

Intervention materials

The Mathematics Mastery ‘catch-up’ programme materials include:

- Teachers’ guide
- ‘catch-up’ programme materials

There are ten components in the Mathematics Mastery ‘catch-up’ programme:

- Counting procedures
- Counting principles
- Reading and writing numbers
- Place value
- Ordinal numbers
- Word problem solving
- Making connections (Concrete—pictorial—abstract)
- Derived fact strategies
- Estimation
- Number bonds

It is not expected that pupils who find that there are barriers to learning a mathematical concept will need to complete all of the components in the programme. Teachers should select the component/s that will support pupils to overcome their barriers to learning, considering them as separate interventions rather than a progression of interventions.

When will the sessions take place?

The Mathematics Mastery ‘catch-up’ programme is most effective when intervention sessions take place daily outside the maths lesson for around 10 minutes.

The activities can be led by teachers or teaching assistants with either individual pupils or small groups of pupils. Planning and feedback must be shared either orally or written to ensure all adults are up to date with pupils’ progress including any areas for further development and consolidation.

How should I use the materials?

The following pages in this document provide further information about the content and layout of the ‘catch-up’ programme materials to support adults with accessing and using the materials.

Teacher guide

Each teacher guide includes:

Counting procedures

The 'Counting Procedures' keep up programme deals with developing the key skills and concepts in pupils to enable them to be able to count a given number of objects reliably. The activities planned help pupils to develop an understanding of number which is essential for other aspects of Mathematics.

What are the main problems in counting procedures?
 Short term memory
 Limited knowledge of the number names
 Being able to recite numbers in order but a lack of understanding about what numbers mean
 Missing out numbers when counting on or back
 Coordination for one-to-one correspondence
 Mismatching number names to objects when counting
 Not recognising that the final number of a count is the quantity of a set
 Not understanding that objects can be counted in any order

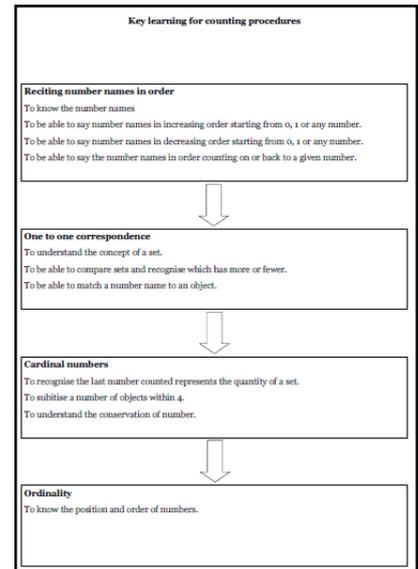
Overview of the Mathematics Mastery 'Keep up programme' materials
 The activities planned in the 'Counting Procedures' keep up programme focus on the following:

- **Reciting number names in order**
 Learning number names and reciting them in sequence counting from 0 and from one.
 Reciting number names in sequence when counting on or back from any number
- **One to one correspondence**
 Developing an understanding about sets.
 Learning to match a number name to an object when counting.
- **Cardinal numbers**
 Recognising that the final number in a count is the quantity of a set.
 Understanding the conservation of number.
 Recognising that a number can represent a whole and not just a position in a sequence.
- **Ordinality**
 Understanding the order and position of numbers for counting.
 Knowing the number that comes before and after a number.

Information about the targeted intervention including:

- problems pupils may experience that cause barriers to learning
- an overview of the 'catch-up' programme for the targeted intervention
- generic suggestions for supporting pupils experiencing difficulties with grasping mathematical concepts
- task ideas for developing pupils' working memory.

A flow chart to illustrate the progression of learning for the targeted intervention.



Counting procedures: one to one correspondence

<p>Focus for intervention: One to one correspondence</p> <p>Maths overview: This section focuses on enabling pupils to match one counting word/ number name, and only one, to one object consistently.</p> <p>Focus</p> <ul style="list-style-type: none"> • Undirected sorting and comparing objects • Forming sets • Comparing sets which do not have the same number of objects • Matching sets which do have the same number of objects • Matching objects with number names <p>Vocabulary: Set, same, different, more, fewer, many, few, not enough, how many more, match, pair, number names 0-10</p> <p>Resources: Sorting hoops</p>	<p>Focus 1: Undirected sorting and comparing objects</p> <hr/> <p>Focus 2: Forming sets</p> <hr/> <p>Focus 3: Comparing sets which do not have the same number of objects</p> <hr/> <p>Focus 4: Matching sets which do have the same number of objects</p> <hr/> <p>Focus 5: Matching objects with number names</p>
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A planning and feedback sheet for adults to use to record progress and share information between the class teacher and the teaching assistant.

These pages include:

- the focus for the intervention,
- an overview of the focus,
- key learning for the focus,
- vocabulary
- suggested resources required

Intervention task plans

Each task plan includes:

A detailed guide for one task.

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Counting Procedures: Reciting number names in order
To know the number names 0–10

<p>About the maths</p> <p>Many children are familiar with some number names. It is important that pupils are familiar with all numbers and the correct pronunciation of number names.</p>	<p>Vocabulary</p> <p>Number names for 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 say</p>	<p>Resources</p> <p>Number songs, rhymes and chants involving numbers within 10. Puppet, number track.</p>																						
<p>Getting started</p> <p>Teacher and children say the number names from zero to 10 in order together. The teacher says each number individually and pupils copy the pronunciation. The teacher and pupils will exaggerate each sound and the movement of the mouth when pronouncing each number.</p> <p> Assess pupils' pronunciation and focus practising numbers where pupils have more difficulty with pronunciation.</p>	<p>Task for pupils</p> <p>Display a number track.</p> <table border="1" data-bbox="517 719 794 741"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>Teacher and pupils say a song or chant that involves reciting number names within ten in order. When the number names are said, the teacher points to them on the number track.</p> <p>Include an actions for numbers that pupils have found problematic. E.g. stand up for three, clap for eight.</p> <p>Suggested chant/ song (to the tune of ten little number): <i>Zero, one and two are numbers Three, four, five and six are numbers Seven, eight and nine are numbers Ten is a number!</i></p>	0	1	2	3	4	5	6	7	8	9	10	<p>Deepening understanding</p> <p>Introduce a puppet or character. Teacher explains that the puppet is learning English and wants to know the number names. Pupils teach the puppet the number names on the number track.</p> <table border="1" data-bbox="845 831 1123 853"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> </table> <p>At times, the teacher will make sure the puppet makes mistakes and pupils have to correct the puppet. Mistakes could include missing initial or final sounds. Saying 'ero' instead of 'zero'. Saying 'ay' instead of 'eight'.</p> <p> Incorporate errors observed in the session and in previous lessons.</p>	0	1	2	3	4	5	6	7	8	9	10
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A bank of task ideas that focus on the key area of learning

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Counting Procedures: Reciting number names in order
To know the number names 0–10

<p>Resources</p> <p>Lyrics for number songs and rhymes Props for songs and rhymes</p>	<p>Resources</p> <p>Skipping ropes</p>	<p>Resources</p>
<p>Number songs and rhymes</p> <p>Teach children different number songs and rhymes: Examples for numbers one to ten One—One finger, one thumb keep moving. Two—Two little dicky birds. Three—Baa baa black sheep. Four—Four little monkeys. Five— Five little dicks went swimming one day. Six—Six little speckled frogs. Seven—Seven currant buns in a baker's shop. Eight—One, two, three, four. Mary at the cottage door. Nine—Nine green bottles. Ten—One, two, three, four, five. Once I caught a fish alive.</p>	<p>Skipping rhyme</p> <p>Pupils will work in pairs. One pupil will say the rhyme while the other pupil skips. When the pupils starts saying the number names, the pupils skipping must try to jump the rope as quickly as he/ she can. "Cliperty, Claperty clop, Can you keep skipping until I stop? One, two, three, four, five, six, seven, eight, nine, ten!"</p> <p> Remember that the focus of the task is to explore using number names within ten.</p>	<p>Activity heading (for older children)</p>

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How to use the planning guides

Each intervention plan should take place for 10-15 minutes. They should be pacy and interactive. Each task plan is presented like this:

Focus for learning and the specific learning for the task.

Vocabulary
This is the list of words adults and pupils are expected to understand and use accurately.

Resources
This is a list of recommended resources for the suggested tasks.

About the maths
In this section you will find information about the importance of the concept pupils are learning, ways in which pupils can develop their understanding, or misconceptions that pupils may have when learning this concept.

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Counting Procedures: Reciting number names in order
To know the number names 0–10

<p>About the maths</p> <p>Many children are familiar with some number names. It is important that pupils are familiar with all numbers and the correct pronunciation of number names.</p>	<p>Vocabulary</p> <p>Number names for 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 say</p>	<p>Resources</p> <p>Number songs, rhymes and chants involving numbers within 10. Puppet, number track.</p>																						
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Getting started
This is a short adult-led activity that introduces pupils to the key learning.
This should only last for 2-3 minutes.

Task for pupils
This task allows pupils to explore the key learning and demonstrate their understanding. The task should be completed more independently by pupils and adult intervention should be minimal.
This should last for 4-6 minutes.

Deepening understanding
This part of the intervention session allows pupils to progress in their learning and explore the concept in greater depth.
This part of the session should last for 2-3 minutes.

How to use the bank of task ideas

Intervention tasks should be planned taking into consideration the individual pupils' needs.

Additional task ideas are provided to support adults with planning alternative tasks for pupils who do not grasp the concepts through the main task planned.

Each task plan is presented like this:

Focus for learning and the specific learning for the task.

Resources
A list of suggested resources required for the task.

Suggested task
A heading and an overview of an alternative task.

Mathematics Mastery

Counting Procedures: Reciting number names in order

To know the number names 0–10

<p>Resources</p> <p>Lyrics for number songs and rhymes</p> <p>Props for songs and rhymes</p>	<p>Resources</p> <p>Skipping ropes</p>	<p>Resources</p>
<p>Number songs and rhymes</p> <p>Teach children different number songs and rhymes:</p> <p>Examples for numbers one to ten</p> <p>One—One finger, one thumb keep moving.</p> <p>Two—Two little dicky birds.</p> <p>Three—Baa baa black sheep.</p> <p>Four—Four little monkeys.</p> <p>Five—Five little dicks went swimming one day.</p> <p>Six—Six little speckled frogs.</p> <p>Seven—Seven currant buns in a baker's shop.</p> <p>Eight—One, two, three, four. Mary at the cottage door.</p> <p>Nine—Nine green bottles.</p> <p>Ten—One, two, three, four, five. Once I caught a fish alive.</p>	<p>Skipping rhyme</p> <p>Pupils will work in pairs.</p> <p>One pupil will say the rhyme while the other pupil skips.</p> <p>When the pupils starts saying the number names, the pupils skipping must try to jump the rope as quickly as he/ she can.</p> <p>"Cliperty, Claperty clop,</p> <p>Can you keep skipping until I stop?</p> <p>One, two, three, four, five, six, seven, eight, nine, ten!"</p> <p> Remember that the focus of the task is to explore using number names within ten.</p>	<p>Activity heading (for older children)</p>

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The alternative tasks planned are designed to cater for different needs and interests.

For example, there are suggested tasks for taking the learning outdoors or in a larger learning area such as a hall and the abacus has been recommended to enable pupils to approach learning using a different resource.

There are also several tasks that have been planned and recommended by our partner schools who have been involved with the development of the materials.