

Early Literacy and Numeracy activities

FOREWORD

This manual accompanies a resource pack provided to you by the 'Quality Early Education in Community Schools' (QEECS) project. It was developed by primary student teachers from Belgium who did their internship in four community schools in Ndola: Paraclete, Kaloko Kantanshi, Little Angels and Munonko Community Schools.

Our gratitude goes to the students Paulien Houdart, Saskia Kennes, Meghanne Roose and Sylvie Senesael. We also thank the teachers of the four schools who helped with testing out the materials in their classes.

The resource pack is aimed at encouraging learning through play in the early years of primary school. The pack contains materials that can be used in early literacy and numeracy activities in grade 1 and 2. We encourage you to use these examples. They have been laminated to make them stronger. You will need to cut out some of the samples to make them ready for use.

The manual explains how the different activities can be done with children. There is also an explanation of how you can make more materials.

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EARLY LITERACY ACTIVITIES

These activities can be used to stimulate literacy in the early years of primary. Most of the examples are suitable for term 1 of grade 1. The content should be adapted to the children's level and what they are learning at the time you use the activity.

Some of these games can be adapted to use for numeracy activities as well. You can replace letters and words with counting dots, numbers, sums.

1. BINGO

* MATERIALS:

- ♥ a sheet of A4 paper
- ♥ a pencil / black marker
- ♥ a ruler
- ♥ scissors
- ♥ stones, leaves, blocks

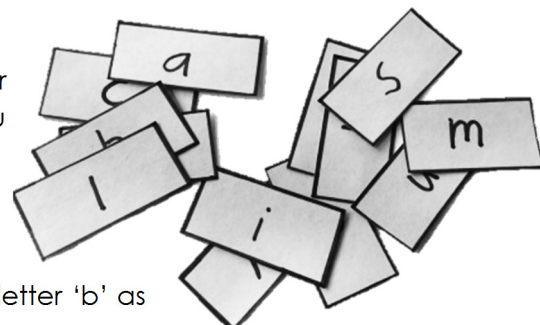


* WHAT IT IS:

This is a game that helps children with reading letters. Each child receives a bingo card (a larger card). There are small cards with letters that match the letters on the bingo card. These are read out loud. Every time a child has a match on their card, they cover the letter up (for example with a small stone). The goal of the game is to be the first to have all the letters covered.

* HOW TO MAKE IT:

- Step 1 Take a sheet of paper and draw a rectangle of 9 cm x 6 cm on it.
- Step 2 Divide the length of the rectangle in two and the width in three. You will now have 6 smaller squares of each 3 cm x 3 cm.
- Step 3 Write a letter that the children have already learnt in each square (see picture above). **Make sure you use the letter only once on each bingo card.**
- Step 4 Repeat steps 1 to 3 to make more bingo cards. **Some letters can be the same, others have to be different. No two bingo cards can be identical!**
- Step 5 Make the smaller letter cards. Take another sheet of paper and make small cards with letters. Every letter that you wrote on a bingo card should have a separate letter card.



For example: if you wrote 'b' on a couple of squares in the bingo card, you need to have a little card with the letter 'b' as well.

- Step 6 Cut out the small letter cards and put them on a pile or in a box or bag.

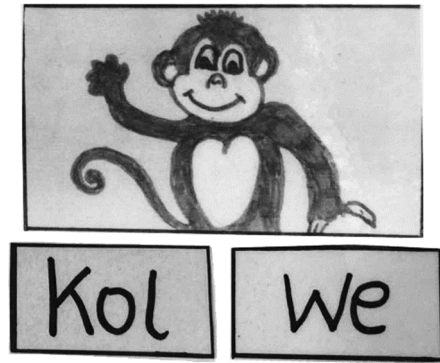
* HOW TO USE IT:

1. This game is ideally played with a small group of children. It can also be played with the whole class. In both cases, each child should have their own bingo card.
2. Give each player a bingo card. Nine bingo cards have been provided in your resource pack.
3. The teacher takes a small letter card out of the pile of small cards and asks one child to read this letter out loud.
4. When children have that same letter on their bingo card, they can cover that letter with a stone (or a bottle top, leaf...).
5. This is repeated until one child's bingo card is completely covered. When this is the case, the child should shout 'BINGO!'. He/she is the winner of the game. It is possible that there is more than one winner.

2. WORD PUZZLES

* MATERIALS:

- ♥ a sheet of paper
- ♥ a pencil / black marker
- ♥ (coloured pencils) or crayons
- ♥ a ruler
- ♥ scissors



* WHAT IT IS:

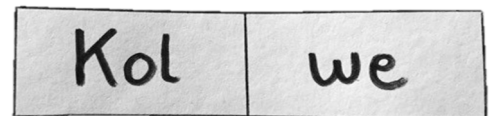
This is a game that requires children to make words by putting syllables together. There are drawings of the words which help the children to make the words.

The game can be played individually or in group. The game can also be played as an introduction to a literacy lesson or to learn new letters or sounds.

This game builds the pre-writing and reading skills. The children also practise their fine motor skills making the puzzles.

* HOW TO MAKE IT:

- Step 1 Draw images of objects, animals, people that the children have already learned about in literacy or in other subjects. The children should know the letters of the words that describe each image, as they will have to put the word together using separate cards. You can find examples in your resource pack. For example: kapu, jamu, kolwe, ...
- Step 2 Now write down the words that match the images on separate cards. Leave enough space between the syllables so you can cut up the words more easily.
- Step 3 Cut the word representing the image in two (or more) syllables. For example: ka + pu / ja + mu / kol + we
- Step 4 Your puzzles will last much longer if you cover them with see-through tape.



* HOW TO USE IT:

1. This activity can be done when children are waiting after they are finished writing in their books. If you make a lot of puzzles, you can integrate them in your literacy lessons. The puzzles are also a great way to introduce a new letter or new sounds.
2. Spread all the puzzle pieces (images as well as syllable cards) on the table.
3. Let the children search the correct syllables to make the word representing that image.
4. They put together the image, with the correct syllables underneath.

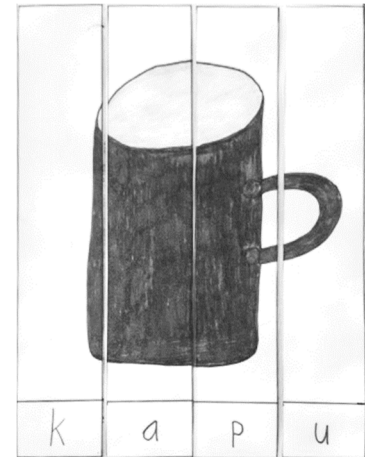
3. LETTER PUZZLES

* MATERIALS:

- ♥ a sheet of A4 paper
- ♥ a pencil / black marker
- ♥ (coloured pencils) or crayons
- ♥ a ruler
- ♥ scissors

* WHAT IT IS:

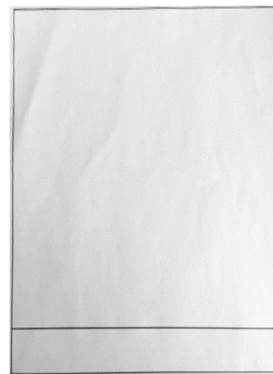
This is an individual game that helps children to make words by putting letter strips together. When the puzzle is made correctly, the image matching the word is shown.



This game builds early writing and reading skills. The children also practise their fine motor skills making the puzzle.

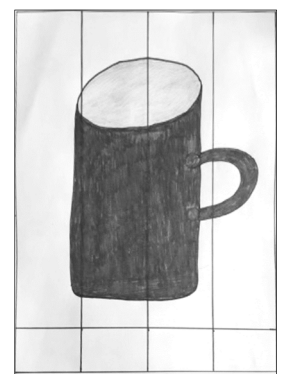
* HOW TO MAKE IT:

Step 1 Take a sheet of paper, place it vertically in front of you and divide it into two pieces, like shown in picture 1. The bottom piece should be about 3 centimetres high.



Picture 1

Step 2 In the large upper rectangle you draw an image of something that the children know. The children have to know all the letters of the word, as they will have to put the letters of the word in the right order. For example: kapu, icibi, itaba, etc.



Picture 2

Make sure that the image is big enough, as the children have to make the puzzle. The image should fill most of the upper box.

Step 3 When your drawing is finished, divide the sheet in vertical strips. The number of strips should match the number of letters that are in that word.

For example: 'kapu' has 4 letters → the image will be divided into 4 vertical strips (see picture 2).

Step 4 Now write the word underneath the drawing, with one letter in each box.

Step 5 Cut the puzzle into vertical strips.

Your puzzles will last much longer if you protect them with see-through tape.

* HOW TO USE IT:

1. This activity can be done when children have to wait when they are finished writing in their books. If you make a lot of puzzles, you can even integrate them in your literacy lessons. The puzzles are also a great way to introduce a new letter.
2. Let the children make the puzzle. This activity can be done individually or by two children.
3. The children have to put the letters in the right order. If they get it right, the image matching the word is shown.

4. MEMORY GAME

* MATERIALS:

- ♥ paper or cardboard
- ♥ Something to write with
- ♥ ruler
- ♥ scissors

Maama



* WHAT IT IS:

A memory game is a card game that consists of matching pairs of cards. The children must find the right combination of two cards out of twenty or more cards that are all placed on the table with the picture facing down. Memorizing which card is where, can help the children to find the right combination faster.

A matching pair of cards can be:

- ♥ the same drawing or word on both cards. In this case, the aim is to find two cards that are exactly the same.
- ♥ a drawing on one and a word on the other card (see example in the resource pack)
- ♥ Capital letters and the small letters. The aim is to find matching letters.
- ♥ This game can also be used in mathematics, for example using cards with numbers and matching number of dots or images.

* HOW TO MAKE IT:

- Step 1 Take a sheet of paper or cardboard. Using a ruler and pen or pencil, divide it into pieces of exactly **the same size** (for example: 5 cm x 8 cm).
- Step 2 Draw an image on one piece of paper, and draw a matching image or word on another piece. If you use words, use words that the children know and words with the letters they've already learned. For example: if they have learned the 'n' and the 'k', you can use the word 'inkoko', because they know all the letters and they can read the word. On the card matching this card, you draw a rooster. To play the game well, you need to make between 10 and 20 sets of matching images.
- Step 3 When you've finished making the game, cut the pieces out and make sure all the cards are the same size. You can cover the cards with see-through tape to make them stronger.

* HOW TO USE IT:

1. Play the game with the children. Place all the cards on the table or floor with the pictures, words or letters facing down, so that the children can't see the image or word on the cards.
2. Ask the first player to turn one card over. Ask the child to say what is on the image or to read the word. Ask the same child to turn another card over. Again, the child says what is on the image or reads the word.
3. Are the two cards matching? If so, the child can take both cards. If they are not matching, the child turns over the cards to face down again. The cards are put in the same place where they were earlier, to help the children memorise where the cards are.
4. When the first child has turned over two cards, it's the next player's turn. It's important that the children try to remember where all the cards are.
5. When all the cards are gone, the children count how many points they have. Every matching set of cards counts for one point. The child with the most points, wins the game.

5. MINILOCO

* MATERIALS:

- ♥ paper or cardboard
- ♥ Something to write with
- ♥ ruler
- ♥ scissors



* WHAT IT IS:

This game helps children learn capital and small letters. A larger card has different capital letters written on it. Smaller cards have the matching small letters written on them. The children match the capital letters with the small letters by putting the small letter card on top of the correct capital letter. An example of the game is included with your resource pack.

* HOW TO MAKE IT:

- Step 1 Take a sheet of paper or cardboard. Divide it into squares of the same size, like in the picture above.
- Step 2 Write one capital letter in each of the squares. Make sure these are letters the children have already learnt. Your large card is ready for use.
- Step 3 On another piece of paper, draw more squares of the same size. In each square, you write a small letter, matching the capitals you have already written.
- Step 4 Once you have written all the small letters, you cut them out into separate cards.

Tip: The same game can also be made to help develop numeracy skills. For example, you can make a large card with numbers written on it, and small cards that have matching number of dots on them.

* HOW TO USE IT IN CLASS:

1. Give a large card (with capitals) and a set of small cards (with small letters) to the child that is playing.
2. The child reads the first capital letter and searches for the card with the matching small letter.
3. The child has finished when the card is full. Another child or the teacher can check whether all the answers are correct.

6. PEG CARDS
























* MATERIALS:

- ♥ a sheet of A4 paper
- ♥ a pencil / black marker
- ♥ coloured pencils or crayons
- ♥ a ruler
- ♥ 6 coloured pegs

* WHAT IT IS:

Examples of peg cards for **both literacy and numeracy** are included in the resource pack. A set of coloured pegs is also provided.

This is an individual game that requires children to make logical associations. The game consists of a sheet with problems to solve. The child needs to think of the answer, making the association between the problem and the colour code. With coloured pegs, the child indicates the correct solution on the right-hand side of the sheet. When the child flips the sheet over, he/she can check whether they got the answer right.

	  	8
	   	3
	  	1
	 	5
		2
	   	4

This game builds logical and problem – solving skills. Depending on the peg card, the children can be practising literacy, colours, counting, spatial awareness, size, shapes etc.

* HOW TO MAKE IT:







Step 1 Take a sheet of A4 paper and place it vertically in front of you.

Step 2 Divide the sheet in 6 horizontal strips of the same height. (about 5 cm each).

Step 3 Draw a square of 2 cm x 2 cm on the left-hand side of each strip (see picture). Each square gets a different colour, matching the colours of your pegs.

If you do not have coloured pegs, you can colour plain pegs, or stick a small piece of coloured paper to the top of the pegs.

Step 4 Draw a vertical line on the right of the sheet (see picture). On the left of this line you will provide six similar problems to solve. On the right, you will provide the answers, but jumbled up.

There are many possible problems for the children to solve.

You can make peg cards where children should match, count, work with size or shapes, complete a puzzle, etc.

For example: draw 3 apples in one of the strips on the left. Then write the number 3 in one of the squares on the right.

Step 5 Complete each strip by drawing a problem and complete the answering column with each answer to the different problems. **But make sure to jumble up the answers.**

- Step 6 The child working with the card, needs to be able to flip over the card to check whether they have solved the problem correctly. To make the solution sheet, you take another sheet of paper to draw out the answer to the problem. For this you need to use the same colour code. When children turn the sheet to see the solution, the pegs should match the colour code – so make sure you put the colour code in the right places.
- Step 7 You should now stick the problem and the solution sheets back-to-back. You can glue them on a piece of thin cardboard to make your card stronger. You can also protect your sheets by covering them with see-through tape.

* HOW TO USE IT:

This activity can be done when children have to wait when they have finished writing in their books. They can play individually. Make sure you have enough peg cards and coloured pegs for every child that is playing.

1. The player needs to think of the answer, making the association between the problem and the colour code.
2. With the coloured pegs, the child indicates the correct solution on the right-hand side of the sheet.
3. When the child flips the sheet over, he/she can check whether they got the answer right.

→ Example to use in literacy classes:

➤ Game 1:

In the first column, you can write the beginning of a word with the letters the children have already learned, e.g. **'ita'**. Next to this (still in the first column) you draw an image of **'itaba'**. In the right column, you write the missing piece of the word (**ba**). Remember to jumble up the answers. The children should make a combination of the beginning of the word (ita) and the end of the word (ba). The child puts the right coloured peg on the answer.







→ Examples to use in numeracy classes:

➤ Game 2:

Instead of drawing objects, you can write a series of numbers in each box of the first column, and erase one of the numbers in the line. The child should find the missing number and put the right coloured peg on the answer.

➤ Game 3:





You can also write addition or subtraction exercises in the first column. The child has to find the correct answer in the right column.

	4 . 6	9
	6 . 8	5
	1 . 3	4
	5 . 7	2
	8 . 10	6
	3 . 5	7

7. LETTER LINE

* MATERIALS:

- ♥ paper
- ♥ a marker or crayons
- ♥ string **or** tape **or** string made of braided plastic bags

m M	k K	i I	t T
			

* WHAT IT IS:

No example of a letter line has been provided in your resource pack, but it is easy to make. It is a very useful teaching and learning aid.

The letter line is a series of cards with the letters that the children have already learned on them. Underneath each letter is a drawing of something that starts with the same letter. For example: if the children have learned the letter 'm', you can draw a mother, because 'mama' is a word in Bemba which starts with the letter 'm'. Make sure the words are in Bemba. For more inspiration, you can look in the syllabus.

You can stick the letter line to the wall in your classroom, with all the letters next to each other. It is a great visual support that will help the children remember the letters.

* HOW TO MAKE IT:

Step 1 Take a sheet of paper. In the upper half, you write a letter the children have learned.

Step 2 In the lower half, you draw a picture of something that starts with that letter.

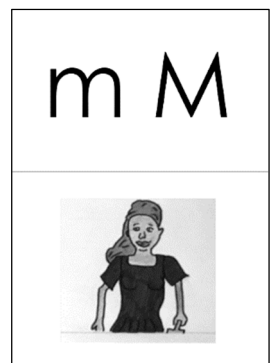
For example: if the children have learned the letter "m", you can draw a mother, because this is "mama" in Bemba. Make sure you use words in Bemba.

Do this for all the letters the children have learned.

Step 3 Hang the cards next to each other. You can stick the cards to the wall, or you can hang them using a string that is tied from one nail to another.

Start with the letters that the children have already learned. When you teach them a new letter, add it to the line.

Explain to the children that they can look at it while writing.



EARLY NUMERACY ACTIVITIES

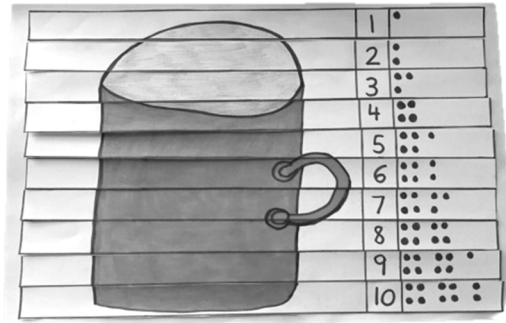
These activities can be used to stimulate numeracy in the early years of primary. Most of the examples are suitable for term 1 of grade 1. The content should be adapted to the children's level and what they are learning at the time you use the activity.

Some of these games can be adapted to use for literacy activities. You can replace numbers and sums with letters and words.

8. COUNTING PUZZLES

* MATERIALS:

- ♥ a sheet of A4 paper
- ♥ a pencil / black marker
- ♥ coloured pencils or crayons
- ♥ a ruler
- ♥ scissors



* WHAT IT IS:

This is an individual game that helps children with counting to ten. The game consists of 10 horizontal strips. The children should put the numbers from one (top) to ten (bottom). If they get it right, an image will become visible on the left-hand side.

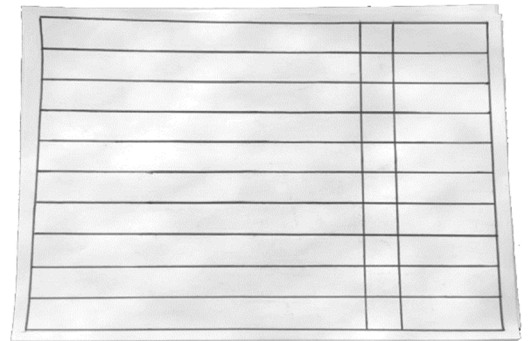
This game builds the numeracy skills of children. The children also practise their fine motor skills by making the puzzle.

* HOW TO MAKE IT:

Step 1 Take a sheet of A4 paper, place it horizontally in front of you. Divide the sheet into ten horizontal strips (about 2 cm high).

Now draw three vertical lines (see picture on the right). The part on the left needs to be biggest, to allow for a picture to be drawn.

Step 2 On the left, draw an image of something that the children know. For example: an elephant, a dog, a cup, a village house,...



Make sure that the image is big enough and that each horizontal strip has a part of the drawing on it, as the children have to puzzle the image back together. You can colour the image with coloured pencils or crayons.

Step 3 In the middle column (the narrowest one) you write the numbers from one to ten.

Step 4 In the third column you draw the dots representing the number. E.g. number 1 is represented by one dot.

Make sure the dots are written as showed on the picture above, as this is a well-known and very effective way to visualise numbers and help children with counting.

Step 5 Cut the puzzle into horizontal strips. You now have ten strips. If you cover the strips with tape, they will last longer.

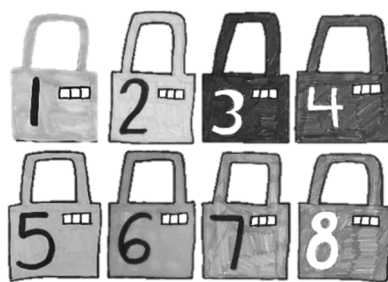
* HOW TO USE IT:

1. This activity can be done when children have to wait when they are finished writing in their books. If you make a lot of puzzles, you can even integrate them in your numeracy lessons.
2. Let the children make the puzzle. This activity can be done individually or by two children together.
3. The children have to put the numbers from one (top) to ten (bottom). If they get it right, they will see an image appear on the left-hand side.

9. UNLOCK IT

* MATERIALS:

- ♥ paper or cardboard
- ♥ a pen, pencil or marker
- ♥ crayons or coloured pencils
- ♥ scissors



* WHAT IT IS:

The game consists of a set of pictures of locks, with a different number written on each lock. There are also drawings of keys, with a maths exercise on every key. The children have to find the solution to the sum on the key. They put the key with the correct lock. If the exercise is ' $3 + 3$ ', then the key goes with the lock with number 6. An example of the game is provided in your resource pack.

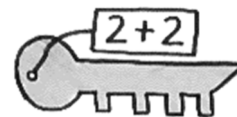
* HOW TO MAKE IT:

Step 1 Take a piece of paper or cardboard. Draw ten locks, and write a number from 1 to 10 on the locks.

Step 2 Draw several keys. Each key has a different sum written on it.

Tip: Make sure that the solution to the sum on the key is written on one of the locks. For example, if you make a key with sum ' $3 + 2$ ', then there also needs to be a lock with the number 5.

Step 3 If you have crayons, you can colour in the locks and the keys. Cut out all the locks and the keys.



* HOW TO USE IT:

1. The children take all the locks and put them on the table.
2. The first player takes a key and works out the sum.
3. When he or she finds the solution, he/she matches it with the right lock.
4. Their friends can check whether the answer is correct. If it is correct, the player can keep the key, otherwise it goes back with the unused keys.
5. The next player gets a turn.
6. The children can keep playing until all the keys have been used.
7. The player with the most keys at the end of the game, wins.

10. FLYSWATTER

* MATERIALS:

- ♥ paper or cardboard
- ♥ pen/pencil/marker
- ♥ crayons or coloured pencils
- ♥ scissors



* WHAT IT IS:

This is a fun game to practise numeracy skills. The game uses pictures of flies, a flyswatter and small 'sum cards' with different sums. The players take turns working out sums and swatting at flies.

* HOW TO MAKE IT:

Step 1 Draw different flies and one or two flyswatters on paper and cut them out.

Step 2 Write a number in each fly. You can make ten flies, and then write in each fly a number from one to ten.

Step 3 Make little sum cards on paper or cardboard. Write different sums on each little card. This can be an addition, a subtraction, etc. The sum cards you make should be relevant to what the children are learning at that time. For example, you can introduce 'zero', more difficult sums or subtractions as the children progress.

Tip: Make sure that the solution to the sum card is written on one of the flies. For example, if you make a sum card ' $3 + 2$ ', then there also needs to be a fly with the number 5.

Step 4 Protect the cards, flies and flyswatter with see-through tape. This way, the cards will last much longer.

$1 + 0 = \dots$	$0 + 5 = \dots$	$6 + 2 = \dots$
$0 + 2 = \dots$	$5 + 1 = \dots$	$3 + 5 = \dots$
$1 + 1 = \dots$	$2 + 4 = \dots$	$4 + 4 = \dots$
$2 + 1 = \dots$	$3 + 3 = \dots$	$8 + 0 = \dots$
$3 + 0 = \dots$	$6 + 0 = \dots$	$1 + 8 = \dots$
$3 + 1 = \dots$	$6 + 1 = \dots$	$7 + 2 = \dots$
$2 + 2 = \dots$	$2 + 5 = \dots$	$3 + 6 = \dots$
$4 + 0 = \dots$	$4 + 3 = \dots$	$6 + 3 = \dots$
$4 + 1 = \dots$	$0 + 7 = \dots$	$4 + 5 = \dots$
$2 + 3 = \dots$	$7 + 1 = \dots$	$9 + 0 = \dots$

* HOW TO USE IT:

1. Spread the flies across the table and make sure that all the children that are playing can see all the numbers. Make a small pile with the sum cards (face-down).
2. The first child gets a turn to take a sum card from the pile. The child takes the flyswatter when he or she knows the solution and swats the fly with the right number written on it.
For example: if the child took the card ' $3 + 2$ ', he or she must swat the fly with number 5.
3. Their friends can check whether the answer is correct. If it is correct, the player can keep the sum card, otherwise it goes back in the pile of sum cards.
4. The next player gets a turn.
5. The children can continue playing until all the sum cards have been used.
6. The player with the most sum cards at the end of the game, wins.

11. COUNTING TAILS

* MATERIALS:

- ♥ paper or cardboard
- ♥ something to write and draw with
- ♥ scissors
- ♥ bottle tops
- ♥ a plastic bag or a piece of string
- ♥ sticky stuff
- ♥ something sharp, for example a nail

* WHAT IT IS:

Counting tails is a mathematics game, consisting of pictures of animals. The animals have long tails and a sum can be stuck on their belly. When the player has figured out the answer to the sum, they string the correct number of bottle tops on the animal's tail. Examples of animal and sum cards are provided in your resource pack.

* HOW TO MAKE IT:

- Step 1. Draw an animal without a tail and cut it out. You can cover the picture with see-through tape. This way, it will last much longer.
- Step 2. Cut a ribbon from a plastic bag or use a piece of string. Make a small hole in the animal picture and attach the plastic ribbon or string as a tail. You can cover the end of the tail with a small piece of tape (like with a shoe lace). This will make it easier to thread the bottle tops on.
- Step 3. Take bottle tops and make a hole through the middle of each bottle top by pushing a knife, a nail or scissors through it.
- Step 4. Make little sum cards on paper or cardboard. Write different sums on each card. This can be an addition, a subtraction, etc. The sum cards you make should be relevant to what the children are learning at that time.

Examples:

- You can draw dots. The children have to count the dots and put the same number of bottle tops on the tail.
- An addition or subtraction. You can make the exercises easier or more difficult, depending on what you are teaching at the moment or what the children have already learnt.

- Step 5. Take a sum card and stick it on the animal, using the sticky stuff. You can change the sum cards easily.

HOW TO USE IT:

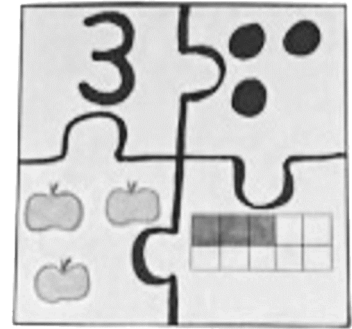
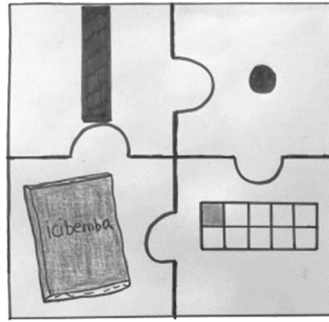
1. This is a game that children can play individually, in pairs or in small groups.
2. Each child playing has an animal and bottle tops. The animal has a sum card already stuck on its belly.
3. The child works out the sum and strings the correct number of bottle tops to the animal's tail.
4. If more than one child is playing, they can check each others' answers. Alternatively, the teacher check the answer.
5. You can allow the children to stick new sum cards to the animal's belly and make more sums.



12. NUMBER PUZZLES

* MATERIALS:

- ♥ paper
- ♥ a pencil / black marker
- ♥ coloured pencils or crayons
- ♥ a ruler
- ♥ scissors



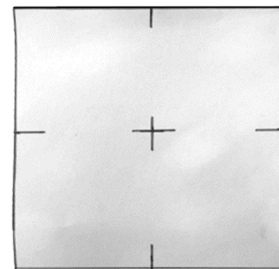
* WHAT IT IS:

This puzzle builds the numeracy and logical thinking skills of children. It helps children to understand the meaning of numbers. The game consists of 40 puzzle pieces, as there are 10 puzzles in the game (representing the numbers 1 up to 10). Every puzzle has four pieces.

* HOW TO MAKE IT:

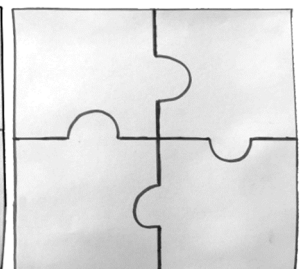
Step 1 Take a sheet of paper and draw a square on it.

Step 2 Divide the square in four equal quarters. Draw small lines as shown on Picture 1, and a cross in the middle.



Picture 1

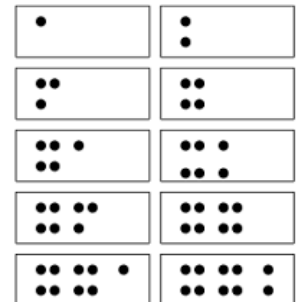
Draw puzzle lines on the inner outline of each square, as shown on Picture 2.



Picture 2

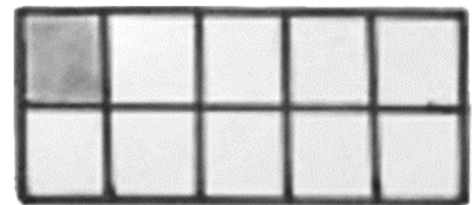
Step 3 Write the number '1' with a black marker or a crayon on the first puzzle piece.

Step 4 On the second piece, draw an image that represents the number. For example: one book, one bottle, one apple, etc.



Step 5 On the third puzzle piece you draw the dots representing the number. For example: number 1 is represented by one dot. If you always visualise the dots as shown in the picture, it will be easier for the children to remember and recognize them.

Step 6 On the last puzzle piece you draw a rectangle that you divide into ten equal parts, as shown in the picture on the right. Colour the first square in the rectangle, as it represents the number '1'.



Step 7 Now repeat the same for numbers 2 up to 10.

Step 8 When your puzzles are finished, cut out all the pieces. You can cover them with see-through tape, as they will last longer that way.

* HOW TO USE IT:

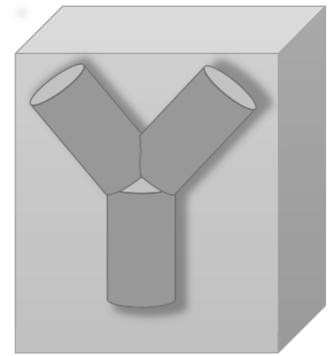
This activity can be done individually, by a small group of children or as an introduction to the lesson (as a group).

1. Spread out the puzzle pieces on a table and let one child pick the first puzzle piece. In the beginning, it will be easier if you keep the puzzle pieces with the different types of representations in separate groups though on the same table.
2. The children can play until they have finished all ten puzzles.

13. ADDING MACHINE

* MATERIALS:

- ♥ cardboard box
- ♥ 3 toilet rolls
- ♥ tape
- ♥ scissors
- ♥ something to keep your box steady, like a bottle filled with water

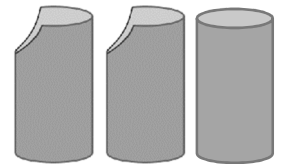


* WHAT IT IS:

This is a mathematics 'machine' that adds numbers. The children can put seeds or pebbles into the machine, which adds them up for them. If you turn the machine around, it splits the pebbles or seeds up. The children learn about number concept and the concept of adding or splitting numbers in a fun way.

* HOW TO MAKE IT:

- Step 1 Take 3 toilet rolls. Cut a small piece off two of the three toilet rolls.
- Step 2 Take a cardboard box and tape the three toilet rolls onto the box as shown on the picture above.



Make sure the toilet rolls fit onto each other nicely.

- Step 3 If need be, you can make the adding machine steadier by putting something heavy inside the cardboard box (like a bottle filled with water).
- Step 4 You can put a small container under the adding machine, to catch the pebbles or seeds as they fall through.

* HOW TO USE IT IN CLASS:

This activity can be done individually, in small groups or with the whole class, to learn the concept of adding numbers.

1. The child takes some pebbles or seeds and puts a few of them in the left toilet roll (for example 2) and a few in the right (for example 3).
2. They will fall through the bottom toilet roll. Let the children count how many pebbles fell out.
 $2 + 3 = 5!$
3. If you turn the machine around, it becomes a splitting machine. If a child throws in five pebbles, these can split into different combinations as they fall out of the two toilet rolls that are now pointing down. Instead of one container, you can provide two, to catch the pebbles that will fall through the two toilet rolls. Splitting numbers can help children understand the concept of number bonds.

14. NUMBER LINE

* MATERIALS:

- ♥ paper
- ♥ a marker or crayon
- ♥ string, tape, sticky stuff



* WHAT IT IS:

No example of a number line has been provided in your resource pack, but it is easy to make.

The number line is made of cards with numbers from one to ten and the same number of dots. You can use it in your class, with all the numbers next to each other. It will help the children to remember and recognise the numbers.

* HOW TO MAKE IT:

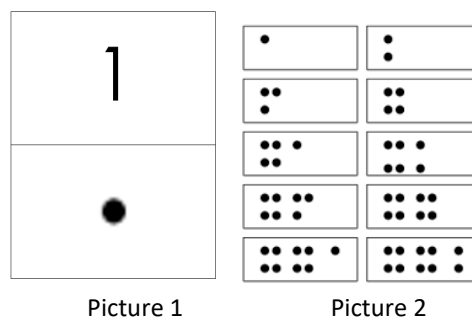
Step 1 Take a sheet of A4 paper, divide it in half.

Step 2 In the upper half of the paper, you write number 1. In the lower half, you draw 1 dot (see picture 1).

Step 3 Do this for all the numbers up to 10. Look at picture 2 to see how to draw the dots. If you draw them always in the same way, children will learn to recognize the number without having to count the dots separately.

Step 4 Hang the cards next to each other – from left to right, number 1 to number 10. You can stick them on the wall, or on a string between two nails.

Explain to the children that they can use the number line when making their sums.



OUTDOOR LITERACY AND NUMERACY ACTIVITIES

In this section, there are a few ideas of activities you can do outside to develop early literacy and numeracy skills.

15. THROWING CANS

* MATERIALS:

- ♥ One whole plastic bag
- ♥ More plastic bags, can be torn or pieces
- ♥ 6 cans
- ♥ Scissors



* WHAT IT IS:

This is a group game to practise numeracy or literacy skills outdoors. Apart from literacy or numeracy skills, the children also practise their gross motor skills as they aim with the ball.

* HOW TO MAKE IT:

Step 1 Make a small ball with plastic bags. Put all (the pieces of) the plastic bags inside one bag. Press the content together, making a firm ball.

Tie a knot in the bag so the content stays pressed together, and wrap the rest of the plastic bag around the ball again. Make another knot in the plastic bag. Cut the rest of the plastic bag off with scissors.



Step 2 Take the cans. Put 3 cans on the ground, then put 2 cans on top of them and the last one on top of these two (see picture above).

Draw a line on the ground, or use a stick to mark the line from where the kids can throw. The children must line up and wait their turn.



* HOW TO USE IT:

1. The first child aims the ball at the cans. Count how many cans fall down. When 3 cans have fallen down, the child gets 3 points, etc. You can mark the points on the ground.
2. Every child can throw once. After that, the child gives the ball to the next child and goes back to the end of the row.

Tip: this game can become boring if children must wait a long time for their turn. The game is better played in a smaller group. You can set up more cans and provide more balls if you have many children in your class.

→ Examples to use in numeracy classes:

- *Game 1:* After counting the points, you can ask the children questions. For example: "if 'child one' has 3 points, and 'child 2' has 1 point. How many points do they have together?"
- *Game 2:* Draw different shapes in different colours on the cans. While playing the game, ask the child which shapes and which colours fell down.

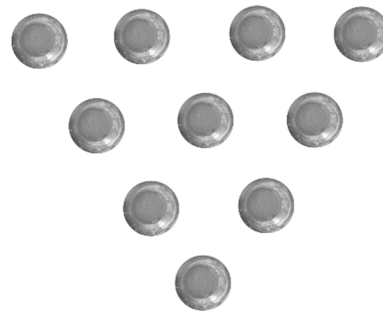
→ Example to use in literacy classes:

- *Game 3:* Write letters that the children have already learned on the cans. The child reads the letters on the cans that fell down on their turn. You can ask the child to make a word with one of the letters.

16. BOWLING

* MATERIALS:

- ♥ 10 plastic bottles
- ♥ Water
- ♥ Plastic bags
- ♥ Chalk/ a stick



* WHAT IT IS:

This is a group game to practise numeracy or literacy skills outdoors. It builds the numeracy or literacy skills of children. The children also practise their gross motor skills as they aim the ball at the bottles.

* HOW TO MAKE IT:

- Step 1 Take 10 plastic bottles. Fill them about one third of the way with water or some soil.
- Step 2 Put the plastic bottles in 4 rows, like in the picture above.
- Step 3 Make a ball out of plastic bags (see the Throwing Cans game on the previous page).
- Step 4 Draw a line on the ground, or use a stick to mark the line from where the kids can throw. The children have to line up and wait for their turn behind this line.

* HOW TO USE IT:

→ Examples to use in numeracy classes:

- *Game 1:*
 1. Write numbers from '1' up to '10' on the bottles. When the kids know more numbers, you can also write higher numbers on the bottles.
 2. The child throws the ball at the bottles. Afterwards, he or she must count how many bottles have fallen over and say which numbers have fallen.
- *Game 2:*
 1. Draw different shapes in different colours on the bottles.
 2. The child throws the ball at the bottles. Then she or he must say which shapes and which colours have fallen.
- *Game 3:*
 1. Write the numbers from one to ten on the bottles.
 2. The child aims the ball at the bottles. Afterwards, he or she should choose 2 bottles that have fallen and add the numbers on the bottles together. For example: if the child has chosen the numbers 2 and 4, he makes the sum $2 + 4 = 6$.
 3. When the children get better at doing sums, you can let them add all the numbers on the bottles that have fallen. For example: $3 + 2 + 6 + 1 = 12$

→ Example to use in literacy classes:

- *Game 4:*
 1. Write different letters (that the children have already learned) on the bottles.
 2. The child throws the ball at the bottles. Then he or she should read which letters have fallen. You can also ask the child to make a word with each letter that has fallen.