish between the properties of objects, they can make sets of objects with the same properties. This lays the groundwork for making clearly defined quantities/amounts in a set.
- It is advisable to move through the stages of sorting at the children's pace. Wherever possible, follow the children's lead and ability when it comes to introducing a new criterion.
- It is essential to spend time teaching each attribute individually, using one-property collections. This will save you time when it comes to teaching the two- and three-property collections. Colour is a strong focus for sorting within the lessons, but try to be mindful of using size, shape or depth as well. Applying one criterion, but using a range of manipulatives (such as counters, beads, attribute blocks and building bricks) rather than just bears will help the children to apply their learning to different materials.
- The skill of sorting in Junior Infants develops over the whole year, so plenty of revision is needed. The line of development is as follows:
 - Defining what is the same and what is different
 - Matching pairs of objects, using one criterion
 - Matching pairs of objects, using two criteria
 - Sorting a set, using one criterion
 - Sorting a set, using two criteria
 - Sorting a set, using three or more criteria
 - Sorting random collections
 - Making subsets
 - Applying one-to-one correspondence to two sets
 - Combining and partitioning sets.
- In this unit, the children are aligning/matching two sets in terms of quantity. They are discovering how one set can be more or less than another set. They are not formally counting at this stage, but instead are using one-to-one correspondence to compare quantities in sets.

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

Common misconceptions and difficulties

- The children may struggle with some activities, but this may be due to factors other than understanding what is required in terms of the task. They may have poor concentration, a lack of confidence or low self-esteem.
- Another key issue that can cause children to struggle is poor language skills. Some children will have encountered most of the maths language in Early Years settings, but to others it will be completely new. Additionally, there may be some children in your class who have little or no English. Acquiring, understanding and using maths language is a skill that will develop over time, and needs to be factored into assessing whether the child can match/sort/compare/order sets.
- Some children will be considerably younger than their classmates. This is another key aspect of the children's development, and subsequently their understanding of concepts such as conservation of number.
- Some children learn at a slower pace and need more repetition and practice. Others are quick to grasp a concept and are soon ready to move on to higher-order tasks/questions. In the *Maths and Me* programme, you will see references to 'Let's Strengthen' and 'Let's Deepen' suggestions. Setting the tasks at the appropriate level will ensure that each child grows in confidence as they experience success.
- The importance of using concrete materials in Number Readiness activities cannot be overstated. These early mathematical activities lay the foundation for meaningful work with Number. Children who have subsequent difficulties with maths may not have fully experienced early Number activities.
- The children's ability to both make a set and understand the meaning of a set is fundamental to their later understanding of Number. This ability is the link to making a cardinal number for a set (e.g. the 'threeness' of three). The following language should be very clearly communicated: *same, different, belongs, does not belong*. Crucially, the children also need to use the language themselves.
- When making sets, there should be no ambiguity about the components. Children may become confused about the definition of a set if the criterion is not clearly established (e.g. a set of red bears). If the set is ambiguous, it will be difficult for the child to determine which objects belong to the set and which do not belong.
- Plenty of practice is necessary before moving on to sets with two possible ways, and then multiple ways, of sorting the objects. Moving on too quickly risks diluting the children's concept of a set. Some children may 'forget' the criteria they have decided on, e.g. they might forget they were sorting for size and then start sorting for colour. Again, practice and guidance will maintain their focus.

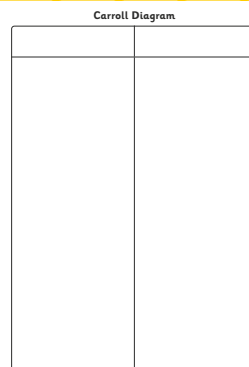
The Unit 1 Let's Strengthen Suggestions for Teachers address the common misconceptions and difficulties listed above.

Mathematical models and representations

- Carroll diagrams
- Sorting circles

Teaching tip

Sorting Circles and Carroll Diagram manipulative printables are available to support this unit. Click on the resources icon on the *Maths and Me* book cover on edcolearning.ie.



Carroll diagram

Day 1, Lesson 1

Same and Different

Focus of learning (with Elements)

- Recognises, identifies and matches pairs (U&C)
- Interprets and matches related data sets or collections of data (A&PS)

Learning experiences

- D** Digital activities: Monty Makes a Mess! (A) & (B)
MAM Routine: Reason & Respond
- C** Class discussion: What things are the same?
- C** Concrete activity: Matching Socks and Gloves
- P** Pupil's Book page 4: Same and Different

Equipment

- Bundles of socks or gloves for matching
- Monty the puppet

Maths language

- same, different, match, sort, pair
- informal use of: first, red, blue, yellow, green, black, white, beside, under, on top of, near, over, close to

Teaching tip

Many of the children will have engaged in Number Readiness activities in Early Years settings, but others may have had little or no engagement. These children will need additional experience of Number Readiness activities, as this is a crucial foundation for Number itself.

Warm-up

D Digital activities: Monty Makes a Mess!
(A) & (B) MAM Routine: Reason & Respond

Introduce Monty (the puppet). Monty tells the children about himself and admits that he's made a mess!



Use Monty the puppet alongside the digital animation. One of the children might like to 'manipulate' Monty to make certain actions/gestures and 'talk' if required. The children could take turns 'being Monty'.

Open the first interactive matching game, Monty Makes a Mess! (A). This activity provides an opportunity to make an intuitive assessment of the children's Number Readiness (similar to assessing Reading Readiness). Start by playing the animated introduction to the game, in which Monty knocks over a basket filled with socks. Before beginning the activity to match the socks, ask/say:

- What will we do with this mess?
- Are all of the socks the *same*? (Elicit the following language: *different*, *same as*. Encourage the

children to use this vocabulary as often as you deem necessary for your class's ability.)

- We must try to *match* the socks/make a *pair* of socks.
- Which colour sock will we try to match first? (The children can supply the names of the colours. This is another assessment opportunity regarding colours.)
- Is this sock the *same* as that sock? Is this one *different*? (Elicit this language from the children to assess whether they can understand and use it.)
- What colour is this sock? What do we need to do? (Match it to another, e.g. a red sock.)
- Have we made a pair?

Now play the interactive matching game, Monty Makes a Mess! (A), to create pairs of socks. To create a match, click and drag to draw a line to connect the two images.



Let's deepen

Open the second matching game, Monty Makes a Mess! (B). This resource uses a mix of patterned and solid-colour socks. (All socks are the same size.)

After viewing the animated introduction, in which Monty knocks over another basket of socks, ask/say:

- Where is the sock with stripes/spots? (Beside, under, on top of, near, over, close to ... the sock with stripes/spots.)
- There are three* socks here; what can you tell me about them? Two* are the same, but this one* is different. (*Use these numbers informally and at your own discretion.)

Now play the matching game to create pairs of socks. To create a match, click and drag to draw a line to connect the two images. Say/ask:

- Let's put these two socks together. Let's match them. Let's make a pair.
- What are we doing? (Sorting the socks!)

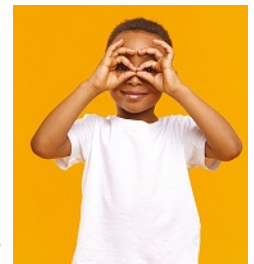
Continue until all the socks have been matched.

C Class discussion: What things are the same?

Hold a discussion about matching items in the classroom to introduce the children to the Maths Eyes strategy. Tell the children that when they

'put on' their Maths Eyes, they can see maths everywhere!

They should use the thumb and index finger of each hand to 'put on' their Maths Eyes. Ask:



- Can you see two things in the classroom that are the same? (You will probably need to prompt answers.)
- What about socks/shoes/trainers/sandals/boots? (Elicit the following language: *This sock/boot/glove is the same as/matches this one.*)
- Is anyone wearing socks/shoes that don't match/are different?
- Can you see anything else that we could match? (You might hold up an object, such as a pencil, school bag, pencil case, lunch box or crayon.)
- Can we match this pencil to another pencil?
- Is there another pencil that is the same, or is it different?

Let's deepen

Ask:

- What about these three crayons? Which crayon is the odd one out?
- Why? (One is blue, two are red, for example.)

Main event

C Concrete activity: Matching Socks and Gloves

Distribute assorted pairs of socks and gloves to each group. Using the language from the previous discussion, tell the children to find the matching socks and gloves. Ask:

- Why are you matching this glove with that glove?
- Is it the same?
- Is it different?

Let's strengthen

Redistribute socks and gloves from one group to another group to give more practice as required. Mix up all of the socks and gloves. Redistribute them among the groups. Each child should choose a sock or glove and then find its match.

P Pupil's Book page 4: Same and Different



Let's strengthen

If necessary, introduce the following language: draw a line, from, to, between, join.

Optional consolidation and extension possibilities

Matching Bears Distribute a handful of same-size bear manipulatives (or use cubes, pegs or beads) in different colours to each child, e.g. three small bears

in yellow, red and blue. The children should try to find a match for each bear they have been given within their group, using appropriate language, such as:

- I have a red bear. I need to match it to another red bear. Who has a red bear?
- I need to find a bear that is the same. No, that bear is different. It is yellow, not red.

Story Read *A Pair of Socks* by Stuart J. Murphy, in which a lonely sock searches the house for its match, or listen to a reading at: edco.ie/7qra



Day 2, Lesson 2

Matching Pairs – One Criterion

Focus of learning (with Elements)

- Matches objects and/or sets using one-to-one correspondence (U&C)
- Recognises, identifies and matches pairs (U&C)

Learning experiences

- **D** Animation: Getting Ready for School (A)
MAM Routine: Notice & Wonder; Reason & Respond
- **C** Concrete activity: Matching Pairs for One Criterion

Equipment

- Bear manipulatives
- Cubes and counters
- Building bricks and blocks
- Shapes

Maths language

- There is no new maths language for this lesson.

Warm-up

- **D** **Animation: Getting Ready for School (A)**
MAM Routines: Notice & Wonder; Reason & Respond

Play the animation. Lexi is trying to get ready for school, but Monty has taken her matching sock and welly, and he keeps bringing her the wrong item. Describe the socks. Ask:

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

- Is this sock/welly the same or is it different?
- Can we match these socks/wellies?

Teaching tip

Model the Notice & Wonder routine initially. Then gradually release more responsibility to the children, initially noting all their responses, then encouraging them to give you Maths 'noticings' and 'wonderings' only (i.e. developing Maths Eyes).

Main event

- **C** **Concrete activity: Matching Pairs for One Criterion**

Distribute bear manipulatives, cubes, counters, building bricks, building blocks and shapes to each group. The children should explore the concrete materials, looking for similarities and differences. They should match pairs of items according to one criterion – colour, size or shape. Encourage them to use the following language: *This one is the same as that one. This one is different from that one. This one is the same size (height) as that one. This one is the same shape as that one.*



Let's strengthen

You might like to give manipulatives with only one possible criterion (e.g. all small bear manipulatives, but in different colours) to any children who might find a range of options too challenging. Assess whether the children have grasped the concept of sorting for one criterion and whether they understand the language being used.

Let's deepen

Some children could make a tower of three cubes and match it to another tower of three cubes.

They are matching for size (height). They could also match for width, using building bricks.

Let's deepen

Teach the children the following rhyme:

*Once I saw a little cave
With no bear about,
So I said, 'Dear little bear,
Won't you please come out?'*

In pairs, Child A should make a 'cave' with one

hand placed over the other, covering a bear manipulative, without letting Child B see the colour of the bear. Child B should say the rhyme above and ask, for example:

- Do you have a red bear?

Child A should peek to see if they have a red bear and use the language of 'same' or 'different'. This activity could be extended by using different-sized bears.

Optional consolidation and extension possibilities



Story Read the rhyming story *Kindergarten is Cool!* by Linda Elovitz Marshall or listen to a reading at: edco.ie/sdag



Song Teach the children the song 'The Animals Went in Two by Two': edco.ie/n84p

Home/School Links Book Page 6 can be completed any time after this lesson.



Getting Ready for School Use the slideshow for further focused discussion and extension of the animation.

Noah's Ark (Integration with PE) In the PE hall, the children form pairs of animals to go into the ark, two by two. They could walk under an arched 'gate' (a pair of children holding their arms up) into the ark and sing the song.

Matching Pairs Play the interactive game, in which the children have to find the matching pair of socks.



Day 3, Lesson 3

Matching Pairs – Two Criteria

Focus of learning (with Elements)

- Matches objects and/or sets using one-to-one correspondence (U&C)
- Recognises, identifies and matches pairs (U&C)

Learning experiences

- D** Digital activities: Missing Socks (A) & (B)
MAM Routine: Reason & Respond
- C** Concrete activity: Matching Bears **MAM Routine: Reason & Respond**
- P** Pupil's Book page 5: Matching Pairs – Two Criteria

Equipment

- Bear manipulatives (all sizes and colours)
- 2-D shapes (different shapes and colours)

Maths language

- Informal use of: long, short

Warm-up



D Digital activities: Missing Socks (A) & (B)
MAM Routine: Reason & Respond

Play the first interactive game, Missing Socks (A), in which the children will spot differences and similarities

between the socks on the clothesline (for example: different sizes, but the same colour). They must select the correct sock to complete each pair. Use the same language as in the previous lessons, and ask:

- What can we say about these two socks? (For example: They are both red, but one is long and one is short.)
- Are they the same or different?
- What do we need to do? (Find the matching sock.)

Let's deepen

Play the second interactive game, Missing Socks (B), which includes striped and patterned socks.

Let's deepen

D Digital activity: Which One Doesn't Belong?

MAM Routine: Reason & Respond

Play the multiple-choice game, in which the children must select the sock that doesn't belong. (For example: There are two long yellow socks and one short yellow sock.)

Main event

C Concrete activity: Matching Bears and Shapes

MAM Routine: Reason & Respond

Distribute a handful of bear manipulatives to each child in some of your groups, and a handful of 2-D shapes to each child in the other groups. Assess the children's language and conceptual understanding of matching for two criteria. Initially, revise what they have discovered so far. Ask:



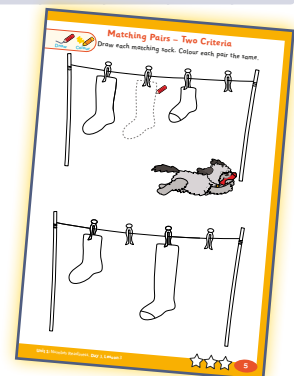
- Can you make any pairs of objects / match any objects? (e.g. two bears of the same size or colour)
- Why did you match those two bears?
- If I put these three bears together, which one would be the odd one out? Why? (e.g. two large blue bears and one small blue bear)
- Leah has matched these two bears. Why do these two pairs make a pair? (same colour *or* same size)
- Are these two bears the same? (e.g. one small red bear and one large red bear)

- How are they different?
- Can you find two bears that are the same colour *and* the same size?
- Can you find two shapes that are the same? How are they the same? (same size and colour)
- Which one of these is the odd one out? (e.g. one large yellow circle and two small yellow circles)

Teaching tip

Encourage the children to take the lead when making their matching decisions.

P Pupil's Book page 5: Matching Pairs – Two Criteria



Optional consolidation and extension possibilities

Classroom Collection Distribute collections of objects such as buttons, small-world animals, shells, leaves or toy cars to each group. Ask the children to find two objects that are, for example, the same size and colour.

Drawing a Pair In pairs, Child A should draw a ball and colour it. Child B should draw a ball of the same (similar) size and colour. This could be made into a memory game. Can Child B remember the size and colour of the ball their partner drew?

Making a Pair In pairs, Child A should use plasticine to make an object, e.g. a round blue ball. Child B should make a match for it. This could be extended by adding other features, such as two red eyes.

Matching Pairs Play the interactive matching tiles game, in which the children have to match the pairs of socks.

Day 4, Lesson 4

What Is a Set?

Focus of learning (with Elements)

- Sorts and classifies objects according to at least one attribute (R)
- Justifies classifications (R)
- Sorts and re-sorts a variety of materials (U&C)

Learning experiences

- D** Animation: The Washing Song **MAM Routine: Reason & Respond**
- D** Digital activities: Which Basket? (A) & (B) **MAM Routine: Reason & Respond**
- C** Concrete activity: Sorting Clothing **MAM Routine: Reason & Respond**

Equipment

- Old/dress-up clothing or clothing for dolls/teddies

Maths language

- sort, group, set, put together, belong, does not belong, join

Warm-up

D Animation: The Washing Song
MAM Routine: Reason & Respond

Play the animation to prompt discussion about the song, in which Dara is sorting clothes for the laundry by colour. Ask/say:

- How could Dara sort all this washing into sets?
- Where will he start?
- Could he sort by colour?
- What colours did Dara sort by? (white, blue, green, red/pink, yellow)
- What other way could Dara sort? (by light and dark colours)
- What colours are light?
- What colours are dark?
- How did Dara sort the washing on the line? (shirts, trousers, sweaters)
- Could Dara sort by size? (big and small)
- How did Dara sort the dry clothes into the drawers? (shirts, tees, trousers)

D Digital activities: Which Basket? (A) & (B)
MAM Routine: Reason & Respond

Play the first interactive game, Which Basket? (A), in which the children must put items of clothing into the correct basket to sort the laundry by colour. Ask:

- How can we sort the laundry on the clothesline?
- Where could we start? (The children should give their ideas about sorting.)
- Which colour will we start with?
- What about this ...? Which basket does it belong to? Will we put all of the blue/yellow/white clothing in the same basket?

Let's deepen

Ask:

- Is this set of clothing the same as that set? (No, they are different. One set is blue, and the other set is white.)

Let's deepen

Play the second interactive game, Which Basket? (B), in which the children must sort the laundry by type of clothing.

Main event

C Concrete activity: Sorting Clothing
MAM Routine: Reason & Respond

Distribute several items of clothing to each group. Ask each group to explain how they



are going to sort the items. Use the same language that you used in the warm-up activity. This is an ideal opportunity to recap on the maths language and assess whether the children have grasped the concept of sorting and can justify their decision.

Optional consolidation and extension possibilities

Games Bank Play 'Sort Yourself Out!' from the Games Bank.

Story Read *Sort It Out* by Barbara Mariconda, in which a pack-rat must sort out the various items he has collected. A reading is available at: edco.ie/3znr



Day 5, Lesson 5

Sorting Sets – One Criterion

Focus of learning (with Elements)

- Sorts and classifies objects according to at least one attribute (R)
- Justifies classifications of objects into sets (R)
- Sorts a variety of random materials into a set according to a single attribute [property] each time (U&C)

Learning experiences

- D** Digital activity: Tidy Up!
MAM Routines: Notice & Wonder; Reason & Respond
- C** Concrete activity: Sorting Farm Animals
MAM Routine: Reason & Respond
- P** Pupil's Book page 6: Sorting Sets – One Criterion

Equipment

- A variety of farm animals from the small-world area
- Bear manipulatives

Maths language

- There is no new maths language for this lesson.

Warm-up

- D** **Digital activity: Tidy Up!** **MAM Routines: Notice & Wonder; Reason & Respond**

Assess whether the children understand the concept of identifying items that are the same/similar and then sorting them into sets. Display the poster, in which Lexi and Jay have to tidy up a messy garden after a playdate with their friends. They need to sort the toys by type, using one criterion. Click to play or ask:



- What do you notice? What do you wonder?
- How can we help Lexi and Jay?
- Where will we start/begin?
- Why would you start with that toy? (For example: If there are only two of a certain toy, that might be an easy one to start with.)
- What will we sort out next? Why?
- Have we found ALL the cars?
- Is there a toy hiding?

- Where is it?
- Is there another way we could sort the toys?
- Could we sort by colour?
- Could we sort by size?

The children should take the lead, describing how they would sort out the toys. For example: First, I would pick up all the skipping ropes.

- I would put them into the blue box.
- I would make a group/set of skipping ropes.

Let's deepen

Ask:

- Is there another way we could sort out the toys? (hard or soft, long or short, different colours, made of wood or a different material, etc.)

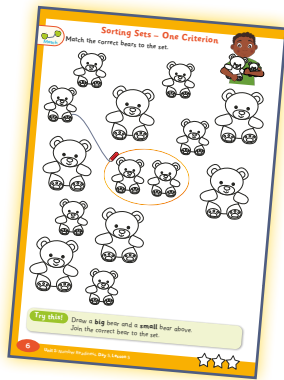
Main event

C Concrete activity: Sorting Farm Animals MAM Routine: Reason & Respond

Distribute a collection of farm animals to each group. The children will sort these according to one criterion: type of animal. Tell the children to sort the animals into sets. Ask:

- How can we sort these animals into groups/sets?
- Why did you put those animals together?
- Why do you think Karl put those animals together?
- Could I put this horse with the set of pigs?
- Does this cow belong to the set of horses?

P Pupil's Book page 6: Sorting Sets – One Criterion



Let's deepen

Ask/say:

- Look at these three animals. Which animal is the odd one out?

- Could we sort these animals in a different way? (small and large, or different colours, etc.)

Let's strengthen

The children should use manipulatives to make sets. Direct them to sort for one criterion: colour. For example, using a set of small yellow bears, ask:

- Could this small green bear join the set? (No, it does not belong to the set of small yellow bears. It is different.)

For further practice with sets, see Unit 1 Let's Strengthen PCM: Ring the Sets.

Let's deepen

Some children might be ready to sort for one criterion from two options. Use bears of two colours *and* two sizes in order to provide these children with two options for making sets. The children should describe their choice of criteria. For example:

- I am going to make a set of small bears and a set of big bears.
- Then, I am going to make a set of green bears and a set of red bears.

Each time, they are sorting for one criterion, but they have two options.

Optional consolidation and extension possibilities

Let's Deepen Unit 1 Let's Deepen PCM: Join the Animal to the Correct Set.

Home/School Links Book Page 7 can be completed any time after this lesson.

Song Play this catchy song about a family of bears sorting fruit: edco.ie/7hxn



Day 6, Lesson 6

Sorting Sets – Two Criteria

Focus of learning (with Elements)

- Sorts and classifies objects and sets according to two attributes (R)
- Classifies objects into sets (R)
- Sorts materials multiple times in different ways in an undirected manner (according to self-selected criteria) (R)

Learning experiences

- P** Story: *Hooray for Fish!* by Lucy Cousins
- C** Sorting activity: Using Sorting Circles
MAM Routine: Reason & Respond
- P** Pupil's Book page 7: Sorting Sets – Two Criteria

Equipment

- Picture book: *Hooray for Fish!* by Lucy Cousins
- Ocean counters or bear manipulatives
- Sorting circles of cord/string (two per group)

Maths language

- There is no new maths language for this lesson.

Warm-up

P Story: *Hooray for Fish!* by Lucy Cousins

Assess the children's understanding of the following terms: *same*, *different*, *set*. Read *Hooray for Fish!*, in which Little Fish meets lots of friends with different attributes (spotty, happy, hairy, etc.). Discuss the different types



of fish and informally use the language of spotty, stripy, etc.

Teaching tip

A reading of *Hooray for Fish!* is also available: edco.ie/9q38



Main event

C Sorting activity: Using Sorting Circles

MAM Routine: Reason & Respond

Distribute a few handfuls of ocean counters or bear manipulatives and two sorting circles to each group. Ask:

- How will you sort the fish/bears? (e.g. by colour or type of fish)
- How has Lily sorted her sets?
- Does this fish belong to that set?
- Which set does this fish belong to?
- What can you say about this fish? (It does not belong to that set.)

Introduce the sorting circles to the children. Ask:

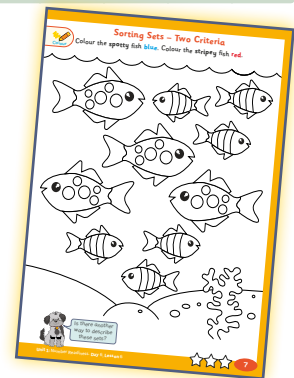
- How will we use these (sorting) circles?
- How will they help us to sort our sets?
- Could we make a set of yellow fish/bears and a set of fish/bears that are *not* yellow?

Let's deepen

Ask:

- Is there another way that we could sort the fish/bears?

This time, the children should make their own decision on to how to sort the collection, without any direct instruction from you.

P Pupil's Book page 7: Sorting Sets – Two Criteria

Optional consolidation and extension possibilities

Little Fish Friends Use play dough or modelling clay to make a fish. Buttons or other small materials could be pressed into the play dough/clay to make colourful scales.

Games Bank Play 'Fish Bingo' from the Games Bank.

Day 7, Lesson 7

Sorting Sets – Three Criteria

Focus of learning (with Elements)

- Sorts and classifies objects and sets according to multiple attributes (R)
- Sorts materials multiple times in different ways in an undirected manner (according to self-selected criteria) (R)
- Describes and/or labels the attributes of different objects and sets (C)

Learning experiences

- D** Song: 'The Sorting Song'
- C** Concrete activity: Using Three Sorting Circles
- P** Pupil's Book page 8: Sorting Sets – Three Criteria

Equipment

- Sorting circles of cord/string (three per group)
- Attribute blocks of one depth only (all thick or all thin) and/or bear manipulatives
- PCM 7

Maths language

- shape, size, colour
- informal use of: first, round, pointed, has corners

Teaching tip

Some children will be able to name the 2-D shapes; others will refer to them by their properties, e.g. 'round' ('roundy'), 'pointed' or 'has corners'.

Warm-up

D Song: 'The Sorting Song'

Play 'The Sorting Song', and tell the children to join in with the song and move around to the beat. Afterwards, ask them if they can remember how some of the objects mentioned in the song were sorted into sets. Then play the song for them again.

edco.ie/aj87

Teaching tip

Encouraging the children to *use* the language of matching and sorting will help you to assess whether they understand the meaning of the various words and phrases.

Main event

C Concrete activity: Using Three Sorting Circles

Sorting objects that have multiple criteria is a crucial step in Number Readiness.

Assess whether the children have grasped the concept or are they 'forgetting' their chosen criteria mid-task? Distribute attribute blocks (reflecting the criteria of shape, size and colour) or other manipulatives and three sorting circles to each group. The children will sort the manipulatives in three different ways. They should communicate their choice and then make it, using the sorting circles to emphasise/contain their sets, for example:



- I am making a set of yellow shapes.
- I am making a set of round shapes.
- I am making a set of big shapes.

Pair work: The children should ask their partner questions, such as:

- Could this red shape/square join the set of yellow shapes/circles? (No, it does not belong to my set of yellow shapes/circles.)
- Could this blue shape/circle join your set?
- Could this large, round shape join your set? Why not?

Ask:

- Could you change your set of large and small yellow shapes to a set of only large yellow shapes? How would you do that?
- How would you change your set of large and small yellow shapes to a set of only small yellow shapes?

Let's strengthen

Some children might need to revise the language of 'same' and 'different' and/or get additional practice at matching pairs and sorting items into groups with one criterion (e.g. size).

Let's deepen

Some children might like to label their sets, either pictorially (e.g. with a drawing of a small red bear) or using the concrete manipulative itself (e.g. a large yellow square).

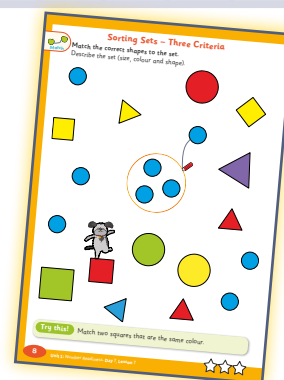
Let's deepen

Can some children make sets of large red shapes; small round shapes; or large, round yellow shapes?

Teaching tip

To strengthen the concept of sorting for one criterion (e.g. red shapes), you could use PCM 7: Carroll Diagram to emphasise the two different sets (e.g. a set of red shapes and its opposite, a set of non-red shapes).

P Pupil's Book page 8:
Sorting Sets – Three
Criteria



Optional consolidation and extension possibilities

Laundry Use the Laundry activity printable.
The children sort out the clothes.

Day 8, Lesson 8

Sorting at School

Focus of learning (with Elements)

- Describes the process of sorting and justifies selection criteria used in forming sets (C)

Learning experiences

- D** Digital activity: How Will We Sort Them?
MAM Routine: Reason & Respond
- C** Concrete activity: Sorting Random Collections
- P** Pupil's Book page 9: Sorting at School

Equipment

- Random collections of items from the display area, such as cones, twigs, leaves and conkers
- Random collections of classroom items, such as pencils, paper clips, biros, sticky notes and erasers

Maths language

- There is no new maths language for this lesson.

Warm-up



D Digital activity: How Will We Sort Them? MAM Routine: Reason & Respond

Play the slideshow. The children are asked how they might sort various collections of random objects.

(The first few slides show collections of objects that have already been sorted.)

Main event

C Sorting activity: Random Collections

This is a step further from sorting for multiple criteria using a 'controlled' variety of objects. Assess how the children respond to the 'random' assortment of objects. Distribute a collection of items to each group (e.g. a collection from the display area to three groups, and classroom items to two groups). Ask:



- How will we sort these objects?
- Where will we start?

The children should offer suggestions on how to go about sorting their own collections. They should then direct the activity and apply their own sorting ideas. Ask:

- Why did you put this object with that object? (They should explain their reasoning, using the following terms: *same, different, together.*)
- What have you done? You have put all of the ... (e.g. paper clips) together. You have made a group or set of paper clips.
- What about this ... (e.g. sticky note)? Could I put this ... with the set of paper clips?

Teaching tip

Note that some children might use subjective reasoning and say that the sticky note goes with the paper clips because they are both 'classroom things' (stationery).

The children should continue sorting, and explaining their reasoning, using the term *set* (or *sets*).

Let's deepen

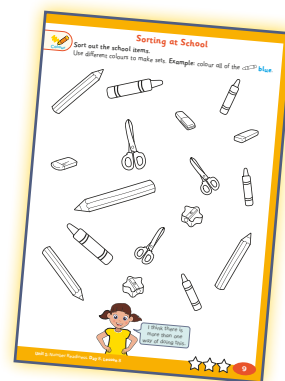
When the children have sorted the collections and voiced their criteria, ask:

- What could you do with these cones?
- Are they all the same?
- Could you make smaller/more sets (subsets) from these cones? (e.g. big ones and small ones)

Teaching tip

It is very important that the children sort 'real objects' into sets as opposed to sorting only manipulatives.

P Pupil's Book page 9: Sorting at School



Optional consolidation and extension possibilities

Maths Eyes Go on a maths hunt around the classroom. Can you see objects that you could put into groups/sets? (e.g. a set of books)

Day 9, Lesson 9

Comparing Sets – One-to-one Correspondence

Focus of learning (with Elements)

- Matches objects and/or sets, using one-to-one correspondence (U&C)

Learning experiences

- D** Digital activity: Is There One for Everyone?
MAM Routine: Reason & Respond
- C** Concrete activity: Comparing Sets **MAM Routine: Reason & Respond**

Equipment

- Collections of small items, such as cones, shells or beads
- Manipulatives

Maths language

- go together, enough, too many, more than, less than, extra, one more

Warm-up

- D** **Digital activity: Is There One for Everyone?**
MAM Routine: Reason & Respond

Open the digital activity and use it to demonstrate how to share treats between different numbers of children (represented by plates). For example, using three treats and three children (plates), ask:

- We have a set of three treats and a set of three children. Is there a treat for each child?
- How will we find out if there is a treat for each child? (Move a treat to each plate)
- Did we have enough treats?
- Was there a treat for each child?
- Were there too many treats or too many children?

Or, for example, using four treats and five children (plates), ask:

- We have a set of treats and a set of children. Is there a treat for each child?
- How will we find out if there are enough treats for everyone? (Move a treat to each plate)
- Is there a treat for each child?
- Are the sets the same?
- Are there too many treats / more treats than children / less (fewer) children than treats? Is there an extra treat / one more treat?
- Was there a treat for each child?

Continue with different numbers of treats and characters, eliciting the key maths language from the children.

Main event

- C** **Concrete activity: Comparing Sets**
MAM Routine: Reason & Respond

This is an ideal opportunity to make an intuitive and planned assessment of the children's Number Readiness. As they engage in the concrete activities, you could assess their understanding of:

- Matching:** *Why does this item match this item?* (using the words 'same' and 'different')



- Sorting:** *Why did you put all of those items together?*
- Sets:** *What could you call this set? (a set of ...)*
- Applying one-to-one correspondence:** *Is there enough? Which set has more/less?*

Distribute collections of small items and manipulatives to each group. Each child should take a handful of one item (e.g. beads) and a handful of a different item (e.g. cones). They should align their

sets on the table (horizontally and/or vertically) in one-to-one correspondence. Encourage them to use the following maths language: *too many, not enough, less, more* (i.e. less/more in this set). Children are not expected to name numbers at this stage, but

some might 'naturally' name numbers (e.g. *one more, two more*). They could 'guess' which set has more and which has less before applying one-to-one correspondence. This will build a foundation for subitising.

Optional consolidation and extension possibilities

Maths Journal The children draw a quantity of objects down the left-hand side of their page, e.g. 4 apples. They draw a corresponding apple for each left-hand-side apple on the right-hand side of the page. They match each object on the left with its partner on the right. They could do this activity in pairs if they wished. They could also use stickers instead of drawing.

Pair Work Working in pairs, one child aligns their set of shells, for example, with their partner's set of spoons, for example. Who has the most/least?

Bear Cards Use the Bear Cards activity printable. In groups of six or fewer, play 'Match the Bear'. Distribute a different card to every child. Place small green, red, blue and yellow bear manipulatives in the middle of the table. The children take turns closing their eyes and taking a bear, and then placing it on their card in one-to-one correspondence. The first child to fill their card wins the game.

One-to-One Correspondence The activities that follow provide good integration with PE and should be carried out in the PE hall.

Ask:

- Is there one beanbag for each child? Has anyone not got a beanbag? (You could go on to use rings/hoops and balls.)

Roughly half of the class should go to one side of the hall, and the other half should go to the other side. The two groups should line up opposite one another, in one-to-one correspondence, to see which group has more children. If there are more children on one side, how could we make the two sides/groups/sets the same? (You could try this with smaller groups of children as well.)

Planting Seeds Each child should plant one seed in a small pot or one seed in each compartment in a seed tray.

Rap with Percussion Compose a rap or chant. The children could move to the beat and add body or instrument percussion. For example:

- Is there a treat for Lexi?
- Yes, there is! (Clap and move to the left.)
- Is there a treat for Dara?
- Yes, there is! (Clap and move to the right.)
- Is there a treat for Jay?
- Yes, there is! (Clap and move to the left.)
- Is there a treat for Monty?
- YES, THERE IS! (Clap and jump up.)

Day 10, Lesson 10

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.

<p>Let's talk!</p> <ul style="list-style-type: none"> ● Use a digital activity from the warm-up sections to revise any areas of learning in which you think your class needs additional practice. ● Read one of the suggested picture books and discuss the story. 	<p>Let's play!</p> <p>Choose one of the games from the lessons and play it in the PE hall, or choose a classroom-based game.</p>
<p>Maths language</p> <p>Ask the children to use the maths language they learned during this unit. They might use concrete materials to demonstrate the language.</p> <p>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?</p>	<p>Let's sing!</p> <p>Sing a sorting song or the rap you may have composed with the class.</p>
<p>Progress Assessment Booklet</p> <p>Complete Questions 1–3 on page 6. Alternatively, these can be left to do as part of a bigger review during the next review week.</p>	<p>Maths Stations</p> <p>Set up Maths Stations so that you can assess any areas that need to be remediated, strengthen the learning for some children and/or extend the learning for others.</p> <p>Group 1: Sort sets for one criterion (e.g. sorting bears for colour).</p> <p>Group 2: Sort sets for two criteria (e.g. sorting bears for colour and size).</p> <p>Group 3: Sort sets, using sorting circles, PCM 7: Carroll Diagram.</p> <p>Group 4: Play 'Match the Bear', using the Bear Cards activity printable.</p> <p>Group 5: Play 'Fish Bingo', using PCM 6: Fish Bingo Cards. One child in the group should be the bingo caller.</p>
<p>Let's strengthen</p> <p>Identify children who might benefit from extra practice with some of the key concepts or skills in this unit. Consult the Unit 1 Let's Strengthen Suggestions for Teachers or the Unit 1 Let's Strengthen PCM for parallel tasks.</p>	<p>Let's deepen</p> <p>Use the Unit 1 Let's Deepen PCM.</p>

