



newmero bricks
Kindergarten pack



newmero bricks

Early math games and toys are particularly important for children's later general learning capabilities.

These brick's innovative and award winning design has proven to be very effective and fun for both preschoolers and school children who need to get "back on track".

It is a fun and different way of understanding math by feeling, building and decomposing numbers.

The bricks can be used for many different games and exercises, including:

- identifying and building numbers
- counting and sorting
- adding to 10s ("ten friends")
- performing addition and subtraction

Find more games at www.newmero.dk under the navigation menu "math games" or download our big manual with more exercises at the bottom of the page.

content in the box

UNITS

Yellow bricks, ten sets. Numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9.



TENS

Green bricks, five set. Numbers: 10, 20, 30, 40, 50, 60, 70, 80, 90.



BAG

Five handy bag for storing the bricks.



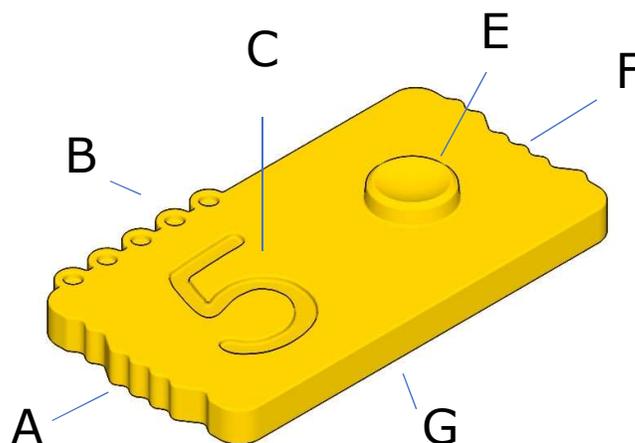
BOOKLET

This booklet with inspirational examples of exercises/ games.



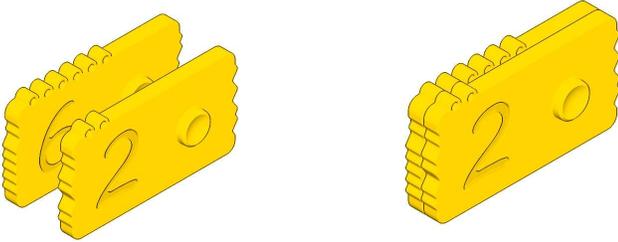
THE BRICK

- A. Left jig saw pattern
- B. Counting knobs
- C. Numeral value
- D. Bottom edge
- E. Stacking/connector knob
- F. Right jig saw pattern
- G. Back side



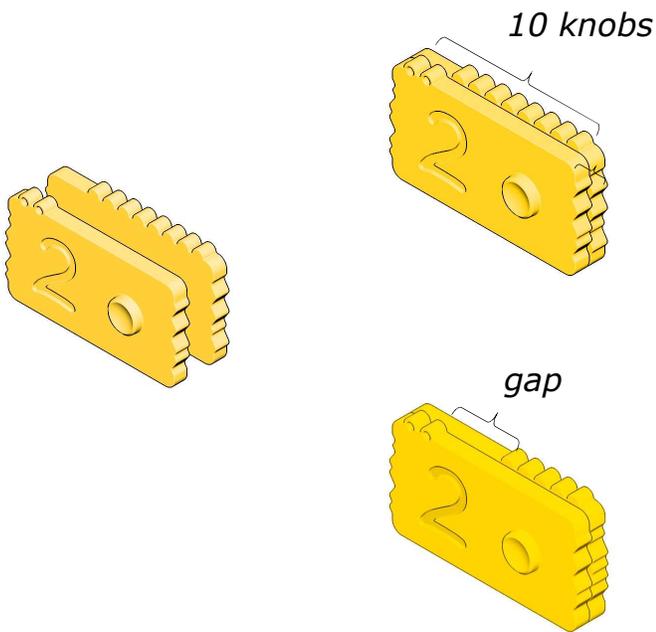
SUPERPOSITION

The bricks stack, backside on top of front side.



OPPOSITION

Backside against backside.



TOP AGAINST TOP

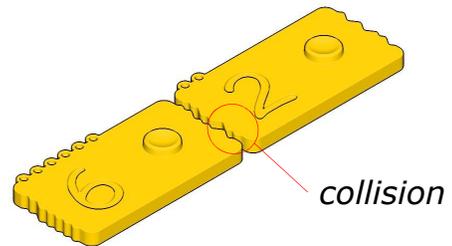
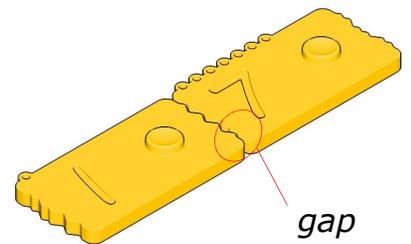
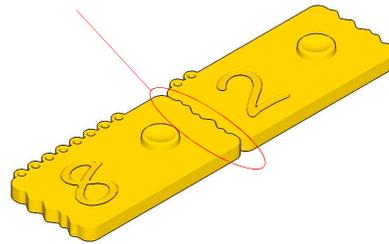
Counting knobs to counting knobs.



JUXTAPOSITION

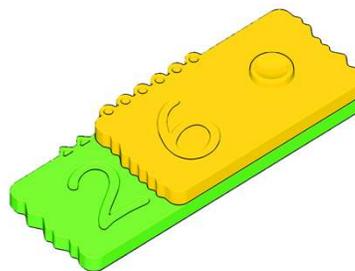
Two bricks of same colour that add to 10, 100 or 1000 fit together.

Perfect fit



STACKING

Stack of bigger numbers.



who is this?



3-5 years



1+ child



5 -10 min

This exercise will help the child associate the symbol of numbers to the sound/name of the numbers.

For this exercise you pick all the yellow bricks and place them on the table or in the cotton bag.

You then tell the child that the bricks are fish and the table/bag is a pond.

Ask the child to pick any fish from the pond and then ask what number is written on the fish (brick). Note that in this exercise we do not use the knobs on the bricks but only the digit symbol.

Let's say the child picks a brick with the number 4 written on it. Ask the child "Who is this?" (what is the name of the number symbol on the brick?). This helps the child to associate the sound/word "four" with the symbol "4".

The exercise should be repeated often to ensure the child has been through all the numbers many times. Over time, the child will recognize all the symbols for the numbers and match them with the correct sound/name for the numbers.

You can develop the exercise further by adding the green bricks.

Have fun!

find the fish



3-6 years



1+ child



5 -10 min

This exercise will help the child associate the sound/name of numbers to the symbol of the numbers.

For this exercise you pick all the yellow bricks. It is a very simple exercise and the aim is the opposite exercise of "Who is this?".

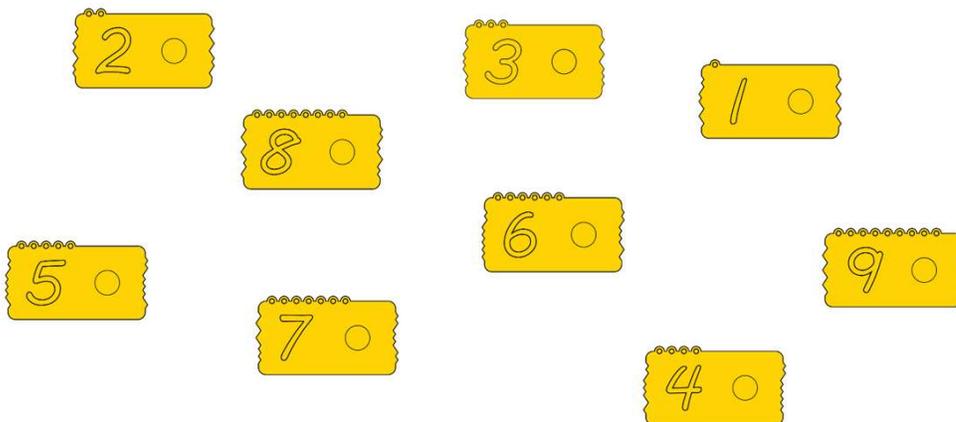
Place all the yellow bricks face up on the table and shuffle them around. The bricks are now fish in a pond. The number symbols should all be visible.

You then ask the child to find fish number "three", for example. In this case the child has to look at the bricks and identify the brick with number 3 written on it.

The exercise should be repeated often to ensure the child has been through all the numbers many times. Over time, the child will recognize all the sounds/names for the numbers and match them with the correct symbols for the numbers.

You can develop the exercise further by adding the green bricks.

Enjoy!



counting the knobs



3-5 years



1+ child



5 -10 min

This exercise will help the child associate the sound/name of a number to the value of a number

For this exercise you pick all the yellow bricks.

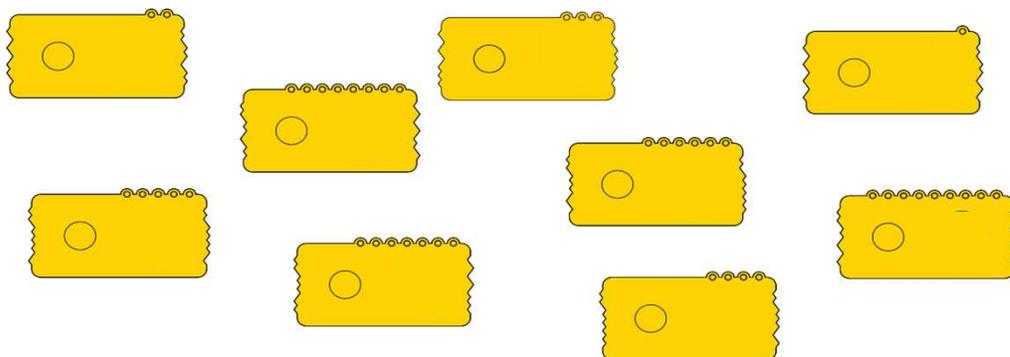
Place all the yellow bricks facing down (with the back-side facing up) on the table and shuffle them around. The bricks are now fish in a pond.

Ask the child to find/point out the brick number "6", for example. Notice that the only way for the child to find the number "6" brick, is to count the knobs on the brick. The child cannot see the symbol "6". This way the child exercises counting the knobs and get a tactile sensation of value/size of a number.

The exercise should be repeated often to ensure the child has been through all the numbers many times. Over time, the child will recognize all the sounds/names for the numbers and match them with the correct value (number of counting knobs).

Together with the exercises "Who is this?" and "Find the Fish", this exercise helps associate symbol of numbers, to sound/name of numbers and value of numbers.

Have fun!



Counting

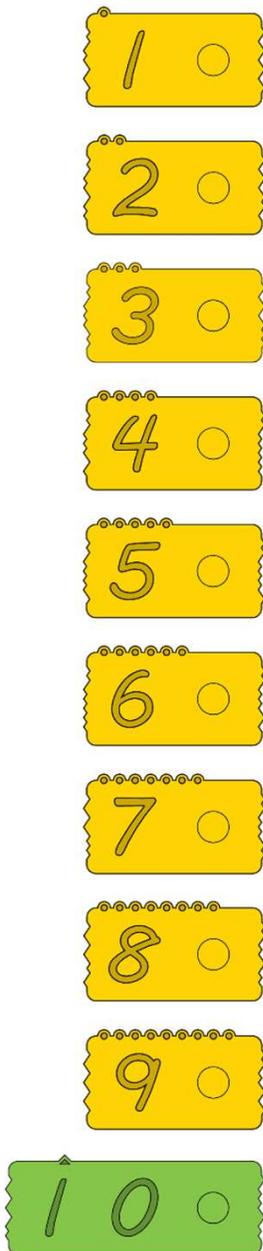
 3-6 years

 1+ child

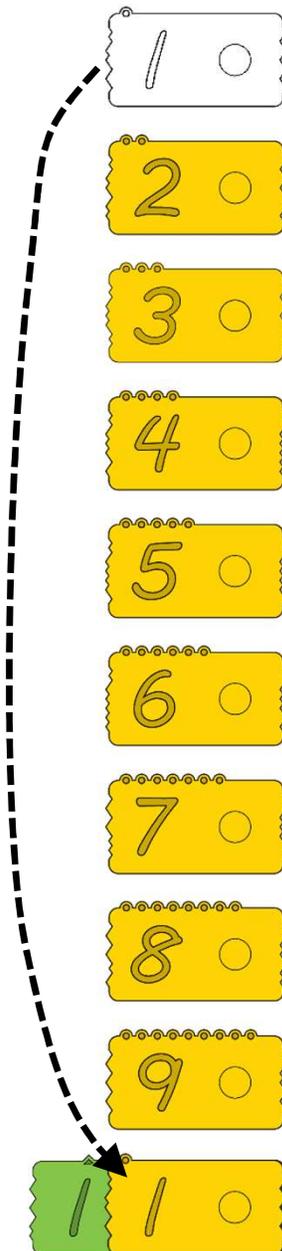
 5-10 min

Count to 29 with bricks

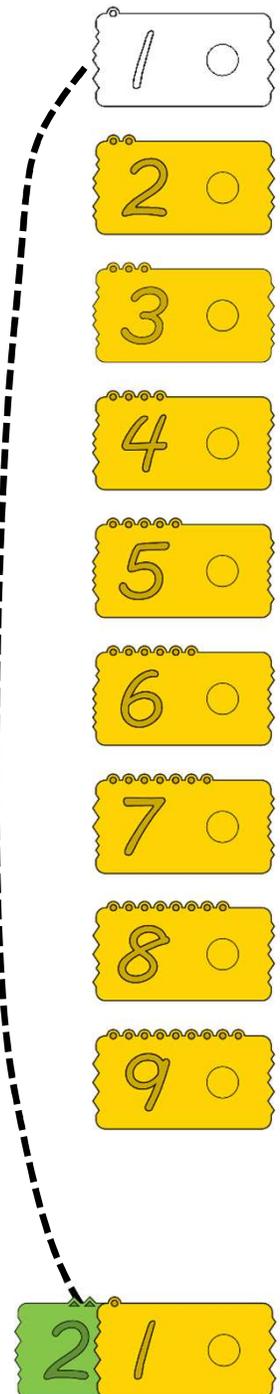
Count to 10



Build 11, 12, ..



Build 21, 22, ..



who is largest?



3-6 years



1+ child



5 -10 min

This game helps the child understand the difference between large and small numbers.

Put all the yellow bricks in the bag or on the table with the numbers facing down.

This exercise is best done with only two participants. Everyone picks up a brick, shows it to each other and reads the number aloud.

Ask the child who has the largest number. The one who has the largest number wins the bricks (see below how the child learns, which number is actually largest). When there are no more bricks in the bag or on the table, the game ends. The one who won most bricks wins the game.

If the child is unsure which number is largest, it can put the brick one above the other ("superposition" using the connector knob) and compare the counting knobs visually. The brick with "more" knobs is the largest.

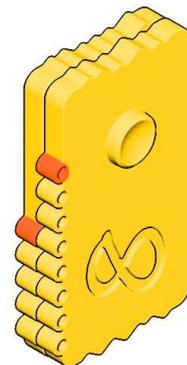
The figure below shows this for the 2 and 6-brick, where we have highlighted the difference between, the "top-counting-knobs".

The exercise should be repeated often to ensure the child has been through all pair of numbers many times. Over time, the child will recognize which number is larger than the other.

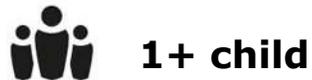
When the child is more experienced, you could ask him/her to tell how much larger one number is than the other – see exercise "How much larger?".

Enjoy!

The 8-brick is larger than the 5-brick



how much larger?



This game is an introduction to simple subtractions

Please rehearse the "WHO IS LARGEST?" exercise first before doing this exercise.

Put all the yellow bricks in the bag or on the table with the numbers facing down. This exercise is best done with only two participants in the beginning. Everyone picks up a brick, shows it to each other and reads the number aloud.

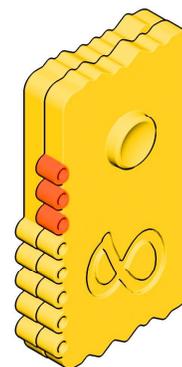
After asking which number is largest, the child "how much larger" one number is than the other.

If the child is unsure, it can put the brick one above the other ("superposition" using the connector knob) and compare the counting knobs visually. The difference can be counted easily when the bricks are put one above the other.

For example placing a 8-brick above a 5-brick, shows that the 8-brick has three more knobs than the 5-brick. So, the 8-brick is 3 larger than 5-brick. The figure below shows this for the 5 and 8-brick, where we have highlighted the "difference":

The exercise should be repeated often to ensure the child has been through all pair of numbers many times. Over time, the child will be able to tell exactly how much larger one number is than the other.

The 8-brick is 3 larger than the 5-brick



building an animal



4-6 years



1+ child



5 -10 min

This exercise trains counting – not the sum of the bricks.

Lay all the bricks on the table or the floor.

Start out by asking the child to build an animal from some of the bricks.

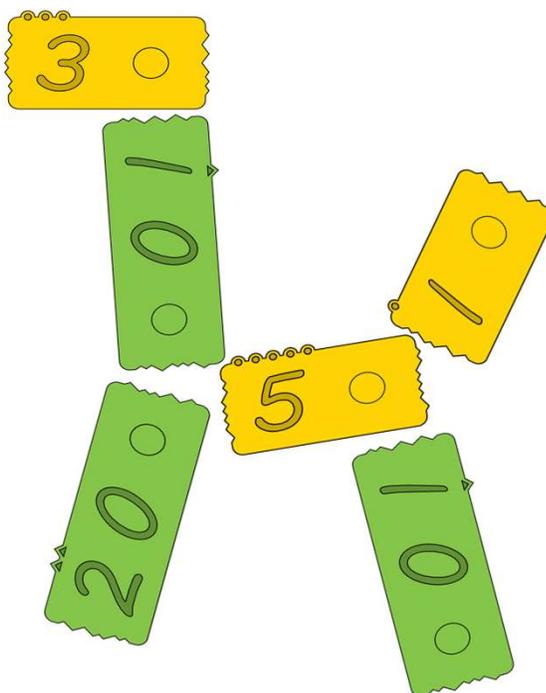
The child could for example build a horse by choosing different colored bricks.

Now, ask the child how many bricks are in the horse?

The child should now start counting all the bricks that he/she used to build the horse like the example here which is 6 bricks.

The children can also build a monster, a house or whatever they like.

Have fun!



Run and find the number



3-6 years



1+ child



10 min

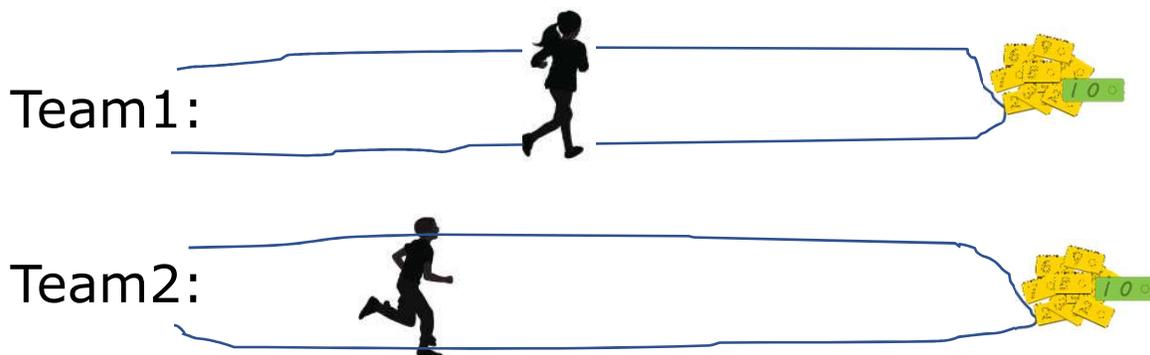
Running after numbers is a kinesthetic learning so the children learn math in a different way.

Divide the children into similar sized groups (at most ten children in each group), each with a home base/starting point. Ask each group to form a line. Make 2 identical piles of bricks (1 to 10) on the other side of the room or the playground.

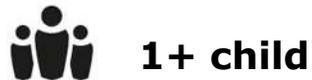
The front child from each line runs after a numbered brick from their pile, runs back and puts the numbered brick at the home base.

Each group must get the numbered bricks in the right order, starting from 1, then 2, then 3 and so on to 10.

The team that reaches 10 first in the correct order, has won.



building houses



This exercise's aim is to build double digit numbers helping the child understanding the decimal system. The child will be able to touch, compose and decompose a double digit number

For this exercise you will need all the yellow and some of the green bricks. Spread out the bricks with the numbers facing up.

The exercise is about building houses that consists of two digits. We recommend you start by only including the green bricks for 10 and 20. Later, you could include larger green bricks. NOTE: It may be useful to first have conducted the exercise "Who is this" and "Find the fish" using the green bricks.

You could for example ask the child to build the house "24". The child now have to find the green 20-brick and the yellow 4-brick. Then stack the bricks on top of each other, the largest (green) at the bottom. The bricks are designed in a way, that can stack the bricks on top of each other via the "connector knob".

During this exercise the child will have to "decode" that the value 24 is a 20 and a 4, then find the right green brick and the right yellow brick. Addition will happen implicitly by stacking the bricks. The number 24 is now physical, rather than an abstract text on an piece of paper. The child can see and touch the two bricks, splitting and rebuilding the number.

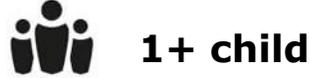
Over time, you can introduce more green bricks (Tens).

The child will develop a good understanding of how decimal numbers are build and structured.

Have fun!

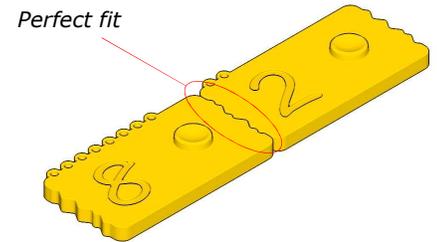


ten friends



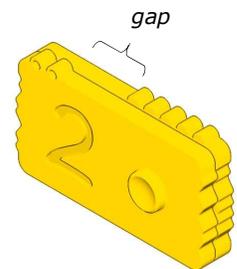
This game help children recognize pairs of single digit numbers, which together add to 10. This understanding is important for both addition and subtraction with decimal numbers later on.

Place all the yellow bricks on the table with the numbers facing up. Tell the children that all bricks have a "special friend". When these two (friends) bricks find each other they add up to 10. Take two bricks up, that add up to 10: you say, for example "this is 2 and its special friend is 8". First show that by placing the bricks side by side (juxtaposition see page 3 in this manual), the edges match perfectly. Count the knobs on the top edges. These adds up to 10. You can show afterwards that if the bricks don't match (juxtaposition) they are not "10 friends".



In fact, the bricks will guide the child towards finding the "10 friend". Take for example the 5-brick. Let's say the child takes the 2-bricks. These bricks do no match in juxtaposition.

Then, show that by putting them back-to-back ("opposition", see page 4), the bricks show the child a gap. This means the 2-brick is not the 10-friend of 5, because it is too small. The child should look for a larger value. Similarly, if the child had picked the 8-brick, the "opposition" would show an overlap, telling the child that the 8-brick is not the "10-friend" of 5, because it is too large.



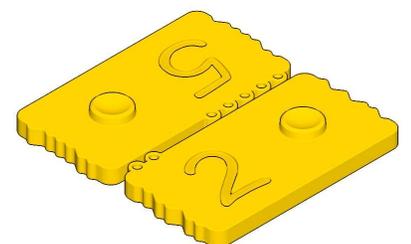
Now, that this has been explained, take any brick up and give it to the child and ask if she/he can find the "10-friend". When your child chooses a brick, he/she can either count the knobs, try to match the edges to see if they match, place them back-to-back or place them "top knobs against top knobs".

The knobs guides the child to see if the right number ("10 Friend") should be bigger or smaller.

When there are no bricks left on the table, the exercise ends.

This exercise can also be done with the green bricks ("Hundred friends").

Have fun and remember to give praise.



patterns

 4-7 years

 1+ child

 5 -10 min

Teach the children to recognize patterns in a sequence of colored and numbered bricks.

In a pattern, there is often a “part” that gets repeated like the stones on a sidewalk or beads in a necklace. Patterns provide a sense of order in what might otherwise appear chaotic.



Understanding patterns aid in developing mental skills and can provide the basis for understanding algebra.

The children should find out themselves which color(s) comes next in a sequence of colors – the bricks are used to represent the colors.

In addition, there are also more difficult patterns, where the children should find patterns as a combination of numbers and colors.

You can print out the following page and ask the child to find the next one or two missing bricks. You can also lay out the bricks on the table like it is shown on the next page and the child should continue the pattern.

Have fun!

Easy patterns (use only colours)



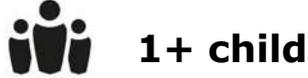
Find the missing bricks and put on the line:



sorting the numbers



5-7 years



1+ child



5 -10 min

This exercise will help the child understand that numbers can be sorted in increasing or decreasing order.

Pick the entire stack of bricks of one colour, for example all yellow bricks. Let the child choose three different bricks and put the other bricks aside for the time being.

Lets say the child picked the bricks with the numbers 3, 5 and 8. Ask the child to arrange (sort) the numbers so the smallest number is at the left side, the middle number is in the middle and the largest number is at the right.

If the child does not yet understand how numbers are sorted by their value, a little guidance will help the child to do that. This way the child learns that 3 is smaller than 5 and 5 is smaller than 8.

The bricks themselves can also guide the child to see if the numbers are sorted in the correct way. The child can simply stack the bricks on to of each other (left to right).

If the knobs look like a "staircase" the bricks are sorted (increasing or decreasing). If the knobs look like a "mountain" or a "valley" the bricks are not sorted. This is shown below in the figures, where we have highlighted the "top-knobs".

For example, if the three bricks have been placed as follows:

- 3 - 5 - 8: Staircase
- 3 - 8 - 5: Mountain
- 5 - 3 - 8: Valley
- 5 - 8 - 3: Mountain
- 8 - 3 - 5: Valley
- 8 - 5 - 3: Staircase



Staircase



Mountain



Valley

Of course you can in time let the child pick more than three numbers or introduce the green bricks to sort but start easy and work your way to more numbers.

Enjoy and remember to give praise!

in between



4-7 years



1+ child



5 -10 min

This exercise will help the children understand sizes of number and sorting them.

Put one set of the yellow bricks, 1-9 on the table.

You pick a small number and a large number and place it side by side on the table with a space in between. Ask the child to find a number, in between these two numbers.

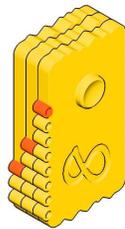
For example let us say you pick a 2-brick and a 8-brick. There are now several correct choices for the child: a 3, 4, 5, 6 or 7-brick.

Lets say the child picks a 4-brick and place it in between the 2-brick and the 8-brick. As for the exercise "Sorting the numbers", the child can always verify by itself if this is correct. Simply stack the bricks 2, 4, and 8 and see if there is a "Staircase".

If the knobs look like a "staircase" the bricks are sorted (increasing or decreasing). If the knobs look like a "mountain" or a "valley" the bricks are not sorted. This is shown below in the figures, where we have highlighted the "top-knobs" in red.

For example, if the three bricks have been placed as follows:

3 - 5 - 8: Staircase
3 - 8 - 5: Mountain
5 - 3 - 8: Valley
5 - 8 - 3: Mountain
8 - 3 - 5: Valley
8 - 5 - 3: Staircase



Staircase



Mountain



Valley

You can continue the exercise by asking for another number. For example in between 4 and 8. This way you can continue till all numbers have been placed in sequence.

Have fun!

at the cash counter



4-7 years



1+ child



5 -15 min

This games help children to train counting and add numbers just like if you were shopping in a store.

Use the yellow bricks and a green 10 brick.

The game is simple. One player will be the shop owner selling the toys and the other will be the customer pretending to buy the toys.

We recommend an adult is the shop owner first.

For example let us say you have a teddy bear that you have for sale in your shop.

Lets say the teddy bear cost 3 euros. The child will then have to pick out bricks which equals the price. So to match the price the child could select a 1-brick and 2-brick, or simply the 3-brick.

To make the game more fun, you can also try to have a bargain about toys you are selling and buying.

The game ends when you have no more toys to sell, or when all money has been spent.

Enjoy!



Number bingo



4-6 years



2+ children



5 -10 min

Teach children to decode the name of a number – e.g. when hearing “five”, match this with the symbol “5”. The children should find out themselves which number (symbol) corresponds to the sound/name of a number.

Bingo is a popular game for all ages. You use all the yellow bricks and the “green brick 10” and place them on the table with the numbers facing up.

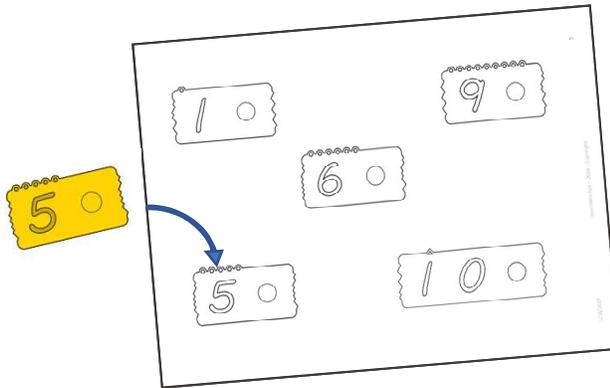
You print out the bingo tables and hand out a different bingo table to each child.

The Bingo master (you) decide a number between 1-10 and say the number out aloud.

The children should listen and look at his/her bingo table to see if the number that was said aloud corresponds to on one of the numbered bricks on the bingo table.

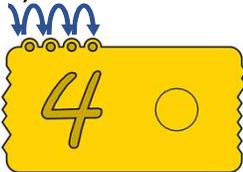
For example the bingo master shouts the number “five”.

The child should see that there is a brick with a symbol 5 on the bingo table and looks for the yellow 5-brick and place it on the top of the 5 brick on the bingo table.

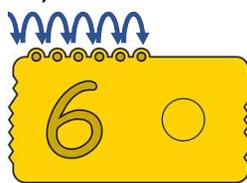


If the child is unsure about if it is the correct number symbol, the brick can help you – simply count the knobs on the brick.

“One”, “Two” ... “Four”



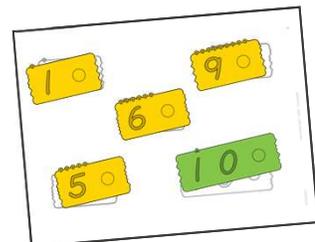
“One”, “Two” ... “Five”, “Six”



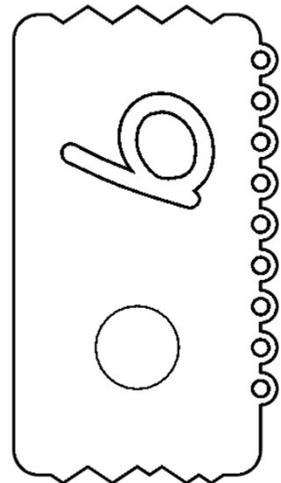
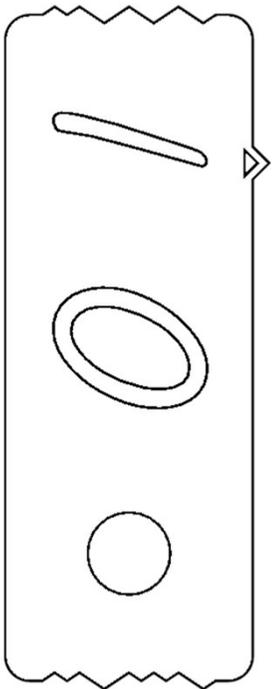
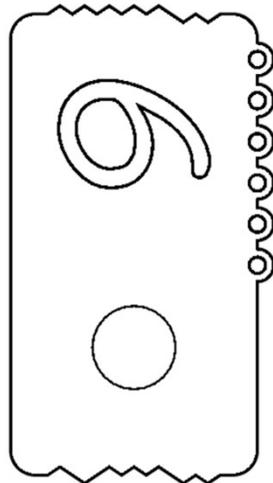
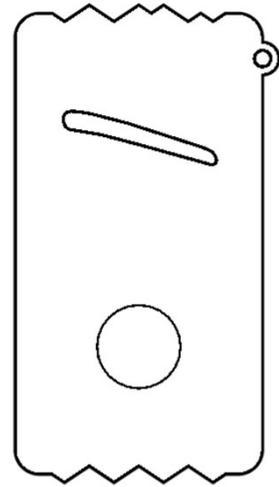
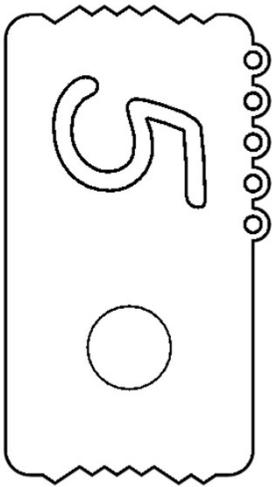
“One”, “Two” ... “Five”



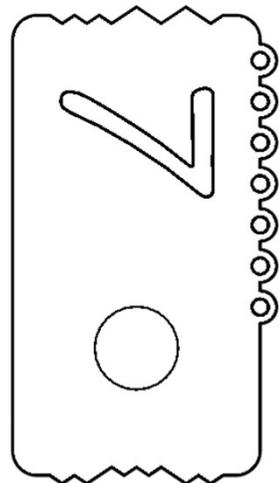
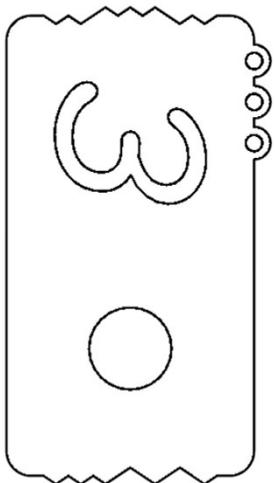
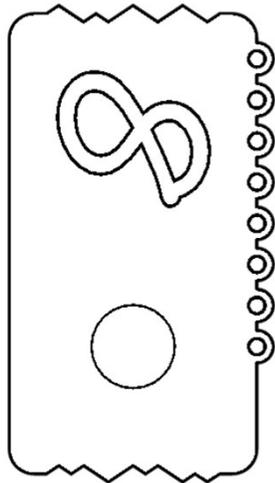
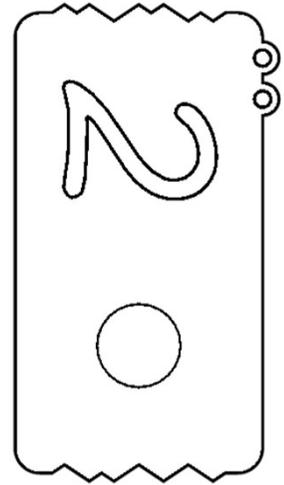
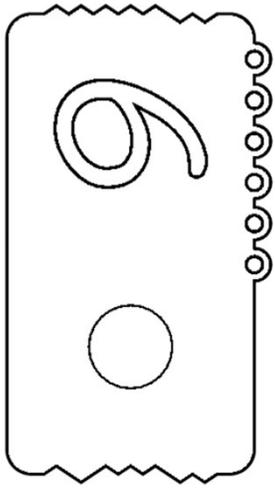
The child who has placed all the bricks on top of the bricks on his/her bingo table has won and shouts out **BINGO!**



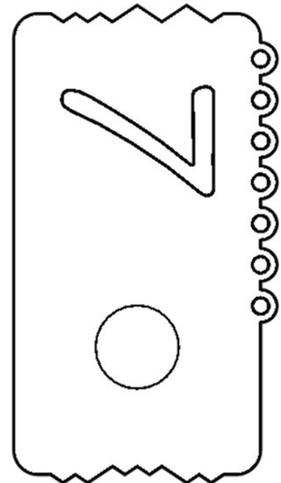
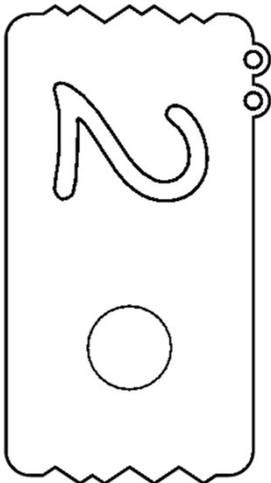
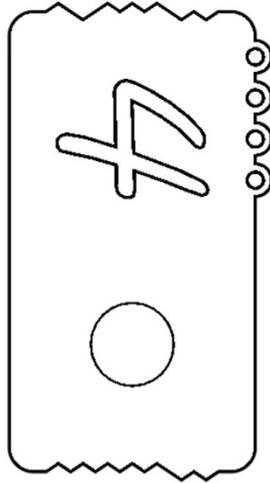
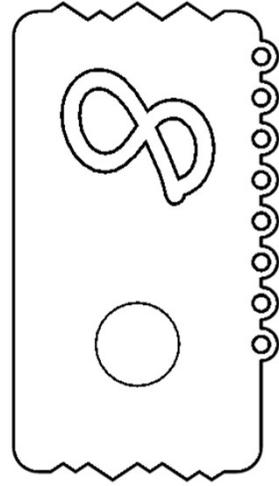
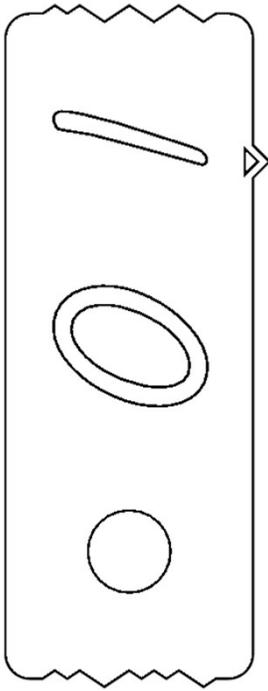
Bingo table



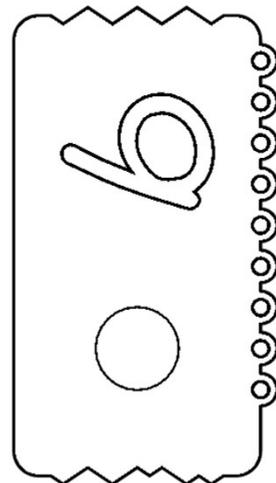
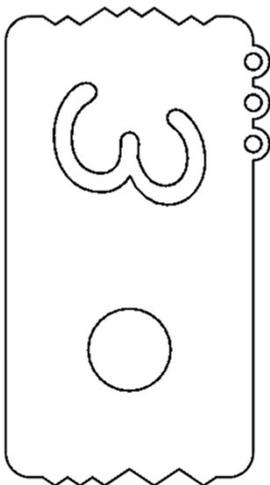
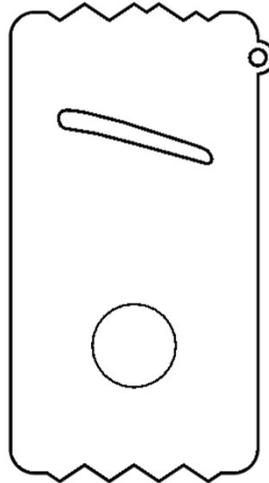
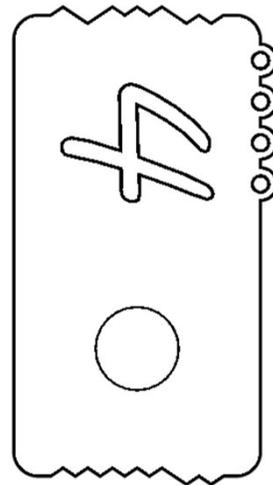
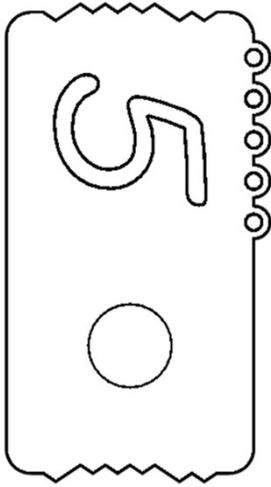
Bingo table



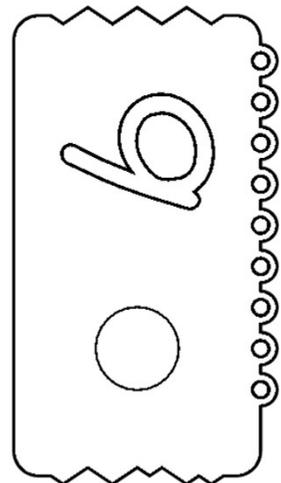
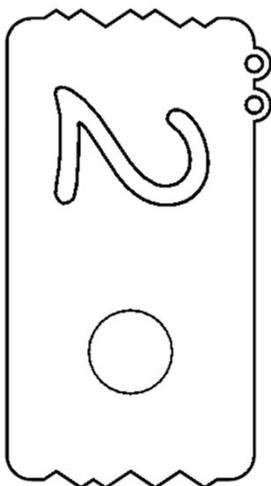
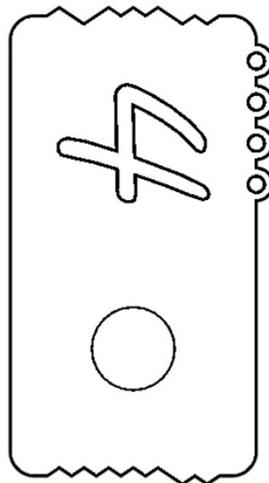
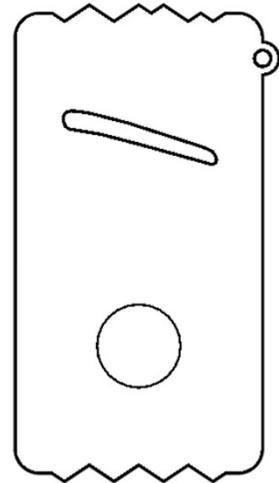
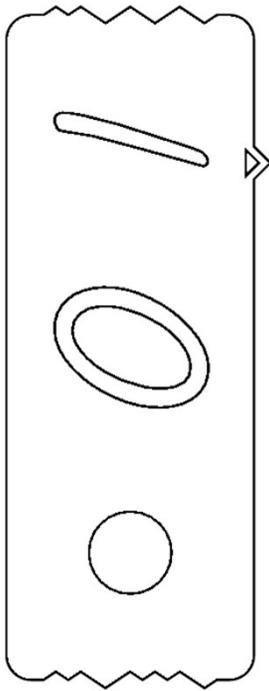
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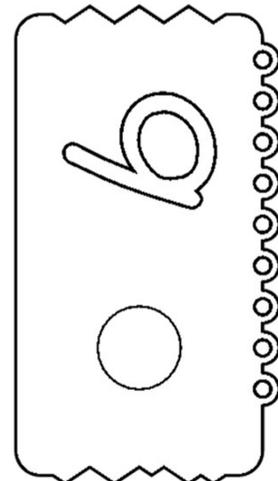
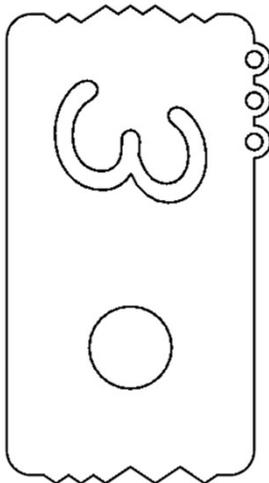
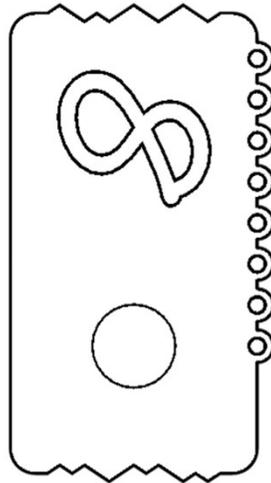
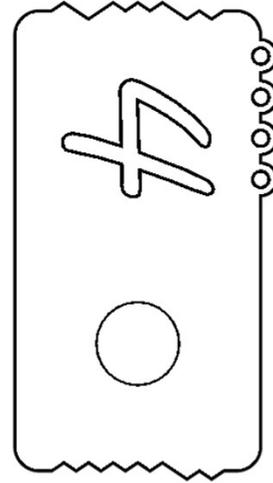
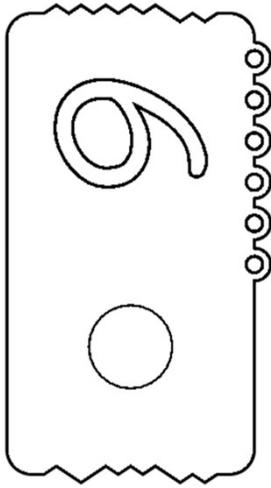
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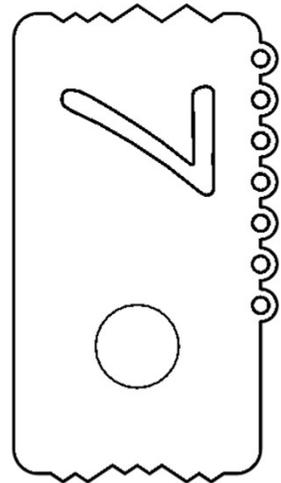
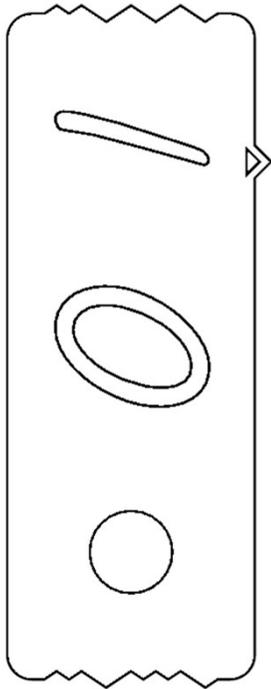
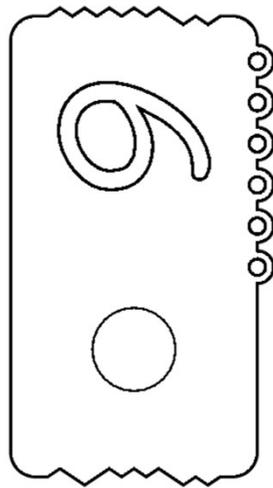
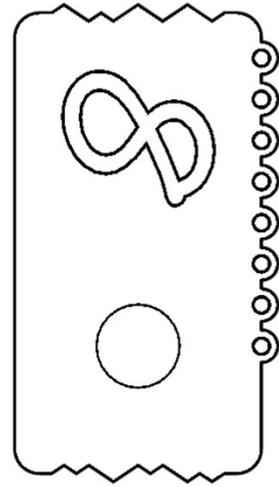
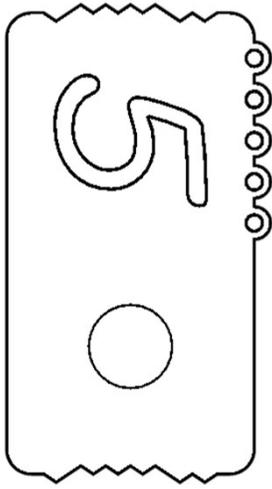
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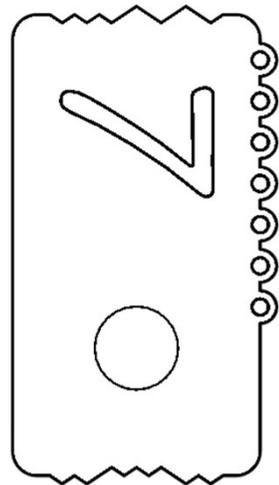
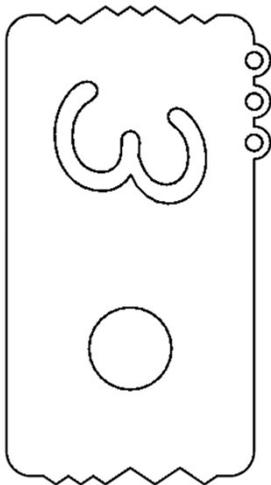
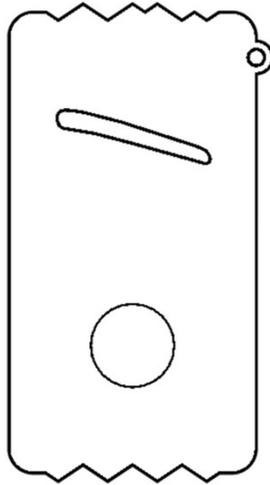
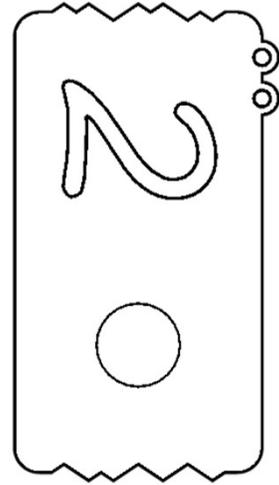
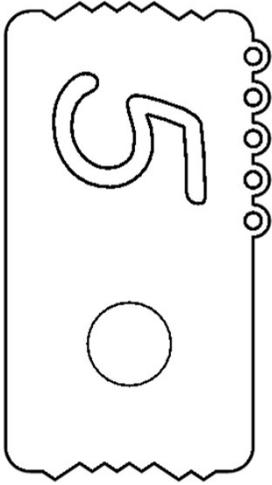
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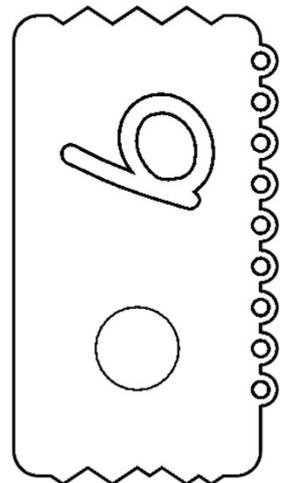
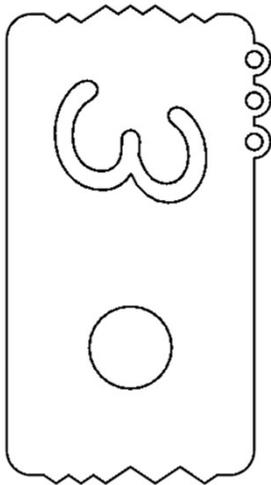
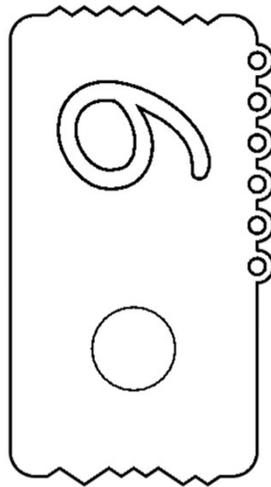
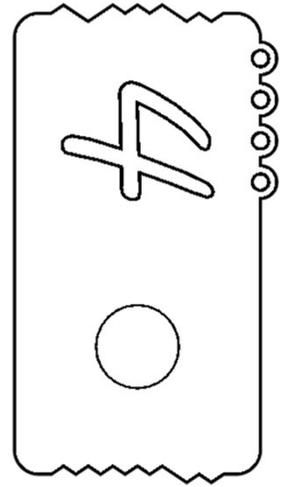
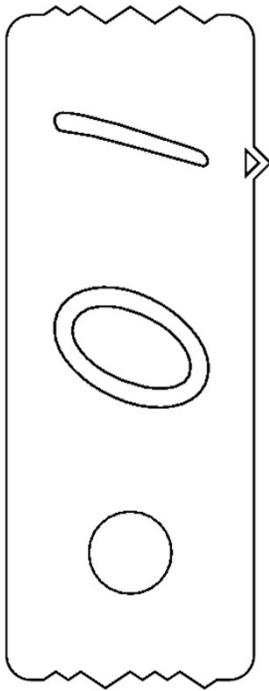
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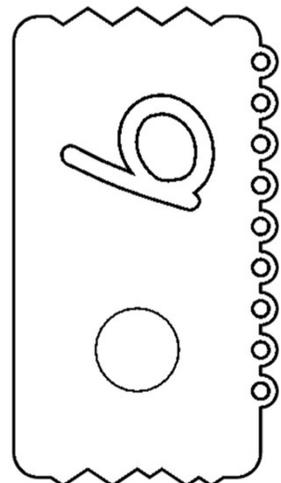
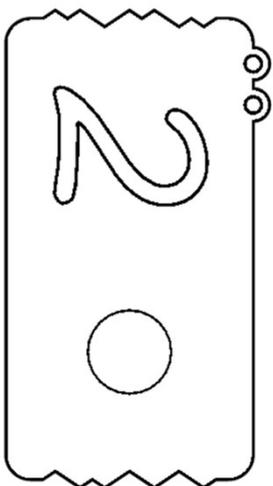
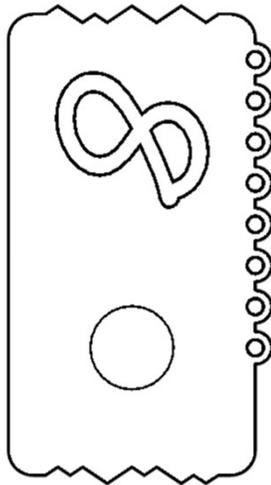
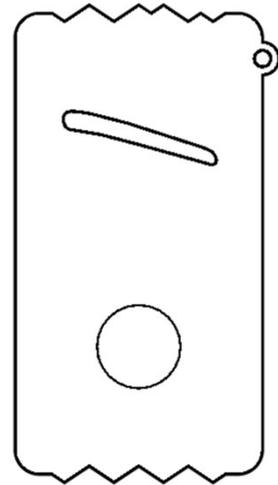
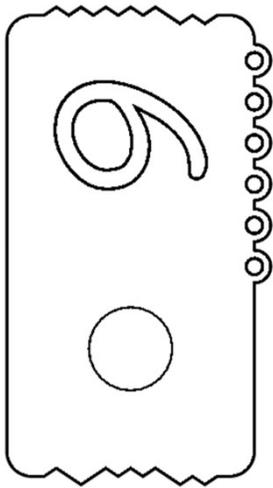
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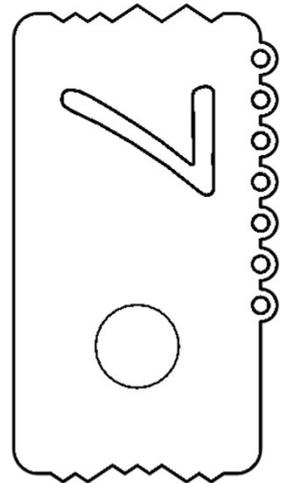
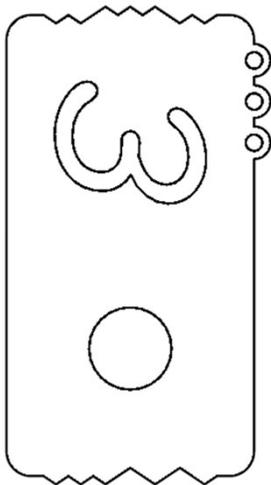
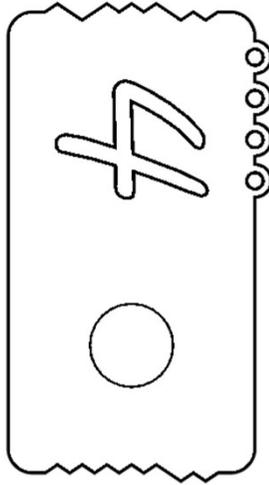
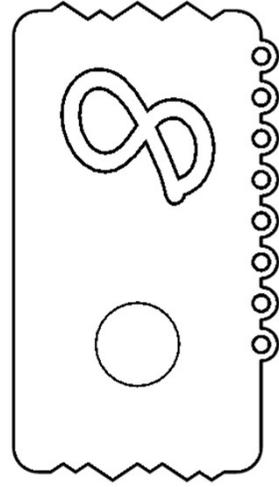
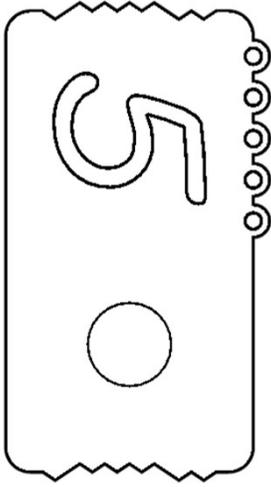
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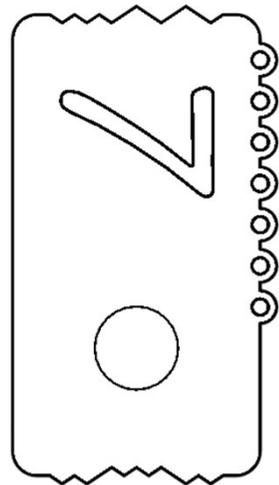
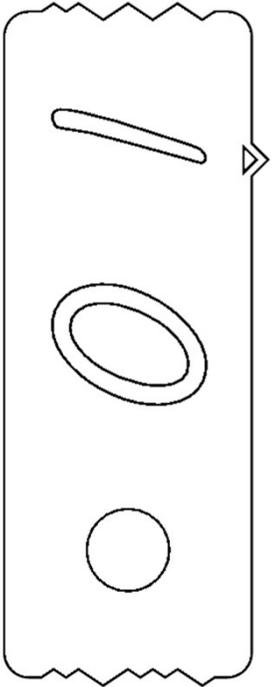
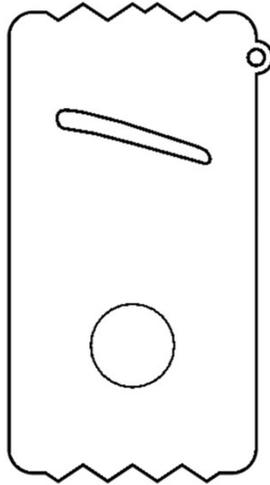
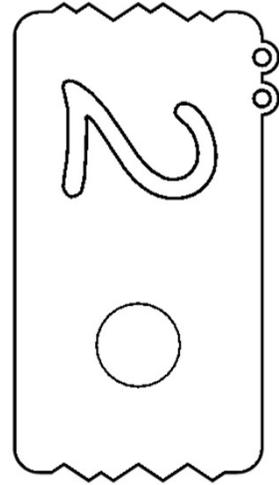
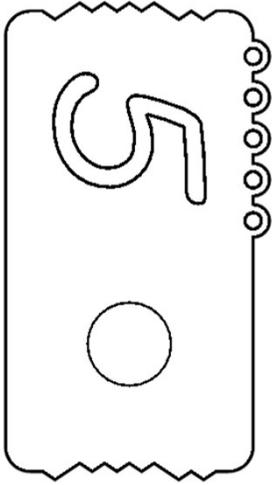
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