

Assessing Pupils' Progress (APP) with Numicon

Many schools who are getting to grips with APP and working hard to make the process of ongoing assessment as valuable and manageable as possible, have been getting in touch with us for advice. They are finding that APP has implications for the sorts of activities teachers plan, and also for their teaching style. With this in mind we have cross referenced our teaching programme to the outcomes for levels 1 to 3 in the Assessing Pupils' Progress: Criteria for Number and Algebra. These references can support teachers with a choice of activities, which will address both planning and assessment in APP.

Activities with Numicon give opportunities to start conversations with the children and encourage them to explain their reasoning as they tackle an activity. We find that children are more confident to have a go at explaining their thinking when the Shapes are available to support them.

Knowing when children have secure understanding and when to move them on worries some teachers. We look for children who can explain what they are doing with clarity as evidence to suggest solid understanding. You can also clearly spot the children who are using Numicon Shapes by trial and error or with muddled explanation, which suggests they don't yet understand the ideas. Children who are self-correcting are on the way to understanding, but are probably not yet secure.

Since many Numicon activities are discussion based and practical they provide good evidence for the Using and Applying outcomes in APP. By listening to what children are saying as they work on the activities and observing what they do with the Shapes, teachers tell us they are able to make good judgements about how children's understanding in Number is supported by their Using and Applying skills.

Use the tables on the following pages of this document as a guide to match the APP criteria to the Numicon Teaching Programme.

Assessing Pupils' Progress (APP), Number Ma2, Level 1

APP outcomes	Numicon Firm Foundations Kit Activity Reference	Numicon Kit 1 Activity Reference
Count up to 10 objects.	1b, 6b, 7b, 8a, 8b, 9a, 9b	–
Read, write numbers to 10.	7b, 8a, 8b	–
Order numbers to 10.	6b, 7a, 7b, 8a	–
Begin to use the fraction, one-half.	–	–
Understand addition as finding the total of two or more sets of objects.	10a, 10b, 11a, 11b	Calculating: 1A, 1B Using Pattern: 3A
Understand subtraction as 'taking away' objects from a set and finding how many are left.	12a, 12b	Using Pattern: 3B Calculating: 3A
Add and subtract numbers of objects to 10.	10a, 10b, 11a, 11b, 12a, 12b, 13a, 13b	Calculating: 4A, 4B, 6A, 6B, 7B
Begin to know some addition facts.	10a, 10b, 11a, 11b	Calculating: 4A, 5A, 6A
Solve addition/subtraction problems involving up to 10 objects record their work.	10a, 10b, 11a, 11b, 12a, 12b, 13a, 13b	Numbers and the Number System: 4A Calculating: 1A, 1B, 2A, 2B, 3A

Assessing Pupils' Progress (APP), Number Ma2, Level 2

APP outcomes	Numicon Kit 1 Activity Reference	Numicon Kit 2 Activity Reference
Recognise sequences of numbers, including odd and even numbers.	Using Pattern: 5A, 5B	Using Pattern: 6
Count sets of objects reliably.	Numbers and the Number System: 1A, 1B, 3A, 3B	–
Begin to understand the place value of each digit; use this to order numbers up to 100.	Numbers and the Number System: 2A, 2B, 3A, 3B, 4B, 5A, 5B, 6A, 6B, 7A	Numbers and the Number System: 1, 2, 3, 5, 6, 7, 8
Begin to use halves and quarters and relate the concept of half of a small quantity to the concept of half of a shape.	–	Calculating: 21 Numbers and the Number System: 11, 12
Understand halving as a way of 'undoing' doubling and vice versa.	–	Calculating: 3
Use the knowledge that subtraction is the inverse of addition.	Calculating: 8A	Using Pattern: 1
Use mental recall of addition and subtraction facts to 10.	Calculating: 4A, 4B, 5A, 5B, 7A, 7B, 8B	Calculating: 1
Use mental calculation strategies to solve number problems including those involving money and measures.	Using Pattern: 6A, 6B Numbers and the Number System: 7B Calculating: 3B, 9A, 9B, 10A, 10B, 11A, 11B, 12A, 12B, 13A, 13B	Pattern: 2 Numbers and the Number System: 4 Calculating: 1-8
Record their work in writing.	Calculating 1A, 1B, 2A, 2B, 3A Using Pattern 4A, 4B	Calculating 1-10
Choose the appropriate operation when solving addition and subtraction problems.	–	Calculating 9-10

Assessing Pupils' Progress (APP), Number Ma2, Level 3

APP outcomes	Numicon Kit 1 Activity Reference	Numicon Kit 2 Activity Reference
Recognise a wider range of sequences.	Using Pattern: 5A, 5B	Using Pattern: 7
Begin to understand the role of '=' (the 'equals' sign).	Calculating: 2A, 2B	Using Pattern: 3, 4
Understand place value in numbers to 1000.	–	Numbers and the Number System: 9
Use place value to make approximations.	–	Numbers and the Number System: 10
Recognise negative numbers in contexts such as temperature.	–	–
Use simple fractions that are several parts of a whole and recognise when two simple fractions are equivalent.	–	Calculating: 21
Begin to use decimal notation in contexts such as money.	–	Numbers and the Number System: 9
Derive associated division facts from known multiplication facts.	–	Calculating: 17-20
Add and subtract two-digit numbers mentally.	–	Using Pattern: 8, 9 Calculating: 9, 10
Add and subtract three digit numbers using written method.	–	–
Multiply and divide two digit numbers by 2, 3, 4 or 5 as well as 10 with whole number answers and remainders.	–	Calculating: 11-20
Use mental recall of addition and subtraction facts to 20 in solving problems involving larger numbers.	–	Using Pattern: 5 Calculating: 1-10
Solve whole number problems including those involving multiplication or division that may give rise to remainders.	–	Calculating: 1-20 Using Pattern: 5