

# MEP

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Mathematics Enhancement  
Programme Primary Extension

**YEAR R**

Lesson Plans 1a

Mathematics Enhancement Programme  
**Primary Demonstration Project**  
**Reception Year**

## Introduction

This Reception Year mathematics programme provides detailed lesson plans along with OHP transparencies and copy master material for reception year teachers. These pictures and worksheet figures are from the Reception book printed for the Centre for Innovation in Mathematics Teaching

Hajdu, S. Dr. - Scherlein, M.: Mathematics R - Reception class,  
Műszaki Publishing House, Budapest, 1998

This book is the English version of the Hungarian original which was produced for kindergartens in Hungary.

Hungarian 5+ year-old children must attend a school preparatory year in kindergarten where they usually have two mathematics 'lessons' per week, each of 25 - 30 minutes. The use of several sheets from this material with UK children at least one year younger in reception classes needs sensitive attention and methods.

### ***Teaching philosophy***

1. Learning via playing. In optimal cases, children will wish to participate in the games, plenary tasks and discussions, in recitation and singing; they will enjoy acting in front of the class (perhaps role-playing), will be happy to work at the black or white board, screen or poster, will like taking part in physical games, and enjoy playing with toys and other materials both in groups and individually and will be keen to draw and paint. Be patient and do not force a child to participate if he/she does not wish to take part in an activity. Aim to involve each of them in some way. (Translation of the Hungarian name of these kindergarten lessons is 'initiatives'.)
2. We should avoid any articulated requirement in mathematical knowledge, although we have clear aims behind our methods. But, gradually, require good behaviour, attention, concentration, activity, collaboration and communication. The course is very structured on the teacher's side, but the children need not see that; they should feel free and have fun in a familiar atmosphere. The teacher should look for prompt but simple feedback (correct and exact), while for special or outstanding attempts (except counting up to  $n > 10$  and reading or writing digits) and manual or art productions use greater praise (well done, good boy/girl, brilliant, fantastic) or a prize.
3. Interactive whole class sessions and group, paired or individual work and play occur in each lesson. With an assistant, group work in turn is useful. For example, place 1: free choice (but mathematical) playing (construction, building,

marble lacing), place 2: free colouring or drawing, place 3: individual work on sheet, place 4: interactive work, instructed by the teacher.

4. Mathematical content: orientation, compasses, various relations, mental counting up to 10 (even if many can count higher), number sense, decomposing numbers, preparation for operations, 2D, 3D shapes, parts, symmetry, reflection, sequences, patterns.
5. No reading and writing of digits (even if children have learned some at home or from friends). Finger joints are not ready yet for writing. Fine motor practice e.g. rolling ribbon and paper tape, 'playing the piano'. There are several worksheets with letter and digit elements for drawing over. With these, children are prepared gradually for writing in Year 1. These sheets should be enlarged for children aged 4+.
6. Logical or systematic thinking and abstraction are not expected at this age. This course is for you to determine, while they work/play, what your pupils can and cannot do. You are also a researcher who should patiently observe their activities, measure the development of their abilities and discover the personal or general obstacles to their learning. But we have to be responsible for them, so stop any activity the children are not enjoying. Be patient, you have a lot of time to reach your goals.

### ***On the lesson plans***

These lesson plans are suggestions. It is recommended that you follow them in one, or, preferably in two, consecutive years. Then, after understanding the principle and structure, you will have enough experience for modifications or for your own innovations. You may do 2 'lessons' per week or do them in weekly blocks (5 lessons) in every second week.

### ***What to do in other lessons?***

What you used to do before. A lot of playing, constructions, drawing, colouring, painting and games. Work with items such as pebbles, acorns, shells, leaves, etc. Collected or hand made worksheets are useful with the most popular type of tasks. Role play, situation play (e.g. shopping at market or in shop), motional activities, e.g. turning toward compass points, counting own ears, eyes, fingers; ordering children in lines as patterns or ordering from taller to shorter, etc.

<b>R</b>	<p>R:  <b>C: Meet the family. Counting up to five</b>  E:</p>	<i>Lesson Plan 1</i>
<p><b>Activity 1</b></p> <p style="text-align: right;"><i>10 min</i></p>	<p><b>Free choice play</b>  Various tools, items and kits are placed on shelves or on floor carpet. E.g. Wooden building blocks and shapes; construction kits (e.g. Lego, train); plane shape models (carton or plastic); large item puzzles; dice; dominoes; pebbles, acorns, shells; various colours, (larger) size and shape beads for stringing, etc.  Pupils choose activities freely. They might play alone or in pairs /groups.</p>	<p style="text-align: center;"><b>Notes</b></p> <p>E.g. pupils may be asked for nice patterns. Praising, extra for creative patterns.  Observe pupils' choice, activities and products. Help their finger and hand fine motor movement (as preparation for writing).</p> <p>Pupils should have played a lot with these games before this course, since September.</p>
<p style="text-align: center;"><b>2</b></p> <p style="text-align: right;"><i>20 min</i></p>	<p><b>Meet the Family</b> (<a href="#">R, page 5, picture 1</a>)  T: Look at the picture. Let's count the members of this family.  Pupil A, come to the picture and count them.  A: One, two, three, four, five. (Or: One, two, three, four.)</p> <p>T: Now let's count, including the dog this time. And let's count them together. Start ... now! (T points to the figures on the poster.)  Now, let's count them backwards, from Mum. ...Now!  T: The boy is Ben. What colour are his shorts? (green)  The girl is Ann. What colour is her dress? (pink)  Who is standing beside Ben? (Mum and Ann)  Who is standing beside Ann? (Dad and Ben)  How many children are in this family? (Two children)  How many adults are in this family? (Two adults)  How many boys are in this family? (One boy, Ben)  How many girls are in this family? (One girl, Ann)  Who is the youngest? (Ben)  Who holds the teddy bear? (Ann)  What is in Ben's hand? (Steam engine / train)  Beside who is Buster the dog sitting? (Dad)  Who is holding Ben's other hand? (Mum)</p>	<p><b><u>POSTER 1</u></b>  Whole class activity.  The poster is displayed or projected on the wall / screen.  Pupils take it in turns to answer. One may start with the dog (answering 5) and other may start with Dad (answering 4).  Check who is competent and who is hesitant.</p> <p>Variation:  Ask one pupil at a time, choose a volunteer child or ask the whole class together.  Ask for whole sentence answers.</p>

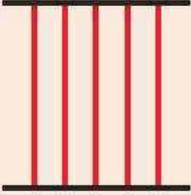
<p>3</p> <p>30 min</p>	<p><b>Even Ben can count!</b> (<a href="#">R, page 5, picture 1, down</a>) How many fingers is Ben holding up each time? Let's show and shout it. ...Now!</p> <p>Draw the same number of sticks.</p>	<p><b><u>POSTER 1</u></b> Whole class first. T also shows and says it with the class, in unison. Individual work. Each pupil has a copy and a red pencil. Monitor and help their drawing. Praising.</p>
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<b>R</b>	R: The family <b>C: Counting up to five</b> E: Comparisons: longer, shorter, taller, smaller, wider	<i>Lesson Plan</i> 2
<b>Activity 1</b>  <i>10 min</i>	<b>Introduce your family</b> T: Make a drawing of your family. Introduce your family. How many adults are in your family? How many children are in your family? What do the adults do? What do the children do? How many sisters and brothers do you have? Who is the youngest? Where do you live? How old are you?	<b>Notes</b>  Individual work on blank sheets. Monitored by T. Ask some pupils while you walk around, then ask some in front of the class. Praising.  Ask as many as you can within the 10 minutes.
<b>2</b>	<b>Ben's toys</b> ( <a href="#">R, page 6, picture 1</a> ) T: Let's look at the family picture. Name the members. (Buster the dog, Daddy, Ann, Ben and Mummy)  T: Now let's look at the next picture. What kind of toys does Ben have? (boats, cars, buckets, balls and building blocks) Find this picture on your sheet. Count the boats. Show me their number with your fingers ...now! How many boats does Ben have? Answer B. B: Ben has four boats. T: Who agrees? Who disagrees?  Count the cars. Knock the number on your desk ...now! How many toy cars does Ben have? Answer C. C: Ben has four cars.  Count the buckets. Clap the number ...now! How many buckets does Ben have? Answer D. D: Ben has two buckets.  Count the balls. Show the number with fingers...now! How many balls does Ben have? Answer E. E: Ben has five balls.  Count the toy castles. Show the number with fingers...now! How many toy castles does Ben have? Answer F. F: Ben has three toy castles.  How many boats are there? (Four) Colour in the sails of two boats.  How many of the sails are still white, G? (Two)	Whole class activity. The pictures are displayed or projected on the wall / screen.  Check who is competent and who is hesitant. Ask for whole sentence answers. Feedback. Praising.  (Knock with them). Observe.  Agreement, feedback, praising (Clap with them). Observe.  Agreement, feedback, praising  Observe the class.  Agreement, feedback, praising  Observe the class.  Agreement, feedback, praising  Whole class answer. Individual work. Monitored (helped). Agreement, feedback, praising

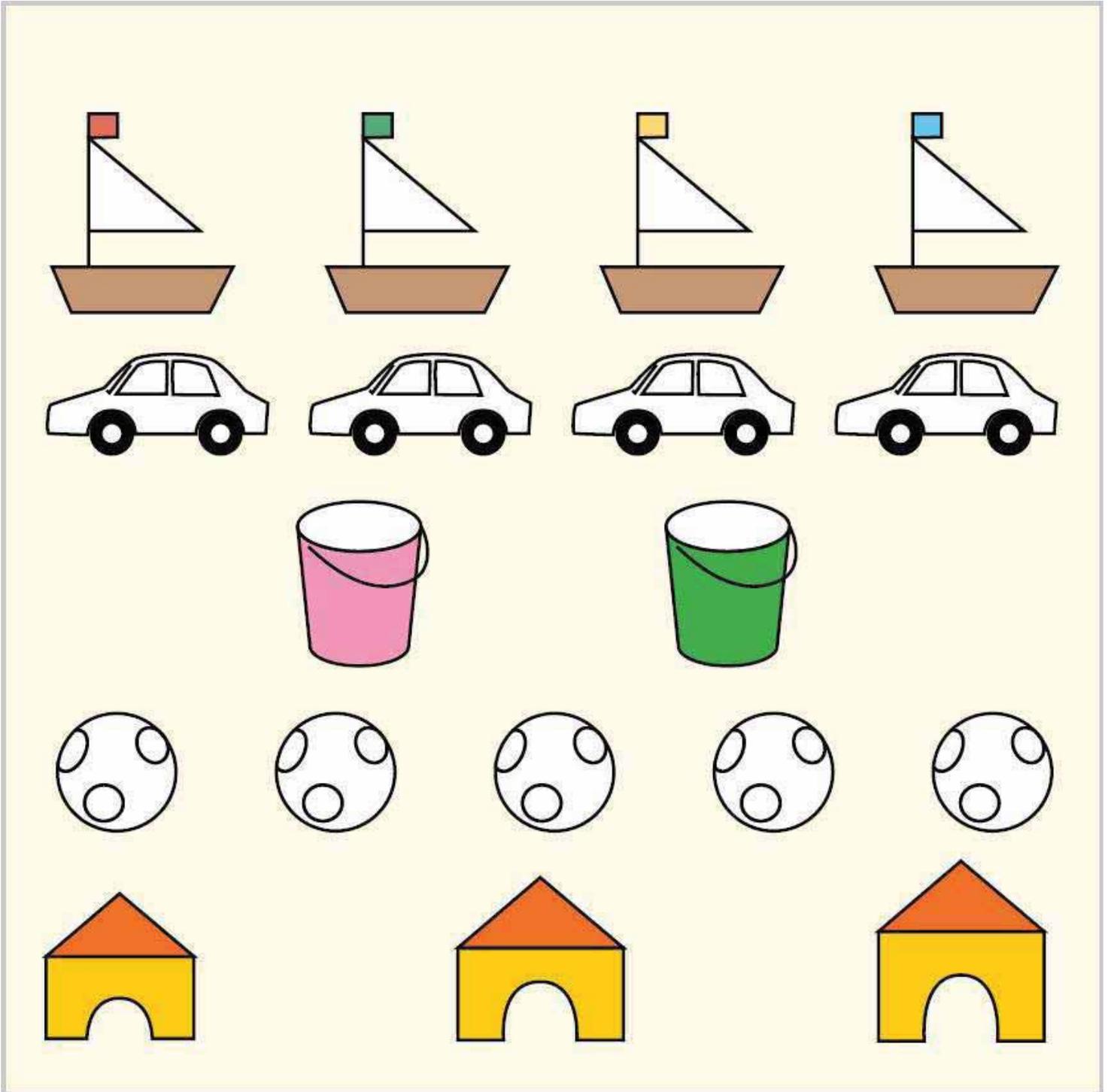
25 min	<p>How many cars are there? (Four) Colour three cars in red. How many cars did you not colour in, H? (Two)</p> <p>How many buckets are there? (Two) Draw a spade in one of the buckets. In how many buckets did you not draw a spade, J? (One)</p> <p>How many balls are there? (Five) Colour four balls in green. How many balls did you not colour in, K? (One)</p> <p>How many toy castles are there? (Three) Draw a flag on top of two of the castles. In how many castles did you not draw a flag, L? (One)</p>	<p>Whole class answer. Individually. Monitored (help) Agreement, feedback, praising</p> <p>Whole class answer. Individually. Monitored (help) Agreement, feedback, praising</p> <p>Whole class answer Individually. Monitored (help) Agreement, feedback, praising</p> <p>Whole class answer Individually. Monitored (help) Agreement, feedback, praising</p>
30 min	<p><b>3</b> <b>Colouring</b> (<a href="#">R, page 6, picture 2</a>) T: What can you see on the next picture? (Two trains, houses and rockets) Find this sheet on your desk. Colour in the longer train.</p> <p>Pupil A, come to the picture and show me the longer train.</p> <p>Colour the wider house. Colour the taller rocket.</p>	<p>The picture is displayed / projected on wall. Whole class</p> <p>Individual work. Each pupil has a copy. Monitor and help their drawing. Discussion about the large picture. Agreement, feedback, praising.</p> <p>Repeat the discussion.</p>

Lesson Plan 1 Activity 2 & 3



				
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Lesson Plan 2 Activity 2



Lesson Plan 2 Activity 3

