

The National **Numeracy Strategy**

SPRINGBOARD

5

Mathematics catch-up
programme for Year 5

ACKNOWLEDGEMENT

This initiative has been based on a catch-up programme for Year 5 originally devised by the Hamilton Trust for use in schools in the Hamilton Oxford Schools Partnership. The National Numeracy Strategy would like to thank the Hamilton Trust for permission to draw freely on the materials written for their programme.

The National Numeracy Strategy (NNS) is designed to raise standards in mathematics for all children in Key Stages 1 and 2. The Government has set a target of 75% of 11-year-olds to achieve level 4 in mathematics by 2002.

Without carefully targeted help, some children in Year 5 are likely to achieve level 3 rather than level 4 in mathematics at the end of Key Stage 2. A high proportion of these children have the potential to catch up, given a well-planned programme and targeted teaching. Springboard 5 helps to provide such a programme. The mathematical knowledge and skills that it addresses are crucial if these children are to fulfil their potential in the subject in Year 6 and beyond in Key Stage 3.

These materials have been based on tried and tested weekly units of work originally developed by the Hamilton Maths Project and used successfully in schools in the Oxford Education Action Zone. Some changes have been made to cater for national dissemination but the mathematical content and approach to teaching remain essentially the same.

Springboard 5 is designed for teaching in the autumn and spring terms. It aims to bring children up to a level where they can more easily access the Year 5 teaching programme in the *Framework for teaching mathematics*. It does not replace this programme, but complements it. The Springboard 5 initiative should be run in addition to, not instead of, the daily mathematics lesson.

This guidance is for Year 5 teachers, other teachers who are involved directly with teaching the Springboard programme, teaching assistants and mathematics co-ordinators. It is organised in three sections:

PART 1

Introductory notes on planning and teaching the Springboard 5 programme, including the role of the teaching assistant

PART 2

Teaching objectives of the weekly teaching units and their link with the Year 5 teaching programme

PART 3

Teaching materials: 10 weekly units of work with teaching notes for the main lesson and follow-up session, photocopiable activity sheets and homework tasks

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PART 1

AIMS

Springboard 5 is for use in Year 5. It is intended specifically for children who, without extra help, are likely to achieve level 3 in mathematics at the end of Key Stage 2. Its main aims are:

- to support the identified children and to tackle their weaknesses in mathematics so that they are in a better position to access the Year 5 and 6 teaching programmes;
- to set the expectation that these children will catch up with their peers and achieve level 4 at the end of Key Stage 2;
- to help teachers to prepare a teaching programme that enables the children to benefit fully from the main teaching programme for Year 5 as soon as possible.

THE SPRINGBOARD 5 MATERIALS

The materials have been designed as a stand-alone 10-week course to be delivered to children in groups of 8–12. Some schools will receive funding to support the Springboard 5 initiative. Year 5 teachers in other schools may decide to deliver the course in full or to draw on the materials for use with children who do not have a sufficiently firm grasp of the groundwork required for the Year 5 teaching programme.

Springboard 5 consists of ten weekly units of work, preferably for use in the autumn and spring terms. There is a 50-minute lead lesson and a 45-minute follow-up session that consolidates the work introduced in the lead lesson and, in some cases, takes it a small step further. Three photocopiable activity sheets are provided for each weekly unit of work. One of these is introduced in the main lesson and another in the follow-up session. The third can be completed by children requiring further consolidation or as revision at a later stage. There is also a short weekly homework task to be completed between the lead lesson and the follow-up session.

The units of work cover carefully selected teaching objectives in number taken from the Year 4, and sometimes the Year 3, teaching programmes. It is essential that children meet these objectives if they are to tackle with confidence the key objectives of the Year 5 and 6 teaching programmes, and obtain a level 4 in the Key Stage 2 national tests. Each unit has a detailed lesson plan for both the lead lesson and the follow-up session with a teaching assistant. Teaching objectives, vocabulary and resources are listed as well as teaching points and key questions. Each lesson and follow-up session follows the three-part lesson model developed by the National Numeracy Strategy.

TEACHING TIME

The materials are designed with an assumption that the lead lesson of 50 minutes is taught by a teacher, probably the Year 5 class teacher or the SENCO, and the follow-up session of 45 minutes is led by a teaching assistant. The lead lesson and follow-up session are in addition to the daily mathematics lesson for Year 5 in which the identified children should also participate. Each school will decide when the Springboard 5 lesson and follow-up session take place. It may be possible to find temporary slots during the school day for the 10 weeks of the course. Alternatively, you could establish a breakfast or after-school club which meets twice a week. Schools with a long lunch break may be able to hold sessions at this time of day.

USING THE MATERIALS

The materials provide considerable support for each weekly unit of work. You will, however, need to take into account the responses of your children and adjust your teaching according to the progress they make. Individual children are, of course, not necessarily at the same level of attainment in all their mathematical work and will need more help and opportunities for consolidation in some areas than in others. The materials will not do all your preparation for you, but should give you a firm structure for your teaching.

THE VIDEO SEQUENCES

The video sequences show ways in which you might approach Springboard 5 lessons. They show how the material to be taught should be broken down into small steps and demonstrate appropriate lines of questioning. The lessons are based on the same teaching objectives as the lead lessons and the content is very similar. They have been slightly amended, where necessary, to meet the specific needs of the children being filmed.

The National Numeracy Strategy is indebted to colleagues and children who made arrangements for, and took part in, the filming from the Hamilton Oxford Schools Partnership, Birmingham LEA and Highfield Junior and Infant School.

ROLE OF THE TEACHING ASSISTANT

The teaching assistant supporting the Springboard 5 teacher will attend the main lesson each week to observe what has been taught and the mathematical vocabulary introduced. In order to gauge the progress the children are making, s/he will be able to listen to the children's responses to the teacher's questions and help them as they complete their work. Where schools receive funding to support Springboard 5, this should allow not only for the assistant to observe the lesson but also to spend time afterwards discussing the plan for the follow-up session with the teacher, mapping out exactly what is to be done and how to approach it.

Although the plans provided are detailed, the assistant and teacher will need to make adjustments in the light of the children's progress in the lead lesson. It will also be important for the teacher to receive information about the progress made by children in the follow-up session. A good way to do this is for the assistant to make brief entries on the feedback sheet (see page 13) at the end of the session each week so that the vital information is not lost.

TARGET SETTING

To evaluate the programme, it helps to set targets for children and measure how successfully they are met. For example, you could set targets for all the children in the year-group, specifying the proportion you expect to achieve in line with the set of key objectives for Year 5 by the end of the school year. One measure of success could be an assessment of a child's work related to key objectives compared with examples in the QCA document, *Standards in mathematics*, and in the supplements of examples in the *Framework for teaching mathematics from Reception to Year 6*. Another measure could be the results of QCA's optional tests for mathematics for Year 5.

You may also wish to set targets for individuals that give you and your children more immediate information on the progress they are making over shorter periods of time. You can gauge the progress individual children are making by their responses in the oral questioning – which is an important element of the programme – and by their work on the activity sheets. Short-term targets could, for example, be linked to improving knowledge of number facts or to responding more quickly to set tasks. Such targets can help you monitor children's overall progress in mathematics and judge the effectiveness of the programme of support. Your school may well have target-setting procedures already in place for the daily mathematics lesson. These should also be used for Springboard 5.

INVOLVING CHILDREN AND THEIR PARENTS OR CARERS

A key feature of effective teaching is to involve children in improving their performance by discussing with them what they can do and what they need to improve. Pupils are better motivated when they understand what they are to achieve and recognise the progress they are making. A brief discussion with a child on what they have achieved can lead to a new target and a suitable deadline for achieving it. During the discussion, you could stress how the child's work will be different when the target has been achieved and what the child can do to help, in class and independently at school and at home. Marking activity sheets and homework and giving guidance on how to improve, with the opportunity for children to comment, will help to maintain their involvement. Sharing learning objectives, inviting children to assess themselves and to set their own challenges are other strategies you can use.

All teachers recognise the value of identifying and rewarding children's achievement through a congratulatory chat, a short letter to parents, putting work on display or giving stickers, stars or badges. The support and interest of parents and carers can also help motivate children to succeed. Aim to keep them informed about the catch-up programme from the beginning and to discuss with them their child's targets and progress whenever possible. The homework tasks are designed for the child to share with others at home and involve simple activities and games that do not take very long.

MATHEMATICS TEACHING

The lessons and follow-up sessions are based on the three-part structure used in the daily mathematics lesson with which children, teachers and assistants are now familiar. They involve a substantial proportion of direct teaching. Children participate by giving answers, explaining and demonstrating their solutions to the whole group, discussing with a partner before answering, and so on. They have already experienced a variety of teaching strategies, including demonstrating and modelling by the teacher.

The plans for the lesson and follow-up session are based on the teaching strategies outlined in the introduction to the *Framework for teaching mathematics from Reception to Year 6*.

EXIT STRATEGIES

As children complete the 10-week course, you will need to think about

- identifying any further action needed to support the children with their mathematics, particularly in shape and space and measures;
- setting clear targets with each child, with time-scales for review;
- monitoring the children's progress and achievement of their targets through Year 5 and into Year 6;
- planning further brief injections of support at times when children meet new work that they find particularly difficult, as they may lack some of the essential understanding needed to cope.

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FEEDBACK SHEET

Group

Week of programme

Date

Look carefully at the teaching objectives for your follow-up session.

List those children who, you feel, have now reached these objectives.

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List those children who, you feel, are well on the way to reaching these objectives but need further consolidation.

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List any children who, you feel, are still some way from reaching these objectives.

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List particular successes children have had today.

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List particular difficulties children have had today.

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