

## Classroom

This section outlines features of the Wave 3 mathematics materials and their intended use in the classroom.

Key features of effective Wave 3 interventions as highlighted in the research review have been incorporated in the design of the Wave 3 mathematics pack.

In particular these are:

- *a focus on the most commonly occurring types of mathematical difficulties*

The materials focus on number and calculation, tackling areas such as understanding the structure of number and operations between numbers. Problem-solving is integrated and exemplified in the materials, and opportunities are provided for children to develop mathematical vocabulary.

- *an individualised approach based on the particular areas the child finds difficult*

The materials reflect best practice in assessment for learning and include tracking children's learning charts that support the identification of the particular knowledge, skills and understanding with which the child needs help.

- *relatively small amounts of individualised intervention*

The Wave 3 teaching activities provide brief, focused teaching sessions which make it possible for the child to benefit more fully from whole-class teaching. Where appropriate, the activities finish with related activities for whole-class use in order to reinforce individual learning and promote inclusive practice.

'All activities were seen as being short, sharp and effective. The materials were easy to use by all involved – including parents who used some as 'homework' activities.'

*Extract from a report from a pilot school*

'All teachers felt that the children were enthusiastic about the activities because they were short and snappy and practical.'

*Extract from a report from a pilot school*

## Processes

This section provides guidance to support effective use of Primary National Strategy Wave 3 mathematics teaching materials.

### Flexibility to meet identified needs

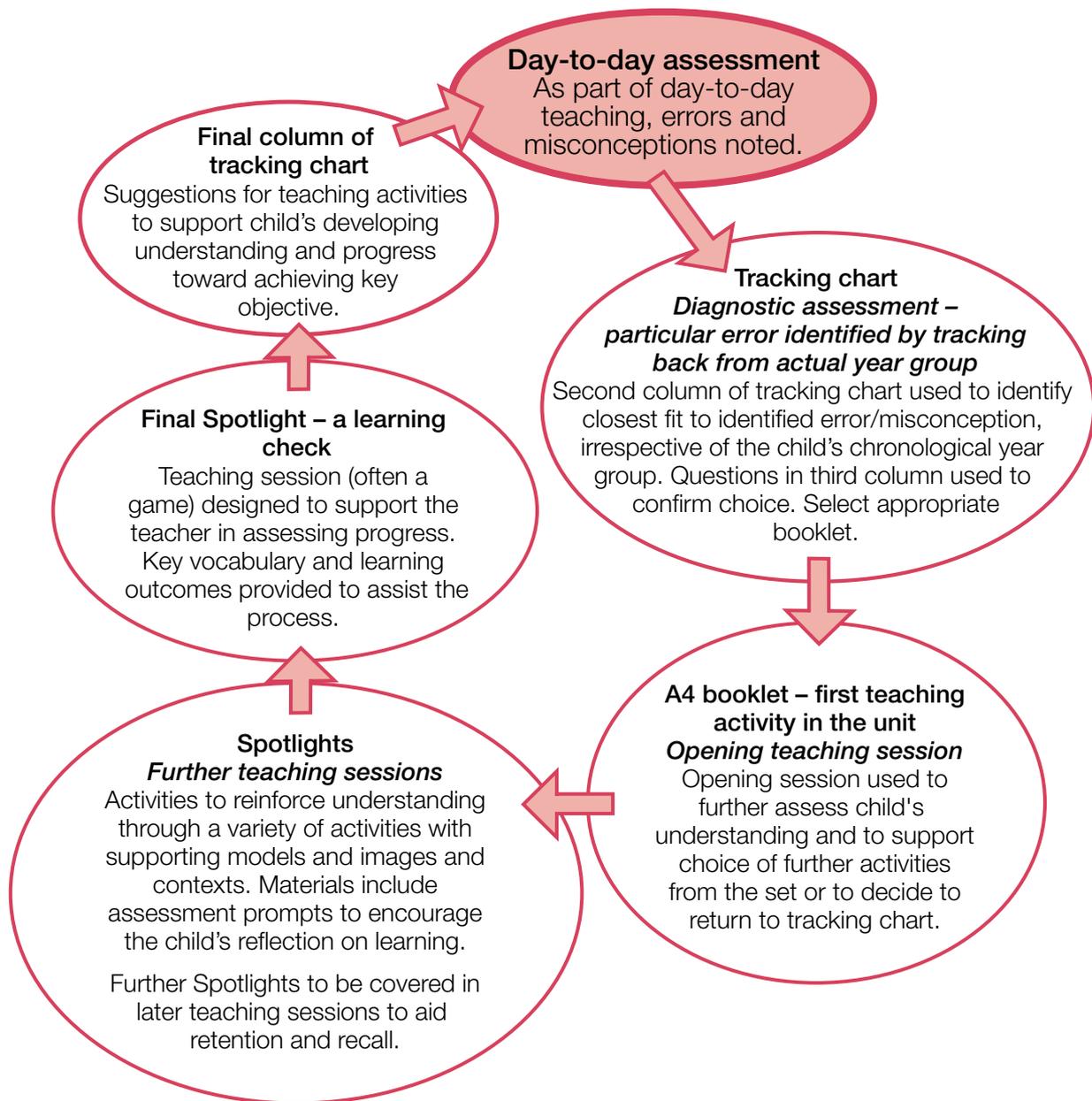
The materials are intended to be used flexibly but with the expectation that decisions about selecting from the materials will be based upon information from a tracking children's learning chart. Once a set of teaching activities related to a particular error or misconception is identified, it is up to the teacher to decide which activities within the set are relevant for a particular child.

Further flexibility is available as teachers annotate and adapt activities. Word versions of the teaching materials are provided on the CD-ROM to enable easy adaptation. As teachers become familiar with the model presented in these materials, they may well choose to use this framework to develop their own teaching materials for misconceptions and errors not represented in the pack.

### Using the tracking charts and teaching materials

Day-to-day assessment is the starting point. Assessment opportunities are embedded in all the teaching materials.

The following flow chart describes the process assumed in the design of these Primary National Strategy materials.



## Organisation

Particular organisational issues that pilot schools tackled in a variety of ways were:

- intervals between teaching sessions;
- resources and their management.

## Intervals between teaching sessions

To aid retention and recall it is intended that teaching sessions are organised with a small interval of time between them. Pilot schools experimented with having a number of days between Spotlights but found that if the interval was too long, previous understanding was not embedded. The following case studies illustrate the strategies schools used to achieve effective timing.

During the pilot study one school tried to stick as closely as they could to the suggested pilot study timings but found that because of the demands of both timetabling and staffing, they just had to make the best 'fit' they could. At first their pattern for Wave 3 interventions was to work with the child on Tuesday, Wednesday and Thursday. However, they found retention so poor that they changed the whole school timetable (assemblies and so on) so that sessions could be on Monday, Wednesday and Friday. They thought that this improved retention and they were starting to send some activities home over the weekend, having recently begun to involve the parents of children involved.

Another pilot school found the suggested five minutes for the Spotlight sessions difficult to manage. They could not timetable the same children for intensive work quite as often as was suggested. They wanted to incorporate as much repetition as they could (to give the children a chance to remember important information) so class teachers targeted specific children for early morning sessions to back up the Wave 3 work that the SENCO and teaching assistants were also doing with those individuals and groups.

The timetabling varied: some groups worked in early morning sessions or after lunch. Other groups worked during the mathematics lesson: in the mental/oral starter time in small groups or as individuals, or sometimes in plenary time.

## **Resources and their management**

Each A4 book includes lists of resources for the teaching activities.

These draw on a wide range of resources which can be categorised as:

- mathematics resources available in most schools;
- readily accessible everyday resources;
- resource sheets provided as part of the pack.

In Appendix 5, page 58, there are lists of equipment suggested for the teaching materials in the pack.

The A4 booklets include reference to resource sheets provided as part of the pack in the book, *Resources and index of games* and on the CD-ROM.

Some Interactive Teaching Programs (ITPs) are referenced within the A4 books. Others will provide a very relevant and useful resource to support children's learning during Wave 3 sessions. A suggested list is included in Appendix 5, page 59.

ITPs can be downloaded from [www.standards.dfes.gov.uk/primary](http://www.standards.dfes.gov.uk/primary) for the latest versions, or from the CD-ROM.

In one pilot school, the headteacher made it a spending priority to give each teaching assistant their own pack of practical resources containing 100-squares, wipe-clean number lines, cubes, number cards, calculators, bead strings, dice, spinners, place value (arrow) cards, and so on. This funding decision followed on from a training session for teachers and teaching assistants when they watched video clips from the CD-ROM in the *Using models and images to support mathematics teaching and learning in Years 1 to 3* pack.

In another school the parents and governors provided the money for every child in the school to have a basic pack of resources in a plastic wallet.

One pilot school bought a large plastic box to store resources and this was kept centrally in school, beside the teaching materials. Resources were chosen carefully to promote a multi-sensory approach to learning; it was hoped that using colour, visual models, movement and sound would aid longer-term retention of concepts.