Montessori Outlet Corporate Advisor Bert Nienhuis



Math becomes "Graspable"

Due to the work with sensory materials, the children already have previous mathematical experiences. The math materials serve as tools to organize and structure those experiences. Through independent learning it makes the world of numbers accessible even to very young children. It supports the development of thought patterns and order structures on an integral level. Math becomes "graspable", because the materials do justice to the children's sensorimotor requirements.

At first, the number range from 0 to 10 is presented. Numeric rods, sandpaper numbers and mandrel box help estimating and comparing. The children learn the respective ways to write numbers as well as their correlation to amounts and the meaning of the number zero. During the exploration of the subsequent range of numbers, the golden pearl material is assuming the central key function. Numbers and values become meaningful and graspable.

Even very young children work with multi-digit numbers with little effort and great interest. All basic arithmetic operations can be introduced and developed with this material.

After the intensive work with the golden pearl material, the child is offered increasingly abstract materials.

Through the "active" handling, children delve deeper and deeper into mathematical thinking. In a playful manner, they learn to think abstractly and logically.

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A 130977 Numerical Rods **B** 130382 Stand for Numerical Rods, L39.5 x W9.5 cm

10 massive wooden rods with an edge length of 2.5 cm and increasing length of 10 cm to 1 m. Due to the alternating division into red and blue sections, the amounts 1 to 10 are represented. When arranging the rods, the child is sounding out the numbers and this way, is learning to count. The little number boards are an ideal addition to the numeric rods. This way, each rod (= concrete amount) can be assigned a little number board (= abstract symbol).

C 130433 Small Numerical Rods Perfectly suited for exercises that shall be done at the table. Contents: 2 sets, each with 10 massive wooden rods that are divided in alternating red and blue units. The wooden rods have 1 cm edges and are increasing in length from 2.5 cm to 25 cm.

Warning. Not suitable for children under 3 years. Small parts. Choking risk.



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C 130388 Sandpaper Numerals Box Sandpaper Numbers

On the little varnished wooden tablets, the numbers 0 - 9 are shown. The children feel the shape of the individual numerals and say the respective number. This way, they learn how to write the numbers. The special feature of the material is the inclusion of the sense of touch.







D 130431 Red Numerals

E 130432 Red Wooden Counters, 100 ea.

F 130394 Bin with Numerals and Counters Numerals and Counters

Each number is supposed to be assigned the respective amount of wooden counters. In doing so, the concrete amount is matched with its abstract symbol, the numeral. The number aspect "even" and "odd" becomes clear. The wooden bin contains: 2 Compartments with 55 red wooden counters and the numbers 1 - 10.

Dimensions: counters Ø 1.8 cm, numbers approx. 4 cm high, bin 15 x 13 x 3.5 cm.



130399 Numerals and Signs USA Print With the wooden numerals and arithmetic operators, addition and subtraction problems can be laid out. Contents: 6 sets with wooden numerals in block letters, arithmetic operators "plus" and "minus" in a wooden bin with lid.



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G 130435 Large, approx. 5.5 x 7 cm)
H 130436 Small approx. 4 x 5 cm)
Wooden Number Cards
Number cards from 1 - 9000 made of wood in an open wooden bin.



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130506 Introduction to Decimal Symbol Wooden frame with number cards, which vary in length and color (1000, 10 and 1), to introduce the decimal system. Dimensions: 1000-tablet 22 x 7 cm.





Info

"The child is the master builder of his own self" (Maria Montessori) – Immanent building plan

Each child has the power and ability to build up their personality from the inside out. In doing so, they follow an inner development plan, the "immanent building plan".

Children have the ability of spontaneous self-development. In the course of this, children are extremely sensitive vis-à-vis influences from their environment. In order that children can develop freely and healthily, they need the possibility to advance at their own pace and the freedom to develop according to their own individual abilities.



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Spindle Boxes

Ten Boards

43 x 17.5 x 7.5 cm.

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which meaning is expressed by this material. The set contains 45 individual spindles. Box dimensions:



Ten Boards

The material consists of two wooden tablets, each of which is divided into 5 fields. In nine of the fields is the number 10, one field remains empty. The children slide the corresponding tablets with the numbers 1 - 19 on the 0 in the correct sequence. Dimensions: Box length $45 \times$ width $16 \times$ height 4.5 cm; number tablets 7 × 6 cm.

E 130437 Set 1, Print F 130438 Set 1, Cursive

The Material serves as aid to learn the number sequences from 10 - 19. Contents per set: 2 sequin tablets, 9 wooden tablets with the numbers 1 - 9 in a wooden box with lid.

G 130439 Set 2, Print H 130441 Set 2, Cursive

Material for learning the number sequence from 11 – 99. Contents per set: 2 sequin tablets, wooden tablets with the numbers from 1 – 9 in a wooden box with lid.

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Info

Game of Nine

With the game of nine, the children learn and deepen the transition to ten. First of all, the single bead, the bar of ten, the square of hundred and the cube of thousand are individually introduced and placed next to each other. They are compared with each other, to make the differences in size clear. During step 2, the children are asked to take specific parts of the bead material or to give them to somebody. Only once this works without problems, step 3 follows: The adult points out, for example, the bar of ten and asks: "What is this?"

Then the game start: The adult places 9 single beads on the storage bar, while counting aloud. "1, 2 ..." After nine, he says "Stop!" This makes clear that there is no space left, and that by adding the 10th bead, the single beads are replaced by a bar of ten, because 10 ones = 1 ten. The same is done with the tens and hundreds. This way, the children recognize that 10 tens = 1 hundred, 10 hundreds = 1 thousand.



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Box with 9 golden bars of 10 single golden beads each.

J 130503 Ten Bead Box

Dimensions: bar 11.3 x 2 x 0.9 cm, box 10.5 x 8.6 x 2.2 cm. Warning. Not suitable for children under 3 years. Small parts. Choking risk.

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Introduction To Decimal Quantity with Trays

Contents: 1 single bead, 1 bar of ten, 1 square of ten, 1 cube of one hundred. Dimensions wooden box: 33 x 11.4 x 3 cm. Warning. Not suitable for children under 3 years. Small parts. Choking risk.

L 130584

Introduction to Decimal Symbols with Trays

Bead material for illustrating the setup of our number system by groups of ten. Especially accentuated are the transitions to the next place value: Transition to tens, transition to hundreds and transition to thousands.

The set contains: 9 single golden beads, 9 golden bars of ten, 9 golden squares of one-hundred, 1 golden cube of thousand, each with storage bar and wooden storage bin and one wooden tray ($39 \times 13 \times 2$ cm).

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Golden Beads

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Golden Bead Thousand Cube



130489 Golden Bead Units 100 ea. Single, in little plastic box.

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130482 Wooden Square of 100 10 ea.

130492 Golden Bead Hundred Square



130483 Wooden Cubes of 1000 10 ea.

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Colden Bead material The "Golden Bead Material" makes the different values of the numbers comprehensible. The numerical values are represented by different amounts of beads. The connection between ones, tens, hundreds, and thousands and thus also the overall connection of the entire decimal system becomes graspable. Even very young children work with large numbers without difficulty and with great interest, starting the moment they are able to count to ten. All basic arithmetic operations can be introduced and reinforced with this material.

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130491 Golden Bead Bars of 10 45 ea In a little wooden box.

130495 Golden Bead chains of 100 10 ea 10 golden bars of ten are joined to a chain of hundred.

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Bead Chains



130496 Golden Bead Chains of 1000 10 golden chains of hundred are joined to a chain of thousand.

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130484 Frames fo Bead Chains

100 and 1000 Chain Frame



130485 Frames fo Bead Chains Short Bead Chains Frame



130511 Printed Arrows for Short Bead Chains

10 sets of colored plastic arrows for different exercises with the short bead chains and 10 little plastic containers for storage.



130512 Printed Arrows for 100/1000

2 sets of colored plastic arrows for different exercises with 100and/or 1000 bead chains and 2 little plastic containers for storage.



130513 Arrows for Complete Bead Materials 20 sets of colored arrows and arrows for singl 6.35 mm, for chains 12.7 mm, for squares 12.7

20 sets of colored arrows and arrows for single beads 6.35 mm, for chains 12.7 mm, for squares 12.7 mm and for cubes 25.4 mm wide. 20 little plastic containers. Warning. Not suitable for children under 3 years. Small parts. Choking risk.

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130515 Bead Decanomial

Wooden box with 55 sets of colored beads form 1 - 10. Dimensions box: 32.5 x 28.5 x 4.5 cm. Warning. Not suitable for children under 3 years. Small spheres. Choking risk.



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A 130524 Dot Exercise B 130525 Dot exercise Sheets, 50 ea. **Dot Game**

In the dot game, the aspect of bundling with in the decimal system is made clear. The children are prepared for calculating without the bead materials. The white work board has a wooden frame and a printed grit. Water-based markers in red and black are included in the shipment.





130519 Arithmetic Signs Box Number cards and 5 sets with the arithmetic operators

+, -, x, :, = as well as the greater/less than signs. In wooden box with lid.

Warning. Not suitable for children under 3 years. Small parts. Choking risk.



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130434 Stamp Game Material for individual adding, subtracting, multiplying and dividing.

Contents: Wodden bin with 6 compartments and stamps (1, 10, 100, 1000) in the colors green, blue and red, as well as little wooden skittles and chips. Warning. Not suitable for children under 3 years. Small parts. Choking risk



C 130442 Hundred Board

Blue wooden board with frame and 100 fields. A two-piece wooden box contains little chips with the numbers from 1 - 100.

D 130443 Control Chart for Hundred Board

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Addition

130487 Addition Snake Game

The child gets an addition problem. According to the problem, the child lays out the bead material in form of a long snake. The confusing amount is then structured and made clear by counting and marking of 10 beads each and subsequent exchanging into golden bead bars of ten. If the amount does not come out even, a black and white bead chain is attached at the end of the snake. This exercise teaches children the bundling into packets of 10 and they gain an insight into the structure of our decimal system. The set contains: 3 little wooden boxes with lids, 5 sets of colored bead stairs, 1 set of black and white bead stairs, 23 golden bars of 10 as well as one plastic chip for counting the beads.

Warning. Not suitable for children under 3 years. Small parts. Choking risk.



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130449 Addition Equations and Sums Box

For laying out the different problems. The little wooden box with lid contains 1 set of little cards with any and all addition problems for the numbers from 1 – 9, 1 set of result cards.

130461 Small Bead Frame

The bead frames represent the place values. This way, numbers can be portrayed by moving the beads. For numbers up to 9999. Contents: Hardwood frame with 4 rows of beads, which represent ones, tens, hundreds and thousands.

130462 Large Bead Frame

The bead frames represent the place values. This way, numbers can be portrayed by moving the beads. For numbers up to 9,999,999. Contents: Hardwood frame with 7 rows of beads, which represent place values from one to one million.



A 130448 Addition Working Charts The set contains: 2 control cards, 4 working charts and a box with result chips.

B 130447 Addition Strip Board

Using the material, the children can lay out all addition problems up to the problem 9+9. The transition to the ten is especially pointed out with a red line. The wooden board has 12 x 18 fields. The top row is numbered from 1 – 18. The 18 strips are of different lengths. The length of the strips is indicated by a numeral in each case. Contents: 1 wooden board, 1 little wooden box with 18 strips.

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Subtraction

130488 Subtraction snake Game

The addition problems are now accompanied by subtractions, which are symbolized by the gray beads. The beads are counted and exchanged into golden bead material. The final result cannot be lower than 0 in this game. The set contains: 4 wooden boxes with colored lids, 10 sets of colored bead stairs, 1 set of black and white bead stairs, 20 golden bars of ten, 5 sets of gray bead chains as well as one plastic chip for counting the beads. Dimensions: Tray 36 x 13 x 4.5 cm, little boxes 11 x 8 x 3.5 cm.

Warning. Not suitable for children under 3 years. Small parts. Choking risk



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130453 Subtraction Equations and Differences Box

For laying out the different problems. The wooden box with lid contains: 1 set of little cards with subtraction problems, 1 set of little result cards.

Warning. Not suitable for children under 3 years. Small parts. Choking risk



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130507 Elementary Negative Snake Game

In this game, the final result can be smaller than 0. The set contains: 6 little wooden box with lids, 5 sets of colored bead stairs, 1 set of black and white bead stairs, 23 golden bars of ten, 5 sets of gray bead chains, 23 bars of ten, 1 set of red and gray bead stairs as well as 3 plastic chips for counting the beads.



Info

Snake Game

The snake game is ideal for introducing addition and subtraction. Using the coloured bead bars and their respective values, addition problems can be solved in a manner that is easy to comprehend for the children: the numerical values (bars), which are to be added, are calculated up to 10, replaced by golden bars of ten and the problem is solved with the subsequent value of the respective single bar, the replacement bars. By and by, the children recognize the values of the bead bars without counting the beads. This way, children move from adding and subtracting by counting to solving the problem by freely calculating it in their heads, learn the tens transitions and the break-down of numbers.

C 130452 Subtraction Working Charts The set contains: 1 control card, 2 working charts and one little box with result chips.

Warning. Not suitable for children under 3 years. Small parts. Choking risk.

D 130451 Subtraction Strip Board

The Set contains: Wooden board with 12×18 fields, 1 wooden box with 9 each blue and red wooden strips in different lengths (from 1 - 9), 18 natural-colored wooden strips of different lengths in a wooden box. The natural-colored strips serve as cover for unused fields, which ensures better orientation on the board.





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Multiplication

130486 Multiplication Snake Game

The child can lay out multiplication problems and combinations of different multiplication problems. The set contains: 3 little wooden boxes with lid on a wooden tray, 5 sets of colored bead stairs, 23 golden bars of ten, black and white bead stairs. Warning. Not suitable for children under 3 years. Small parts. Choking risk.

Pythagoras

A 130445 Pythagoras Board

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The material serves as aid for learning the multiplication table. It consists of a wooden board and a 2-piece wooden box with number chips. The wooden board has a frame and 100 fields, which are set up like a chart. On the same, the number chips with the results are placed. Problems shown on the picture: $1 \times 10 = 10 \times 1$; $2 \times 9 = 0 \times 2$, etc.

Warning. Not suitable for children under 3 years. Small parts. Choking risk

B 130446 Pythagoras Board Control Chart



130456 Multiplication Equations and Products Box

For laying out all problems of the multiplication table from 1 x 1 to 10 x 10. Contents: Little wooden box with lid, 1 set of little cards for all multiplication problems of the multiplication table up to 10×10 , 1 set of result cards.

Warning. Not suitable for children under 3 years. Small parts. Choking risk

C 130455 Multiplication Working Charts Contents: 2 control cards, 3 work cards and a little box with little result cards. Warning. Not suitable for children under 3 years. Small parts. Choking risk.

D 130454 Multiplication Bead Board With this material, all problems of the multiplication table from 1 x 1 to 10 x 10 can be laid out. In doing s

table from 1 x 1 to 10 x 10 can be laid out. In doing so, the multiplier and/or multiplicand is indicated by a red chip and/or a little number tablet that slides in. Problem shown on the picture: 3 x 6. Contents: Wooden board with 100 each red beads and wooden tablets from 1 – 10 as well as one red plastic chip in a plastic container. Dimensions: $25 \times 25 \times 1$ cm. Warning. Not suitable for children under 3 years. Small parts. Choking risk.

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130533 Checker Board With this material, the children can perform and practice multiplications with multi-digit numbers. Dimensions: 80 x 43 x 2 cm, fields 7.5 x 7.5 cm.

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130534 Decimal Checker Board With 49 red, green and brown fields.



130535 Checker Board Beads The wooden bin with lid contains 20 each colored bead chains from 1 – 9. Dimensions of the bin: 22.5 x 21 x 3.5 cm. Warning. Not suitable for children under 3 years. Small spheres. Choking risk.



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Division



130516 Bank Game

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Multiple-player game for up to 5 children. Handling of large numbers, the insight into the decimal system and the multiplication are promoted. Contents: Wooden bin with several compartments. Number cards for the multiplicands from 1 - 9 up to 1000 - 9000, number cards for the multipliers, number cards for the products from 1 - 9 up to 1 - 9 million, name cards for the different roles played by the children.



130457 Division Bead Board

This material enables children to lay out divisions with a maximum dividends of 81 and a maximum divisor of 9. In case of divisions with a remainder, the same will stay on the board as "unfinished row". Contents: Wooden board, 81 green beads and 9 green skittles in plastic container, 1 green plastic cup. Dimensions: $25 \times 25 \times 1$ cm.

Info

Active Learning Leads to Abstract Thinking

It is known from brain research and neurosciences that the human brain is not just storing information, but links data into complex networks. The higher the number of the sensory channels, via which the child is perceiving and making experiences at the same time, the deeper and more linked is the information stored. The later availability is optimally enhanced, when children are looking for and master challenges and tasks based on selfmotivation and own interest. Montessori materials enable children comprehending and active learning in particular. Through the work and experiences with the actual material, children recognize principles and learn abstract thinking.



Division Set

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130526 Long Divsion

With the help of this material, numbers with up to seven digits can be divided by numbers with up to four digits. In addition, the material guides towards the written division. Contents: 4 colored division boards, wooden tray for the 7 stands for the little tubes with beads, 7 cups and 36 skittles. Dimensions: Division boards 25 x 25 x 1 cm, tray 42.5 x 14.5 3 cm, stand 11.5 x 4.5 x 1.5 cm.

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Warning. Not suitable for children under 3 years. Small parts. Choking risk.





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F 130539 Table of Pythagoras A decanomial square laid out with bead strings can be replaced by plastic tablets. While the length of the sides could be determined by counting the beads when using the bead material, this is not possible anymore with the tablets. By this abstraction, a further step towards algebra is made. Wooden bin with squares and rectangles in different colors. Dimensions: 31.5 x 26.5 x 3 cm, smallest square 1 x 1 cm, largest square 10 x 10 cm. Warning. Not suitable for children under 3 years. Small parts. Choking risk.

G 130544 Colored Counting Bars Wooden bin with 20 each colored counting bars ranging in length from 1 to 10. Warning. Not suitable for children under 3 years. Small parts. Choking risk.

H 130545 Cubing Material

Subdivided wooden bin with lid. Contains 1 cube and 27 squares each for every number from 1 to 9. Warning. Not suitable for children under 3 years. Small parts. Choking risk.



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Cube Box



Info

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Prepared Environment

The "prepared environment" should be understood as a learning and development space, which offers stimulation and motivation for the children to use their own initiative. The rooms are designed in a manner that is suited for children's development: furniture and objects are geared towards the needs, size and strength of the children. All materials are freely accessible in open shelves. They are arranged in such a way that they lead the child from easier tasks to increasingly more difficult exercises. Each material has its fixed place, is complete, intact, and only available once. Furthermore, the "prepared environment" means focusing on the essentials. It provides orientation and security to the child. For Maria Montessori, the external order is the basis for finding an "inner order".



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Volume Box

A 130548 Volume Box with 1000 cubes of 1cm each B 130547 Volume Box with 250 cubes of 2 cm each

The natural-colored wooden cubes can be applied in many different ways, as counting material, for laying arithmetic

problems and to calculate surface area and volume.

130498 Colored Bead Chains & Squares One set each of colored bead chains and colored squares for the square numbers from 1 – 10. Warning. Not suitable for children under 3 years. Small parts. Choking risk.

; 130549 Bead Cabinet

This cabinet is "custom-made" for the bead materials. A complete set can be stored well-arranged and easy to reach for children's hands. Dimensions: $115 \times 100 \times 28$ cm.

130514 Complete Bead Materials: Cubes, Squares and Chains

Contains cubes, squares, short and long chains. Please order bead cabinet separately!! Warning. Not suitable for children under 3 years. Small parts. Choking risk.

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