numicon
a clear image for maths

Learning to tell the time with Numicon

This free resource is designed to help children connect what they know about numbers and Numicon to understand the numbers on the clock face and ultimately help them learn to tell the time.

Step 1
First attach Numicon Shapes to the wall around the clock in your classroom so the children start to notice the relationship between the numbers on the clock face and the Numicon Shapes.

Step 2
Using the clock on page 2 (the version with no Numicon Shapes) ask children to arrange Numicon Shapes around the clock face as shown on the clock on page 3 (the version with the Numicon Shapes). Relate this sequence to the same sequence on the Numicon number line.

Step 3
Once children are happy with the sequence of the Numicon Shapes in relation to the clock face you can create your own Numicon clock using the clock on page three of this document.

Please note: You may find it helpful to print out the clock resources in colour at a larger size. You will also need to have a battery powered or a model geared clock movement to demonstrate some of the following activities.

Early stages towards understanding time include:

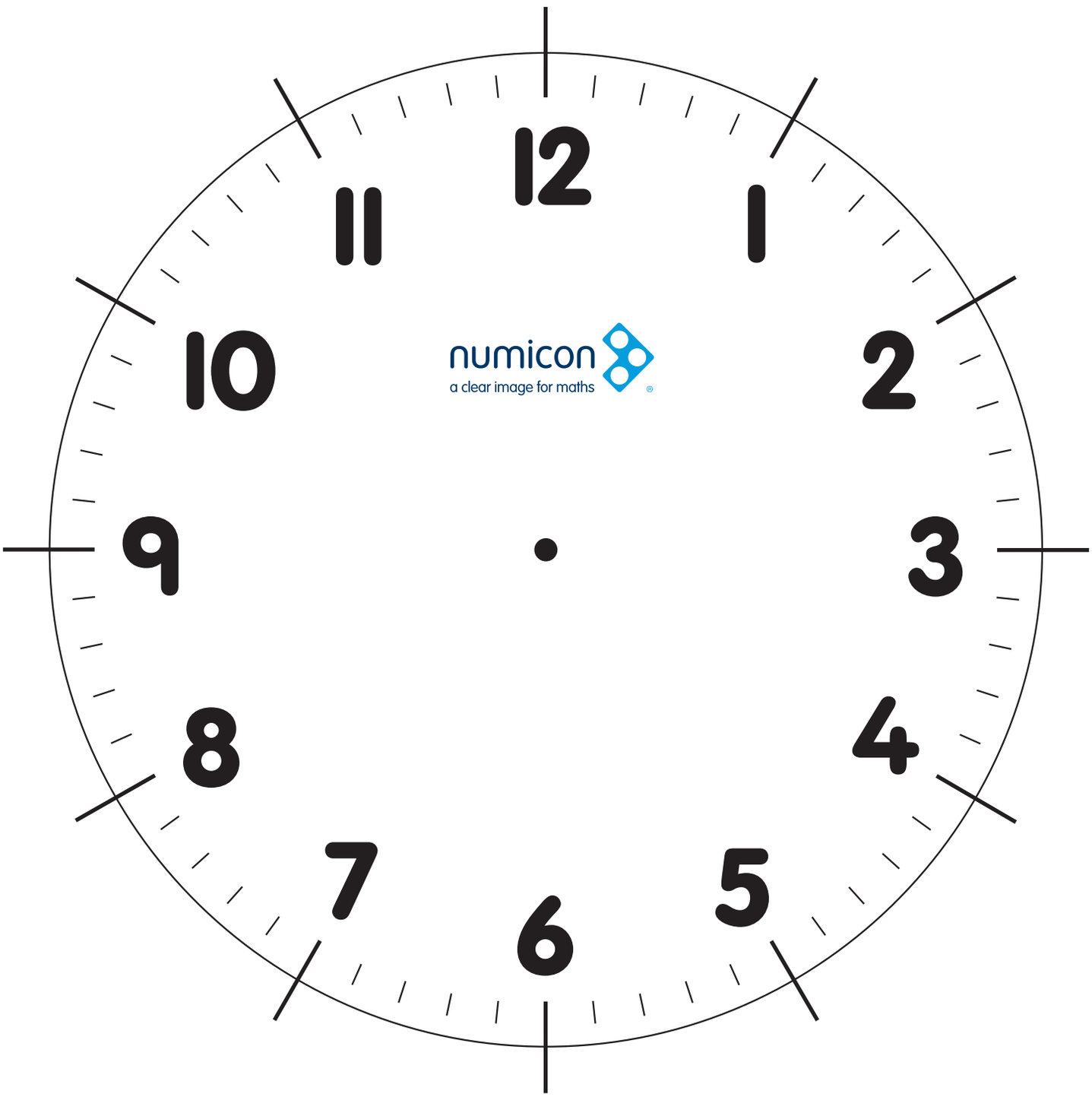
- Early years activities like knowing about day and night, days of week.
- Getting a feel for the passing of time through stories and through making visual timetables with pictures/symbols and key words.
- Showing passage of time during the day by using a dial timetable.
- Showing passage of time during year showing a dial with the calendar of months with special events.
- Familiarity with the clock face. Start to draw attention to it, introduce early language, eventually introduce the words for hours and minutes. To avoid confusion refer to the minute hand as the 'minute hand' and not the 'long hand' since minutes are a measure of short time, and the hour hand as the 'hour hand' and not the 'short hand' and hours are a measure of a long time.
- Using a model geared clock introduce the word 'o'clock' attached to number 12, moving minute hand once round the clock – this is one hour, this is a long time. Notice what is happening to the hour hand. Count the hours – 1 hour, 2 hours, etc.
- Introduce the language o'clock and practise reading these.
- Make a time diary – showing start and end of activity e.g. I played football from 10 'o'clock' until 11 'o'clock'. Include a sentence and picture giving the date, month, year, day.
- At certain times ask children to check the clock for events that happen on the hour and half hour. Ask questions like "Is it nearly playtime?" "Is it a long time or a short time until tea?"
- Identify key times during the day: playtime, bedtime, lunchtime and find these together by moving the hour and the minute hand into the correct position.
- Provide sheets of blank clock faces for the children to fill in with times that are significant.

To solve problems involving time children need to be working at Level 3 of the National Curriculum and to make the connection between telling the time and their other number work (some such questions are included in KS1 SATS). Many of the number ideas involved are addressed in Kit 2 and will be extended in Kit 3 with a whole module on Time. (Kit 3 is in development for publication in September 2009). When we look carefully at the prior knowledge required for solving time problems its clear how challenging these problems are for many children in KS1. Below is a note of just some of this prior knowledge:

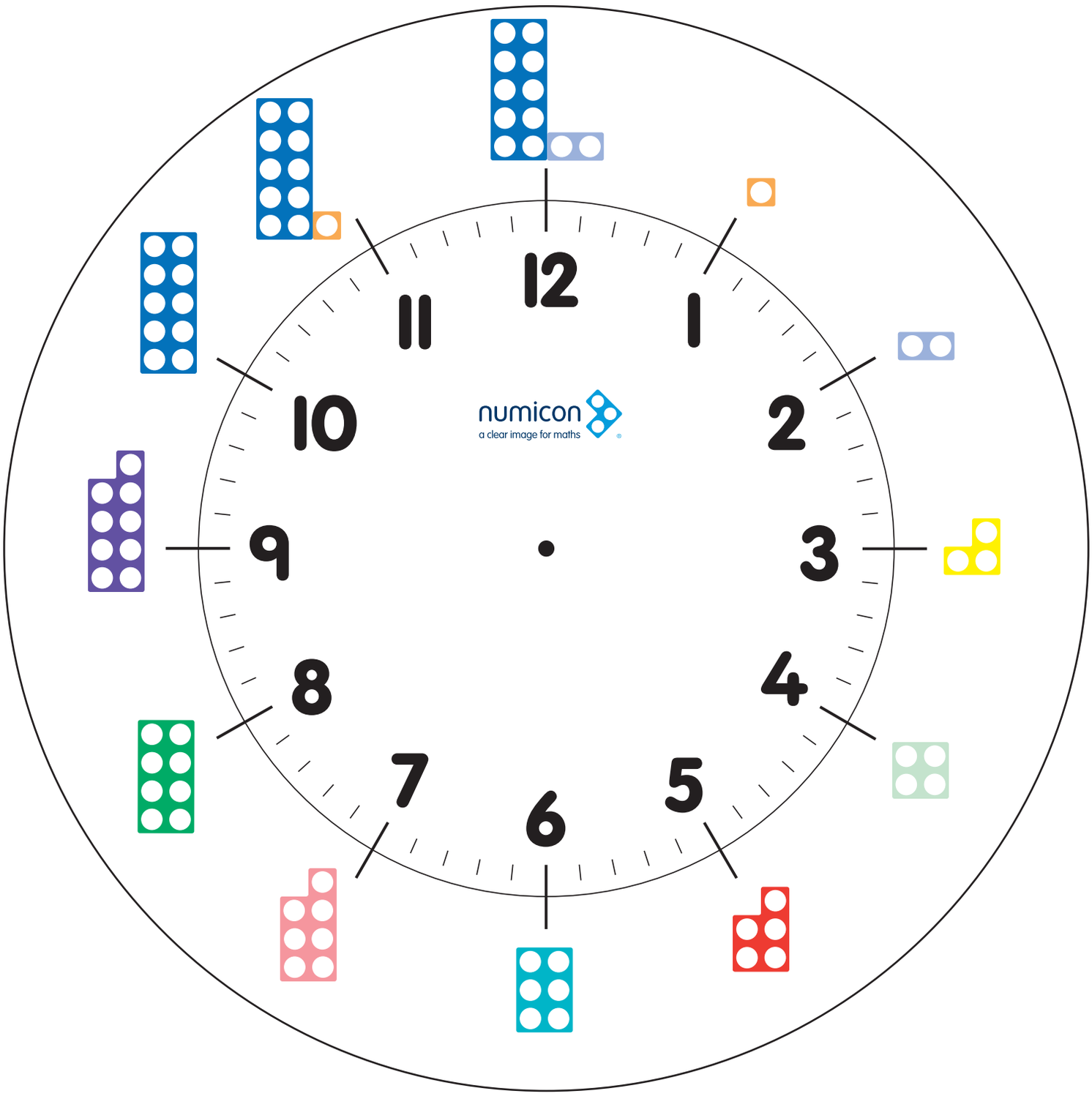
- Familiarity with both analogue and digital clocks and how the times are related.
- Understanding the language involved in time e.g. 20 mins after/past, 20 mins before/to.
- Understanding the number line and being able to place numbers on this relative to each other.
- Understanding half and quarter, relating this to rotation and to be able to read the hour and half hour of a clock face.
- Understanding the half hour (30 minutes) and the quarter hour (15 minutes) at different positions and not just in the halves and quarters of the clock face.
- Making connections to work out the passage of time e.g., if a cake needs to bake for 2 ½ hours and it is now 2.15. What time will the cake be cooked?
- Understanding difference between higher numbers to find out e.g., if it is 10.20 now and my friends are arriving at 10.45. How long is it until they arrive?
- Bridging multiples of 10 in addition and subtraction e.g. It is 5.37 my egg will be cooked in 5 minutes, what time will it be ready?
- Addition and subtraction of tens and units – crossing tens, e.g. I am helping my Mum and Dad in the garden it will take 2 hours and 55 minutes to cut the grass and 3 hours and 45 minutes to trim the hedge, how long will this take altogether?
- Knowing the five and ten times multiplication tables.

Useful Numicon equipment for the above:

Number Rods and Rod Track, Numicon Shapes and Tens Number Lines.



To be of sufficient size this clock will need to be printed out at a larger size



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