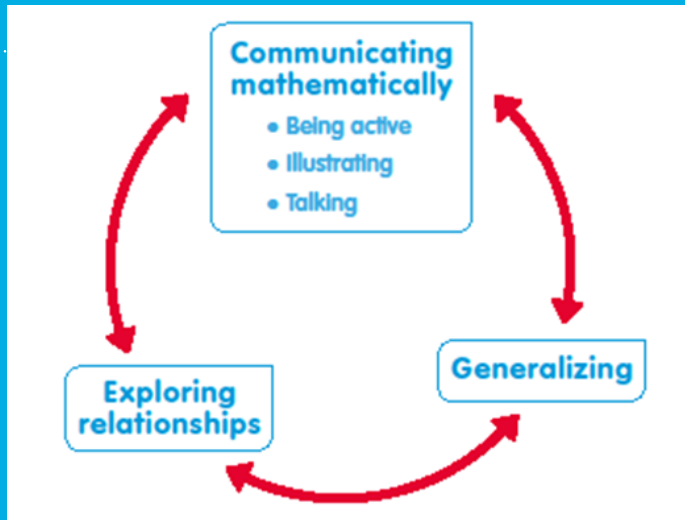




Planning Support

Refer to the Implementation Guide for further details

Download

Teaching Progression for NPC and GMS

Follow this sequence though the year(s)

Strand and activity group number	Activity group title
Getting Started	Getting started with Number, Pattern and Calculating 2
Numbers and the Number System 1	Counting to 100 and beyond
Pattern and Algebra 1	Exploring different patterns
Calculating 1	Adding and writing adding sentences
Calculating 2	Subtracting and writing subtracting sentences
Numbers and the Number System 2	2-digit numbers
Calculating 3	Ordering adding and subtracting facts
Pattern and Algebra 2	Exploring the inverse relationship between adding and subtracting within 10
Numbers and the Number System 3	More 2-digit numbers
Numbers and the Number System 4	Comparing and ordering numbers to 100
Pattern and Algebra 3	Exploring equivalence – introducing empty box notation
Measurement 1	Introducing centimetres
Calculating 4	Adding and subtracting whole tens
Geometry 1	Making and classifying polygons
Geometry 2	Identifying the faces, edges and vertices of solid 3D shapes
Calculating 5	Adding and subtracting 1 and 10
Geometry 3	Investigating symmetry
Pattern and Algebra 4	Odd and even
Calculating 6	Partitioning into tens and units to answer adding and subtracting problems
Pattern and Algebra 5	Patterns and sequences of 2s, 3s, 5s and 10s
Calculating 7	Adding and subtracting 1-digit numbers to and from 2-digit numbers

Strand and activity group number	Activity group title
Measurement 2	Introducing the 20p, 50p and £1 coins
Measurement 3	Introducing the £2 coin and the £5, £10 and £20 notes
Calculating 8	Introducing multiplying as repeated adding
Calculating 9	Learning times tables and about multiplying through arrays
Numbers and the Number System 5	Rounding
Calculating 10	Mental strategies for near doubles and adding and subtracting 9
Calculating 11	Bridging through multiples of 10
Geometry 4	Recognizing and naming prisms and cylinders
Calculating 12	Adding three or more 1-digit numbers
Calculating 13	Adding and subtracting 2-digit numbers to 100
Measurement 4	Introducing metres
Calculating 14	Adding and subtracting to 20
Calculating 15	Introducing dividing as 'How many ... in ... ?'
Pattern and Algebra 6	Logic
Calculating 16	Halves, quarters and thirds of wholes
Pattern and Algebra 7	Finding all possibilities
Numbers and the Number System 6	Introducing fractions as numbers – building on earlier work on fractions as operators (NPC2, Calc16)
Measurement 5	Introducing kilograms and grams
Measurement 6	Introducing litres and millilitres, and units of temperature
Measurement 7	Telling the time and adding and subtracting with units of time
Geometry 5	Investigating and describing rotation

Long Term Planning

Find these pages in
the Teaching
Handbook

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Number, Pattern and Calculating 4 – Teaching Resource Handbook – Long- and medium-term planning

Long-term planning

The long-term planning chart gives an overview of the expected coverage over the school year and the recommended order for teaching the activity groups. References to milestones have also been included in the chart.

Milestones indicate the skills and understanding children need to be secure in as they progress through the teaching programme before they can successfully meet new ideas. Specific details about the milestones can be found in the medium-term planning chart.

Strand and Activity Group Number	Activity Group Title
Getting Started	Getting started with Number, Pattern and Calculating 4
Calculating 1	Using adding and subtracting facts and understanding inverse relationships
Numbers and the Number System 1	Understanding place value in 4-digit numbers
Pattern and Algebra 1	Exploring sequences and number patterns
Numbers and the Number System 2	Ordering and comparing numbers to 1000 and beyond
Calculating 2	Strategies for bridging when adding and subtracting
Milestone 1	
Numbers and the Number System 3	Estimating and rounding
Calculating 3	Developing fluency with mental adding strategies
Calculating 4	Developing fluency with mental subtracting strategies
Calculating 5	Developing fluency with multiplying facts to 12×12
Calculating 6	Developing fluency with dividing facts to 12×12
Milestone 2	
Pattern and Algebra 2	Exploring inverse relationships
Calculating 7	Mental strategies for multiplying and dividing by 10 and 100
Numbers and the Number System 4	Introducing negative numbers
Numbers and the Number System 5	Fractions and recognizing part-whole relationships
Calculating 8	Developing fluency with the column method of adding
Calculating 9	Developing fluency with the column method of subtracting
Milestone 3	
Numbers and the Number System 6	Introducing decimal fractions
Pattern and Algebra 3	Exploring 'equals' in balancing number sentences
Calculating 10	Exploring the distributive property and developing written methods of multiplying
Milestone 4	

numicon
professional development

- See the Milestones Grid
in the Photocopy Section
of your Teaching
Handbook to record
students' learning

Strand and Activity Group	
Pattern and Algebra 7: Finding all possibilities	
Focus activities 1. Finding possible combinations of two numbers equalling 10 2. Exploring possible adding and subtracting facts 3. Finding all possible ways of making 5 with numbers 1–5 4. Finding all possibilities when working with 4 5. How many different ways can you pay for something that costs 10p or £1? 6. Finding possibilities – pirate costumes 7. Finding all possibilities with a set of Numicon Shapes 1–4	Learning opportunities • To realize that, when finding all possibilities, it is helpful to have a system. • To devise a system in order to keep track of the possibilities that have been tried, and to establish that all possibilities have been found. • To be able to explain the system that has been followed to order an investigation.
Numbers and the Number System 6: Introducing fractions as numbers	
Focus activities 1. Thinking about ‘halfway’ and ‘quarter way’ 2. Marking half and quarters between 0 and 1 on a number line 3. Spacing whole numbers evenly along the number line 4. Marking halfway between whole numbers 5. Counting in fractions from 0–10	Learning opportunities • To meet the idea that fractions have places on the number line between whole numbers (integers). • To relate halving and quartering to distances travelled on a number line. • To use fraction notation to label distances along a number line from zero.
Milestone 7	
By this point, children should be able to: • Describe objects and number ideas according to their attributes and use these to help solve problems • Understand a general statement and find particular examples to fit the rule • Recognize that dividing can be expressed as finding ‘how many groups are there in ...?’ and read and write dividing number sentences using the ‘:’ symbol • Explain and use the inverse relation between multiplying and dividing (with the sequences of 2s, 3s, 5s and 10s) • Interpret a realistic context as one inviting either ‘multiplying’ or ‘dividing’ • Know that multiplying has a commutative property (and dividing does not) and use this to help when solving dividing questions • Devise ways of organizing and recording their work systematically, when finding all possibilities and explain how they know they have found all possibilities • Know that ‘one quarter’ means one of four equal parts of a whole and ‘one third’ means one of three equal parts • Recognize, find, read and write $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$ and $\frac{3}{4}$ and explain that fractions are between whole numbers on the number line • Explain the equivalence between $\frac{1}{2}$ and $\frac{2}{4}$ • Understand $\frac{3}{4}$ as three of four equal parts	

[illegible]

Getting Started

The opening page of the Activity group will provide you with:

- Educational Context
- Learning opportunities
- Words and terms for use in conversation
- Assessment opportunities
- Explorer Progress and Explore More references

Key mathematical ideas Counting, Place value, Grouping, Mathematical thinking and reasoning

Getting Started

Getting started with Number, Pattern and Calculating 2



Educational context

This group of activities is designed to help all children make the connections between Numicon Shapes and Numicon Shape patterns, number rods, number names and numerals that support children as they work with Numicon. Depending on children's previous experiences, you may need to allow up to two weeks to cover these activities. Activities 1, 5 and 8 and the corresponding Independent practices are for children meeting Numicon Shapes and/or number rods for the first time. These children are likely to need more time on the remaining activities than those who have worked with Numicon before. Some may need to repeat Activity 3, until they can quickly and accurately build the Numicon Shape pattern for each Numicon Shape and label it with its number name without counting. Children who are familiar with Numicon are likely to benefit from revising the activities involving number rods.

The activities provide opportunities to observe how children approach their mathematics work, and assess their reasoning and their understanding of cardinal and ordinal number ideas.

Learning opportunities

- To instantly link the Numicon Shapes with number names and numerals.
- To notice patterns in number relationships reflected in physical materials and imagery.
- To learn to describe number relationships using the words and terms for use in conversation.

Words and terms for use in conversation

number names (one, two, ...), pattern, next, before, after, in between, ordinal number words, words for comparing (small, smaller than, smallest, long, longer than, longest, big, bigger than, biggest, more than, less than, few, fewer than, fewest), set, equal, visualize

Assessment opportunities

Look and listen for children who:

- Use the words and terms for use in conversation effectively in discussion.
- Refer to Numicon Shapes and number rods using cardinal number names.
- Notice patterns in the ordered sequence of Numicon Shapes and use these to predict what the next Shape in the sequence might look like.
- Build Numicon Shape patterns with objects, without counting.
- Consistently order the Numicon Shapes and/or number rods and label them with number names and numerals.
- Describe relationships between the Numicon Shapes or the number rods using words for comparing.
- Build teen numbers with Numicon Shapes and number rods, name them and label them with numerals.

Explorer Progress Book 2a, pp. 2–3

After completing work on this activity group, give small focus groups of children their Explorer Progress Books and ask them to work through the challenges on the pages. As children complete the pages, assess what progress they are making with the central ideas from the activity group. Refer to the assessment opportunities for assistance.

Explore More Copymaster 1: Star Numbers

After completing work on Activity 4, give children Explore More Copymaster 1: Star Numbers to take home.

Getting Started

The Activity Summary
can be downloaded
from Oxford Owl if
you are a subscriber

Getting Started: Getting started with Number, Pattern and Calculating 2

Key mathematical ideas Counting, Place value, Grouping, Mathematical thinking and reasoning

Educational context

This group of activities is designed to help all children make the connections between Numicon Shapes and Numicon Shape patterns, number rods, number names and numerals that support children as they work with Numicon. Depending on children's previous experiences, you may need to allow up to two weeks to cover these activities. Activities 1, 5 and 8 and the corresponding Independent practices are for children meeting Numicon Shapes and/or number rods for the first time. These children are likely to need more time on the remaining activities than those who have worked with Numicon before. Some may need to repeat Activity 3, until they can quickly and accurately build the Numicon Shape pattern for each Numicon Shape and label it with its number name without counting. Children who are familiar with Numicon are likely to benefit from revising the activities involving number rods. The activities provide opportunities to observe how children approach their mathematics work, and assess their reasoning and their understanding of cardinal and ordinal number ideas.

Learning opportunities

- To instantly link the Numicon Shapes with number names and numerals.
- To notice patterns in number relationships reflected in physical materials and imagery.
- To learn to describe number relationships using the words and terms for use in conversation.

Words and terms for use in conversation

number names (one, two...), pattern, next, before, after, in between, ordinal number words, words for comparing (small, smaller than, smallest, long, longer than, longest, big, bigger than, biggest, more than, less than, few, fewer than, fewest), set, equal, visualize

Assessment opportunities

Look and listen for children who:

- Use the words and terms for use in conversation effectively in discussion.
- Refer to Numicon Shapes and number rods using cardinal number names.
- Notice patterns in the ordered sequence of Numicon Shapes and use these to predict what the next Shape in the sequence might look like.
- Build Numicon Shape patterns with objects, without counting.
- Consistently order the Numicon Shapes and/or number rods and label them with number names and numerals.
- Describe relationships between the Numicon Shapes or the number rods using words for comparing.
- Build teen numbers with Numicon Shapes and number rods, name them and label them with numerals.

Explorer Progress Book 2a, pp. 2–3

After completing work on this activity group, give small focus groups of children their Explorer Progress Books and ask them to work through the challenges on the pages. As children complete the pages, assess what progress they are making with the central ideas from the activity group. Refer to the assessment opportunities for assistance.

Explore More Copymaster 1: Star Numbers

After completing work on Activity 4, give children Explore More Copymaster 1: Star Numbers to take home.

Focus activities

1. Exploring the Numicon Shapes
2. Cover the Baseboard with Numicon Shapes
3. Building Numicon Shape patterns
4. Drawing Numicon Shape patterns
5. Exploring the Numicon Display Number Line
6. Building, naming and ordering numbers 0–20 with Numicon Shapes
7. Looking at the structure of numbers to 20
8. Exploring number rods
9. Naming number rods and labelling them with numerals
10. Building, naming and labeling numbers to 20 with number rods
11. Describing relationships between Numicon Shapes/number rods (essential preparatory work for Activity 12)
12. What Shape/rod is in the Feely Bag?

Short term planning template

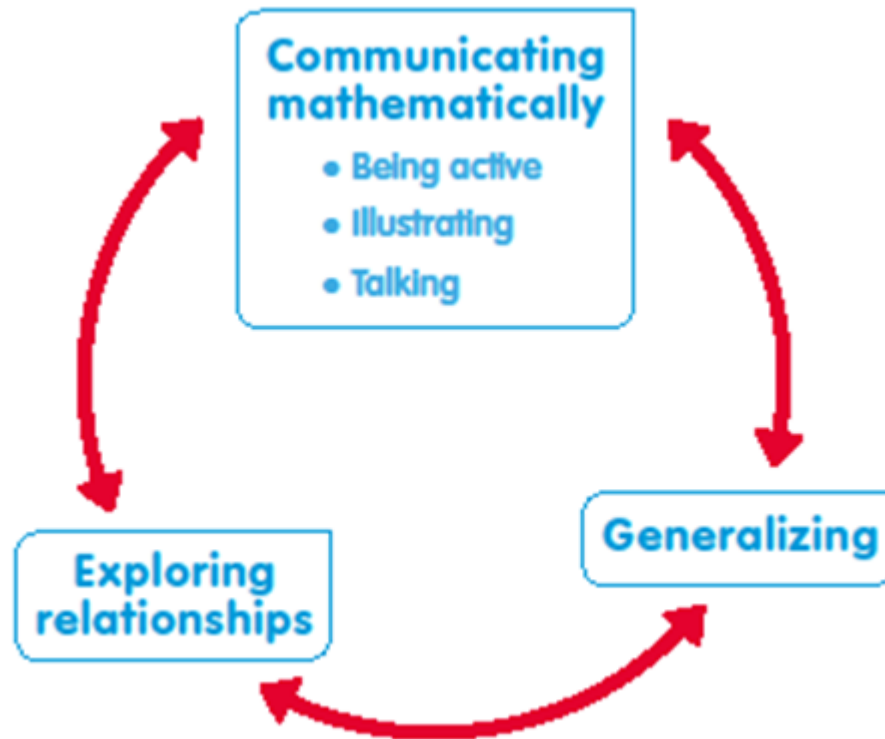
	Warm-up	Main Teaching Focus	Focused Group Work with the Class Teacher or Teaching Assistant	Independent Work	Plenary
Activity Number/Title					
Learning opportunities					
Notes and Educational context					
Words and terms					
Resources					
Assessment opportunities					

Templates can be downloaded from
Numicon.co.nz, Oxford Owl (Word and xcel)

BB planning template

BREAKING BARRIERS - STRAND:		#	TITLE:		NAME:	
Short-term planning	Daily counting Monday:	Tuesday:	Wed:	Thurs:	Friday:	
Educational Context						
Aims	•					
Communicating, Words and terms	•					
Assessment opportunities	Look and listen for, linked with Individual Record of Progress: •					
Context and links to the class programme	•					
Main Teaching	Activity _					
Further steps/practice						
Extending the activities						
Resources						
Homework	Numicon Intervention CD Folder___ #___ AND/OR					
Reflection						

This should be evident in all your planning



Get ready

- Apparatus
- Other resources
- Photocopy masters
- Explore More
- Explorer Progress books

Read through and do the Focus Activity to be confident before the lesson

Organisational files to help you get started are available through the Resources section of the website

Assessment

Formative Assessments

Explorer Progress Books

Teacher observation and conversations while working alongside child

Record progress in the Milestones Grid in the Teaching Handbook, on the downloaded file, or in the xcel spreadsheet also downloaded from Oxford Owl

See Assessment Booklet for more information

Milestones and planning signposts

The milestones are specific points that children need to have a good understanding of before they move on to the next section of activity groups.

The statements in each milestone are founded on the assessment opportunities in the preceding activity groups. Your on-going assessing enables you to keep a record of each child's attainment and track their progress against the collated milestones for the year.

At the point of each milestone, you can reflect on each child's achievement and decide whether you need to plan further support and practice for them, give them time to consolidate their understanding, or whether they are ready to move on.