



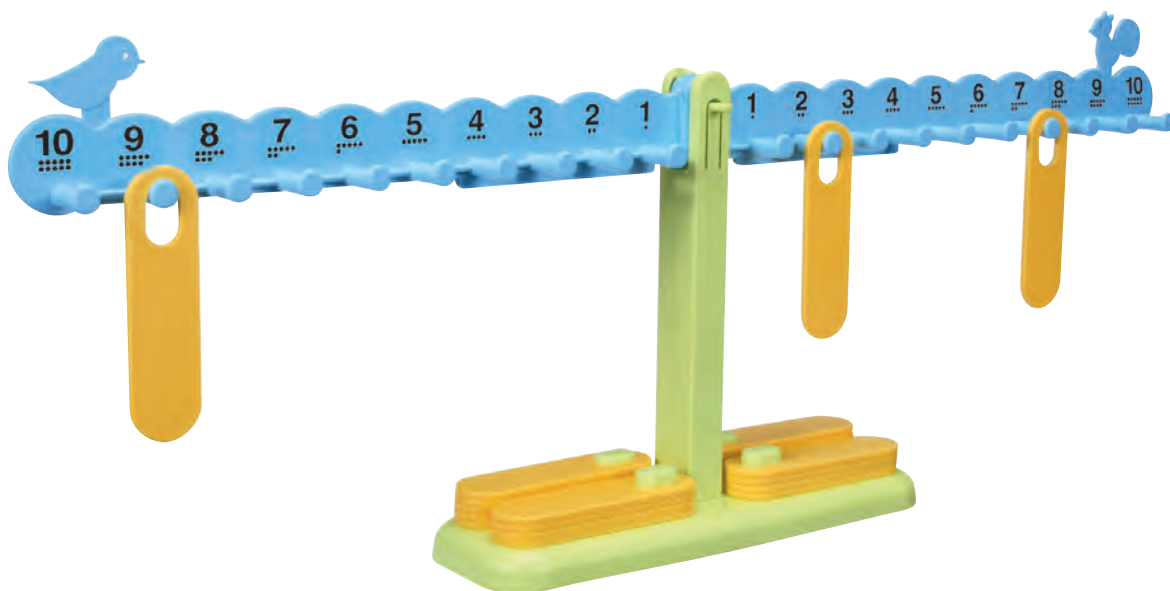
for Supervisors

3+



Guide Book

Please read this guide and keep it for necessary reference.



"Math Balance" is an educational toy. As children play to keep balance with the "Math Balance", they will discover the wonders and delights of numbers. In this way, your child's curiosity for knowledge may be promoted while they have fun learning the "concept of numbers". Understanding of the "concept of numbers" would help lay foundation for arithmetic. Create a number-friendly environment for your child during infancy. Through exposure and experience, infinite possibilities may be drawn from your child. While our goal is set on having the child be able to play the game in their own way, in the beginning we recommend parents teaching, complimenting, and playing along with the child. We hope children will have fun with this educational tool and expand their curiosity for knowledge.

Contents

■ Parts List.....	P.2	■ Combination and Separation.....	P.8-9
■ Setup Procedure/Regulations used in this book		■ Addition/Subtraction	P.10-11
■ Counting/Understand numbers with related numerals (relationship among 3 parties).....	P.3	■ Counting Challenge with equations! Addition/Subtraction	P.12-13
■ Match the same numbers/Comparing numbers (more than / less than).....	P.5	■ Multiplication/Division!.....	P.14
■ Learning number structure with apples.....	P.6-7	■ Paper-Rock-Scissors Game.....	P.15

Parts List

※Check that all parts are included.

◆Right Arm (with Chipmunk) x 1



◆Left Arm (with Bird) x 1



◆Pillar x 1



◆Base x 1



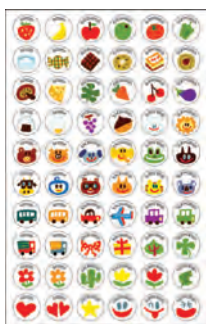
◆Weight x 20



◆Adjuster x 4



◆Score Sticker x 1



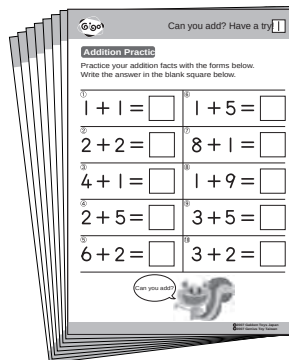
◆Work Card x 50



◆Guide Book x 1

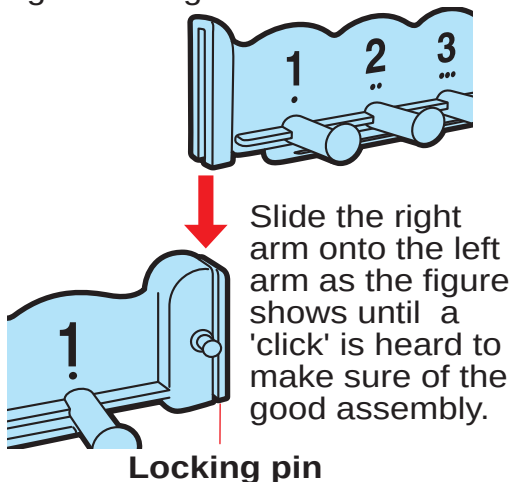


◆Question Sheet x 8

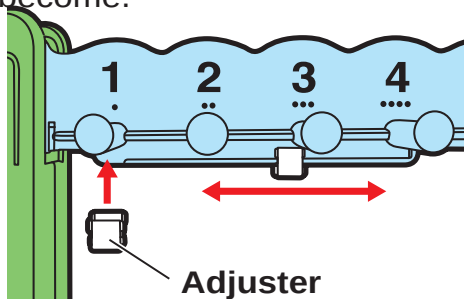


■ Setup Procedure

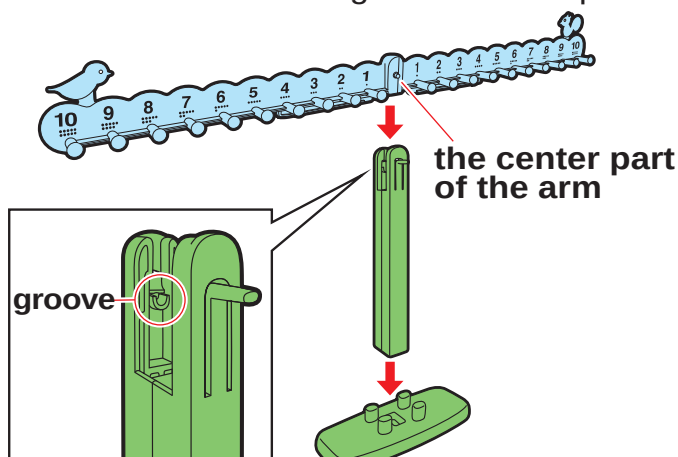
- ① Put left arm and right arm together.



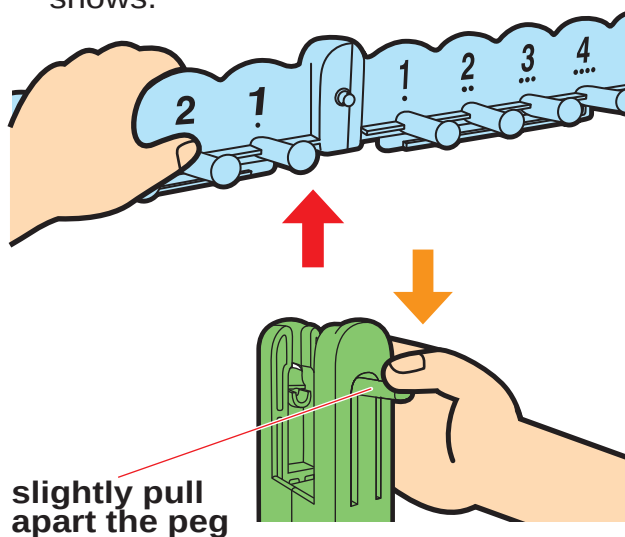
- ③ If the parts are not assembled properly, the right arm and the left arm may not keep balance. Moreover, sometimes the arms may not keep balance even though they are assembled properly. In this case, add on the weight adjusters until they are balanced. The further away it is from the center, the heavier the adjusters become.



- ② Assemble the pillar and the base as the figure shows. Then insert the center part of the arm into the pillar until a 'click' is heard so that the pivots on two sides will sit on the grooves of the pillar.



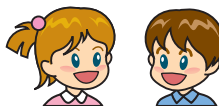
- ④ To disassemble the balance, just slightly pull apart the peg on the pillar and lift up the arm as the figure shows.



Regulations Used in This Book



Black fonts:
Performed by the supervisor



Blue fonts:
Performed by the child

■ Items to be Used = items to be prepared in advance

Target = the points to be learned.

How to Play = to show the ways and the steps to play in details.

Tutorial Tips = tips for tutors

Counting

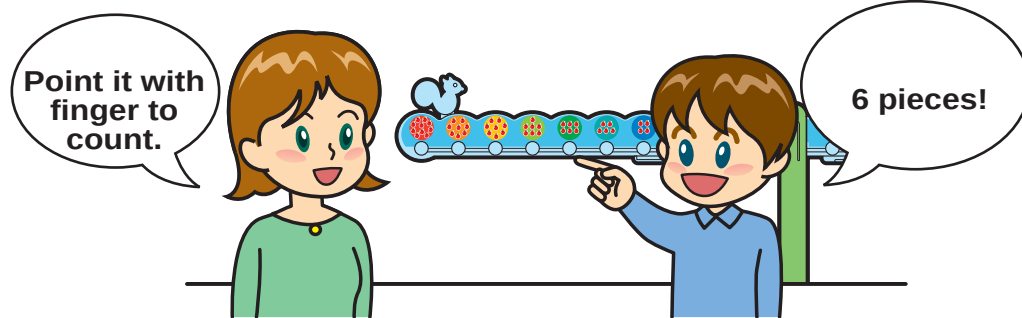
Items to be Used

Main body (the side with apples)

Target Learn to count regularly.

How to Play Count apples by pointing them with finger and say the number loudly at the same time.

- ① Ask "How many apples are there?".
- ② Count the apples and say the number.
- ③ If the answer is correct, compliment the child.



Tutorial Tips

Here the “pieces” are used to help count.

Understand numbers with related numerals. (relationship among 3 parties)

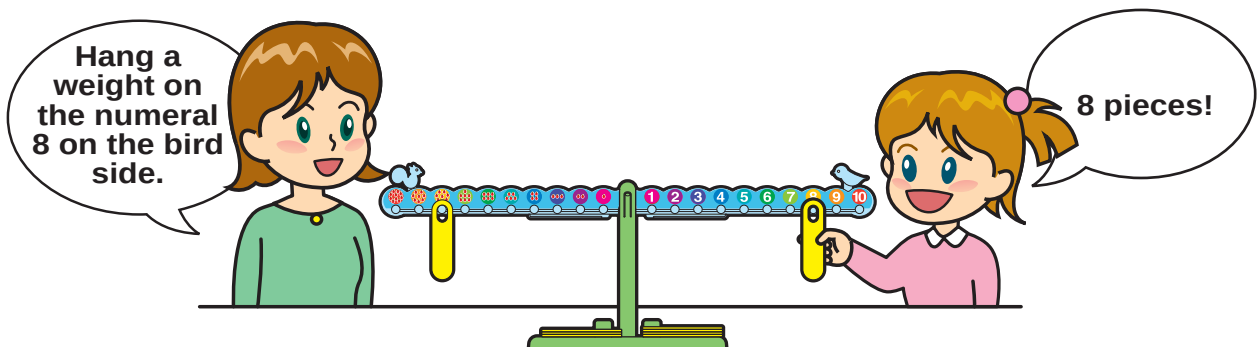
Items to be Used

Main body (the side with pictures)
Weight x 2 pieces

Target To understand the relationship between numbers and numerals,

How to Play Find a numeral on the bird side that matches the number on the apple side.

- ① Hang a weight on the apple side and ask "Which numeral on the bird side matches the number of apples? Hang a weight on it".
- ② Hang a weight on the matched numeral on bird side.
- ③ If balance is kept, the answer is correct. If the answer is correct, compliment the child.



Tutorial Tips

The sequence of children's comprehension goes from “the number of concrete objects (such as apples)” to “the number of semi-concrete objects (such as dots)” and to “numerals”. Learn it by repeatedly practicing.

Match the Same Numerals

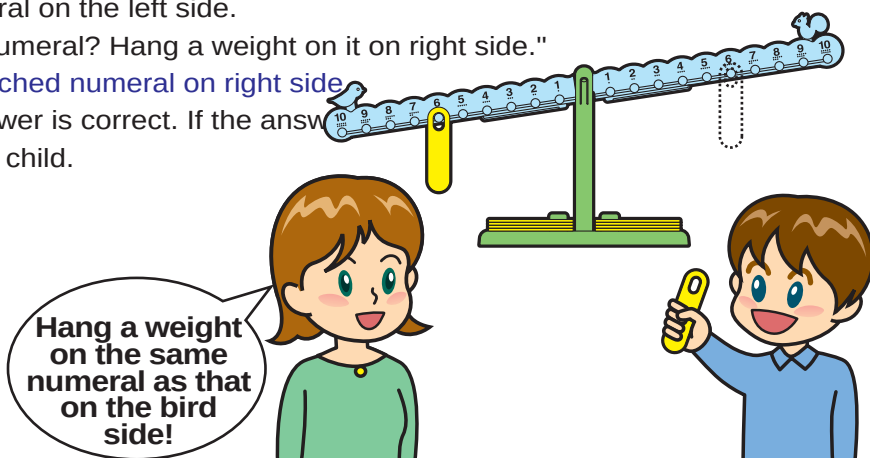
Target Match the same numeral and read it.

Items to be Used

Main body (the side with numerals)
Weight x 2 pieces

How to Play Hang a weight on the same numeral as that on the left side.

- ① Hang a weight on a numeral on the left side.
Ask "Which is the same numeral? Hang a weight on it on right side."
- ② Hang a weight on the matched numeral on right side.
- ③ If balance is kept, the answer is correct. If the answer is correct, compliment the child.



Tutorial Tips

Be able to read numerals without counting concrete objects like apples.

Comparing Numbers (more than / less than)

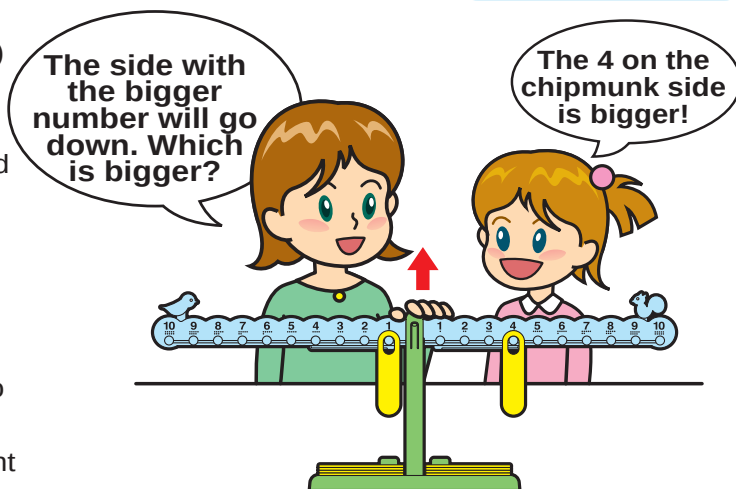
Target Compare various numbers to see "more and less"

Items to be Used

Main body (the side with numerals)
Weight x 2 pieces

How to Play (For example: compare 1 and 4)

- ① Put your hand on the center of the balance to keep it balance and hang a weight on 1 on left side and another weight on 4 on right side.
"Which is the bigger number?"
- ② Say the bigger number.
- ③ Move your hand away from the balance to check the answer. The side with the bigger number will go down.
If the answer is correct, compliment the child.



Tutorial Tips

Ask "Which is smaller?" along with "Which is bigger?"
We use "bigger / smaller" to compare numerals, but to make it easier for understanding "more/less" is used instead.

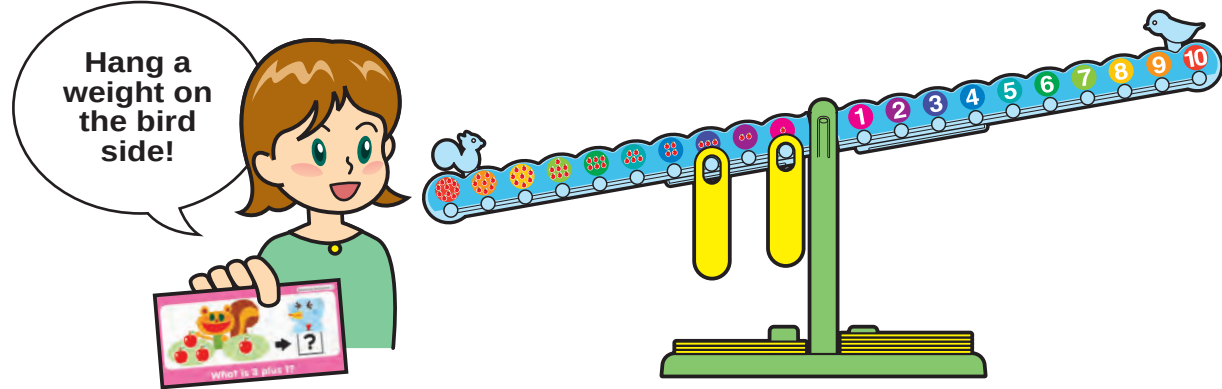
Learning number structure with apples

- Items to be Used
 - Main body (the side with apples)
 - Weight x 3 pieces
 - Work cards (pink) x 5 pieces
 - Score sticker

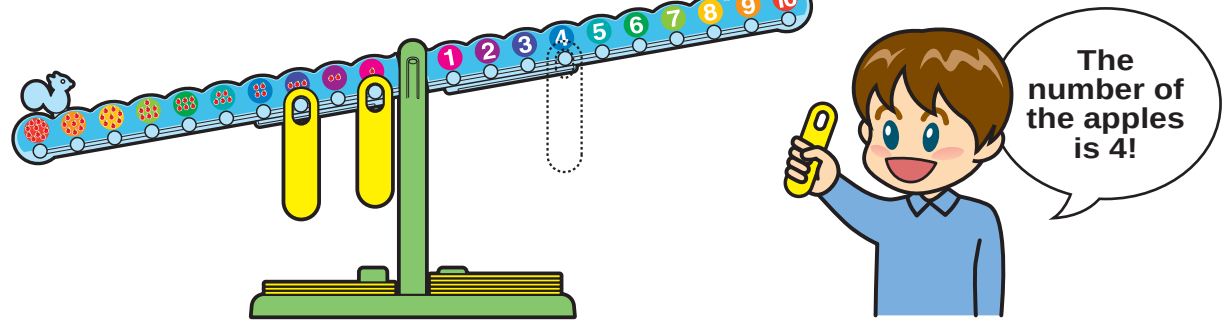
Target Use apples (concrete object) to learn number structure.

How to Play 1 (combination) (For example: What is $\text{apple} + \text{apple} + \text{apple}$ plus apple ?)

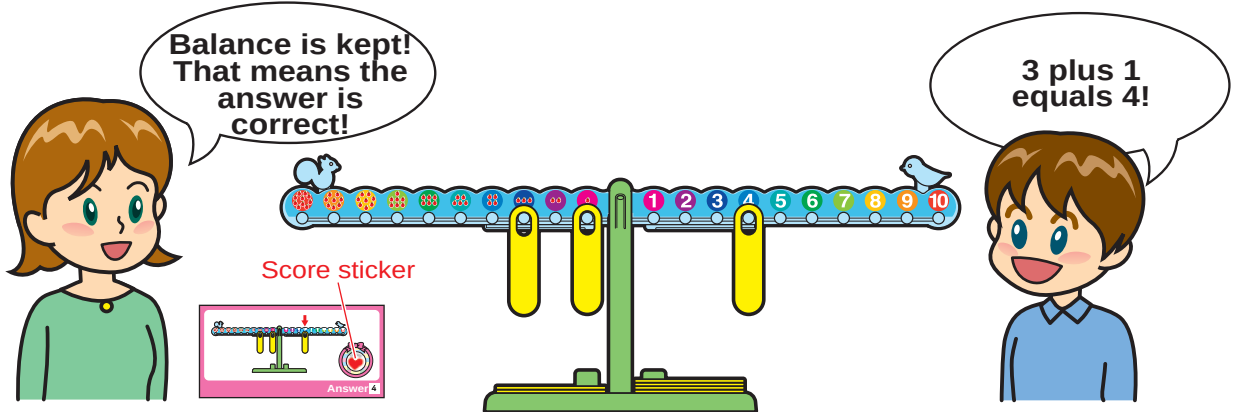
- ① While showing the pink card, hang two weights on 3 apples and 1 apple on the chipmunk side.
Ask "What is 3 plus 1?"



- ② Hang a weight on the answered numeral on the bird side.



- ③ Check the answer on the back of the card.
If the answer is correct, put a proper score sticker on the card and compliment the child.



How to Play 1 (separation)

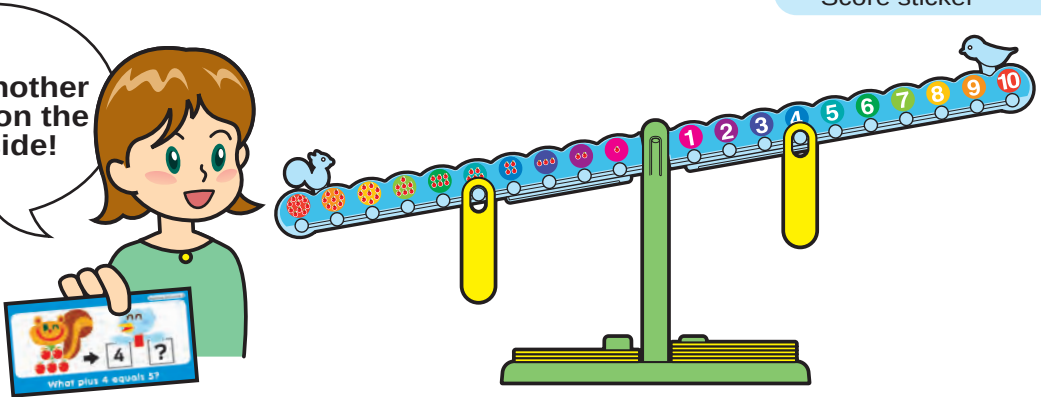
(For example: What plus 4 equals 5? )

■ Items to be Used

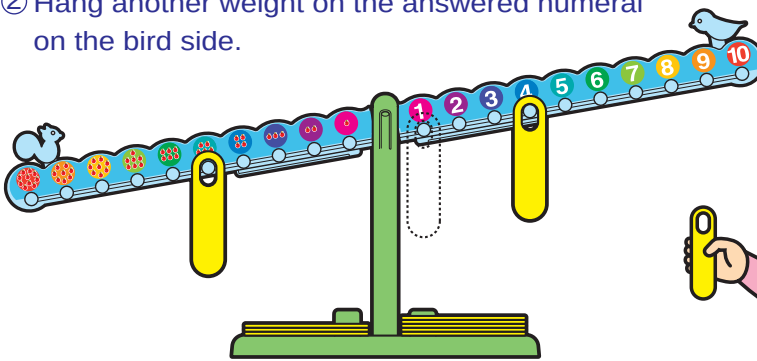
Main body (the side with numerals)
Weight x 3 pieces
Work card (blue)
x 5 pieces
Score sticker

- ① While showing the blue card, hang one weight on 5 apples on the chipmunk side and another weight on the numeral 4 on the bird side. Ask "What plus 4 equals 5?"

Hang another weight on the bird side!



- ② Hang another weight on the answered numeral on the bird side.



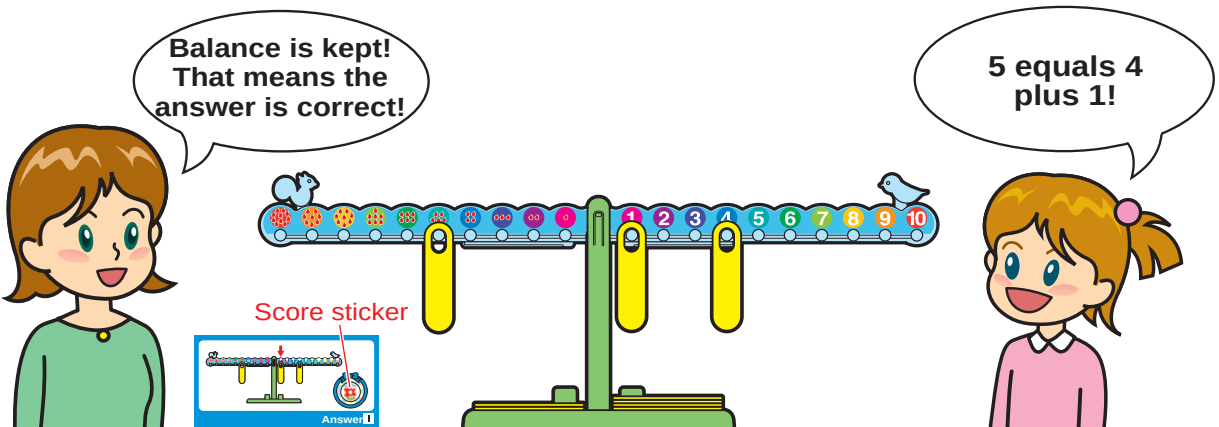
The number of the apples is...

- ④ Check the answer on the back of the card.

If the answer is correct, put a proper score sticker on the card and compliment the child.

Balance is kept!
That means the answer is correct!

5 equals 4 plus 1!



Tutorial Tips

Before learning the combination and separation of numbers, let the child experience the number structure with apples (concrete object).

■ Combination and Separation

Target Learn the combination and separation of numbers.
Understand numerals and learn how to operate numbers.

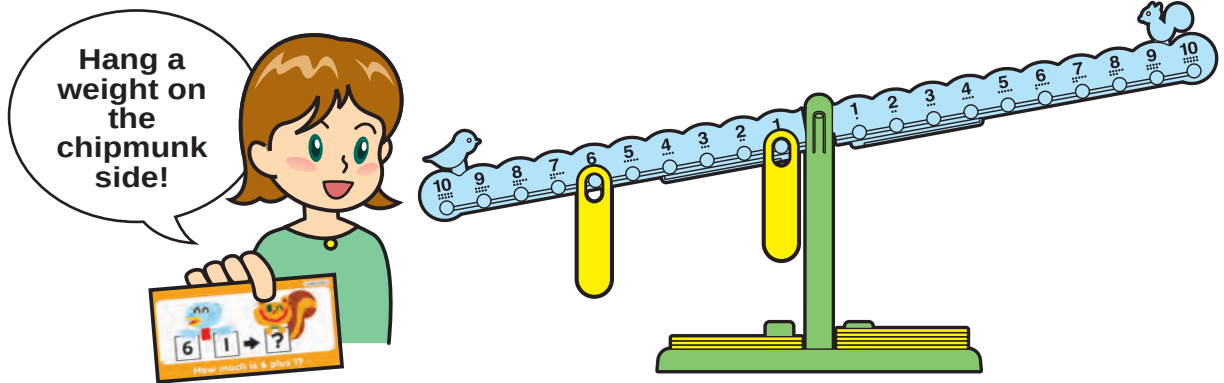
■ Items to be Used

Main body (the side with numerals)
Weight x 3 pieces
Work card (orange)
x 5 pieces
Score sticker

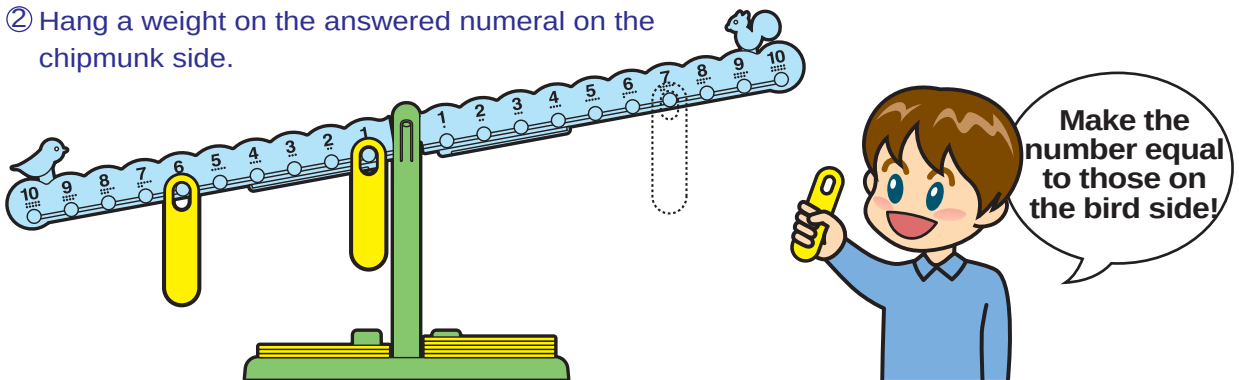
How to Play 1 (combination)

(For example: How much is 6 plus 1?)

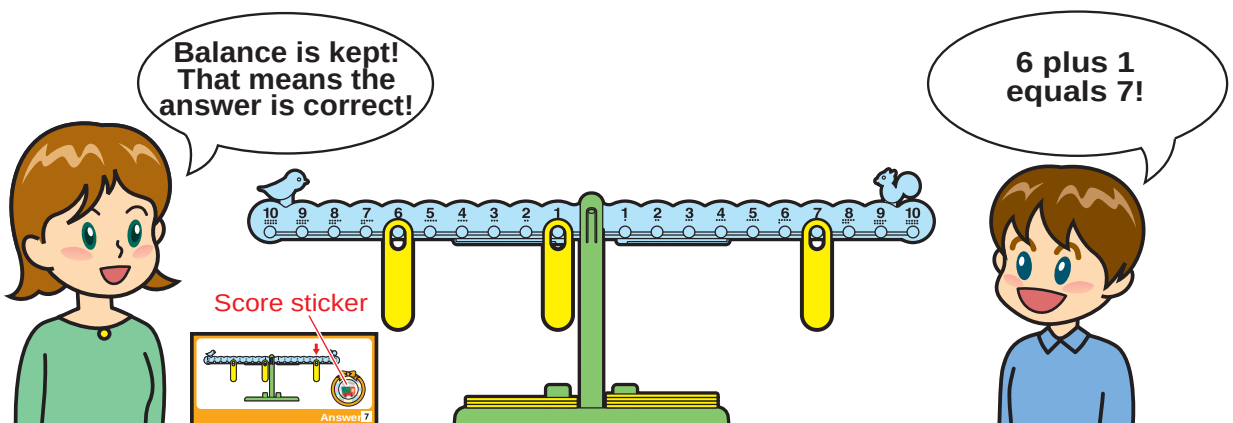
- ① While showing the orange card, hang two weights on 6 and 1 on the left side.
Ask "How much is 6 and 1?"



- ② Hang a weight on the answered numeral on the bird side.



- ③ Check the answer on the back of the card.
If the answer is correct, put a proper score sticker on the card and compliment the child.



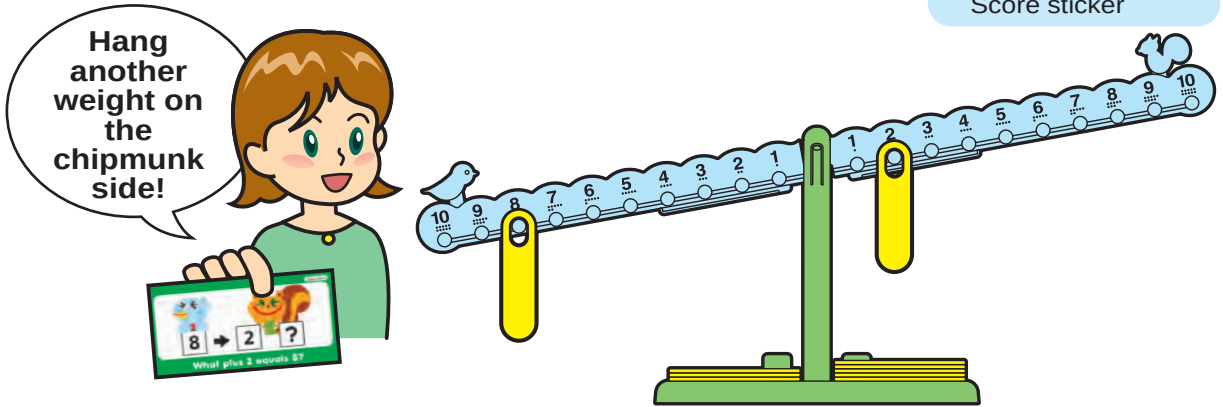
How to Play 2 (Subtraction)

(For example: What plus 2 equals 8?)

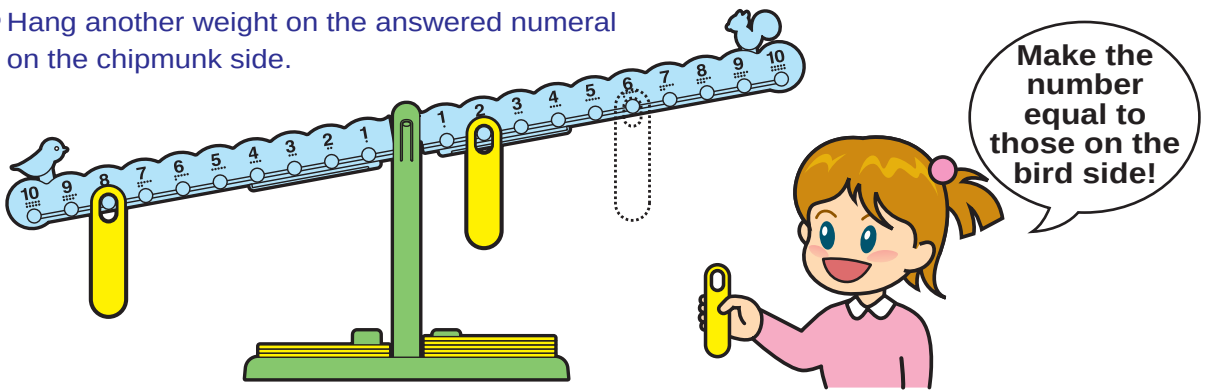
Items to be Used

Main body (the side with numerals)
Weight x 3 pieces
Work card (green)
x 5 pieces
Score sticker

- ① While showing the green card, hang one weight on the numeral 8 on the bird side and another weight on the numeral 2 on the chipmunk side. Ask "What plus 2 equals 8?"

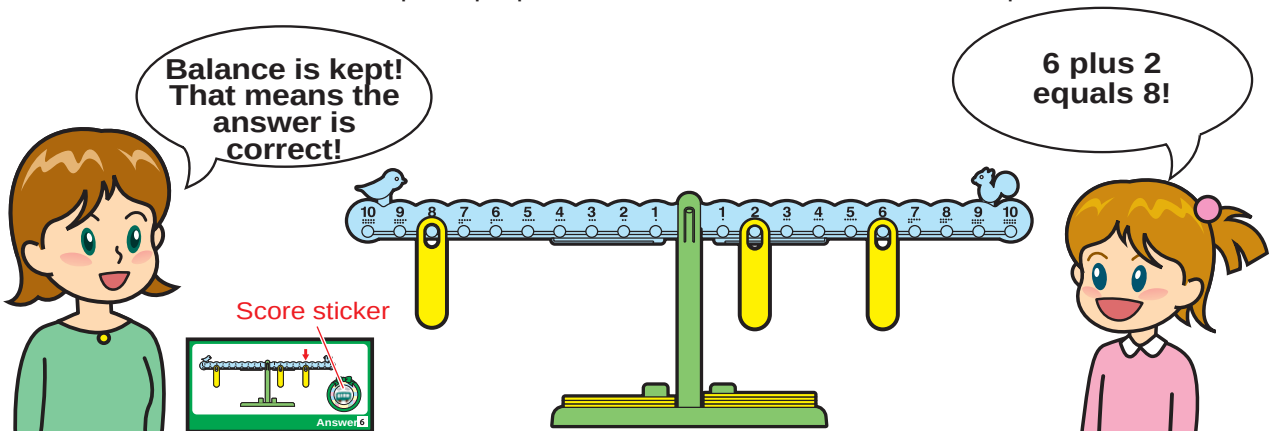


- ② Hang another weight on the answered numeral on the chipmunk side.



- ③ Check the answer on the back of the card.

À@If the answer is correct, put a proper score sticker on the card and compliment the child.



Tutorial Tips

By combining and separating numbers, the child will learn how to operate numbers. This lays foundation for addition, subtraction, multiplication, and division operations he will learn hereafter. Ask questions that are not on the cards as well.

■ Addition/Subtraction

Target Before working on equations, use pictures to get a sense of addition and subtraction.

■ Items to be Used

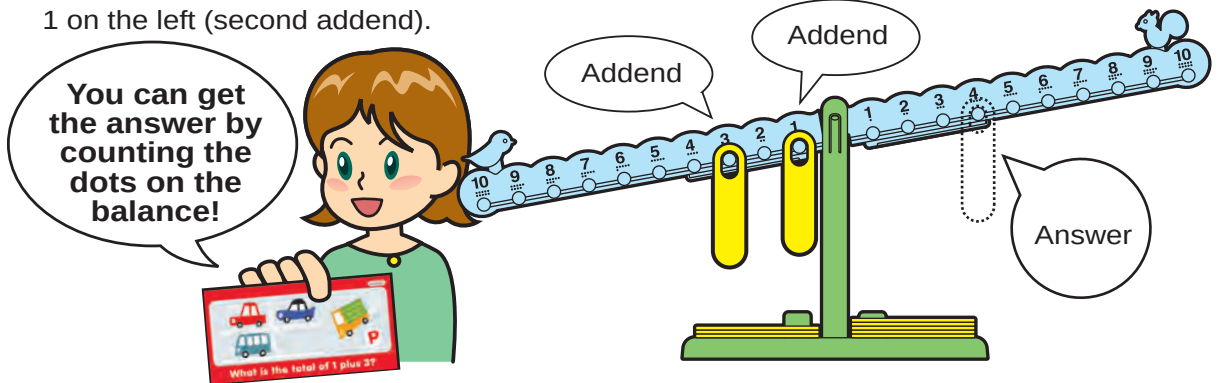
Main body (the side with numerals)
Weight x 3 pieces
Work card (red)
x 5 pieces
Score sticker

How to Play 1 (Addition)

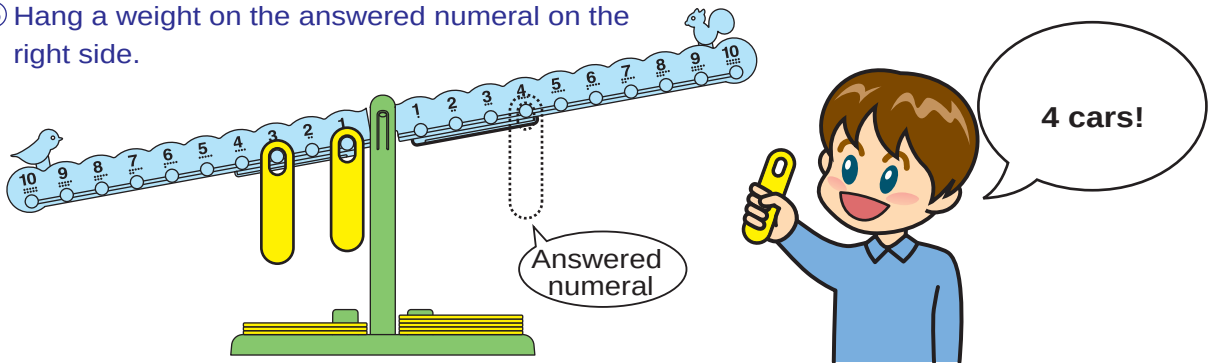
Use Math Balance to solve the problem on the card.

(For example: the number of cars)

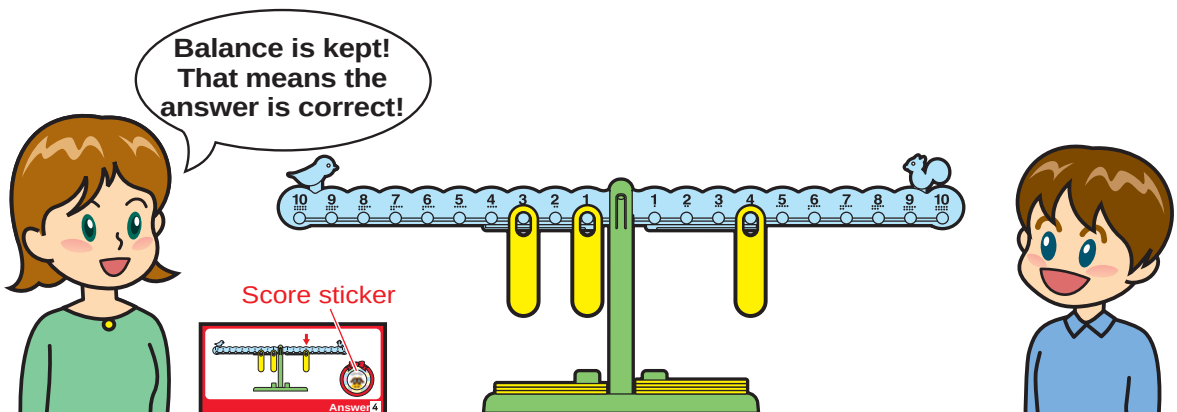
- ① Let your child know that the weights representing the two addends should be hung on the left, while the one representing the answer (the sum) should be on the right.
- ② Say "There are 3 cars parked in the parking lot", and hang a weight on 3 on the left (first addend).
Say "If 1 more car is parked here, what will be the total cars?", and hang another weight on 1 on the left (second addend).



- ③ Hang a weight on the answered numeral on the right side.



- ④ Check the answer on the back of the card. If the answer is correct, put a proper score sticker on the card and compliment the child.



How to Play 2 Subtraction

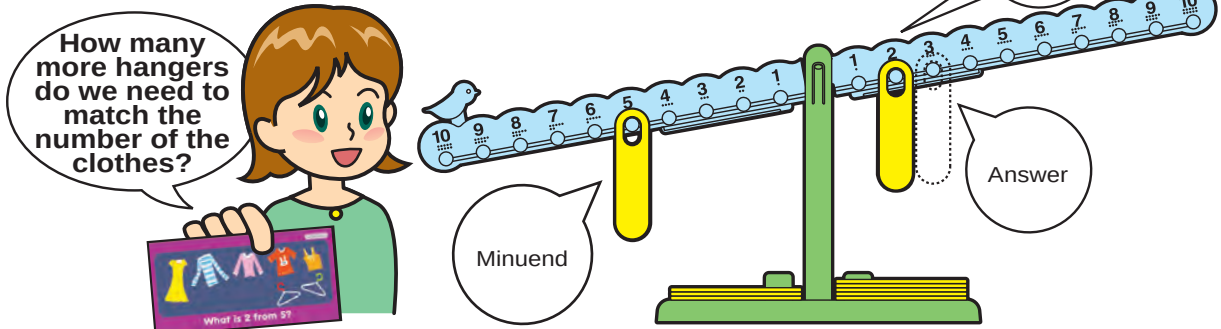
Use the balance to solve the problem on the card.

Items to be Used

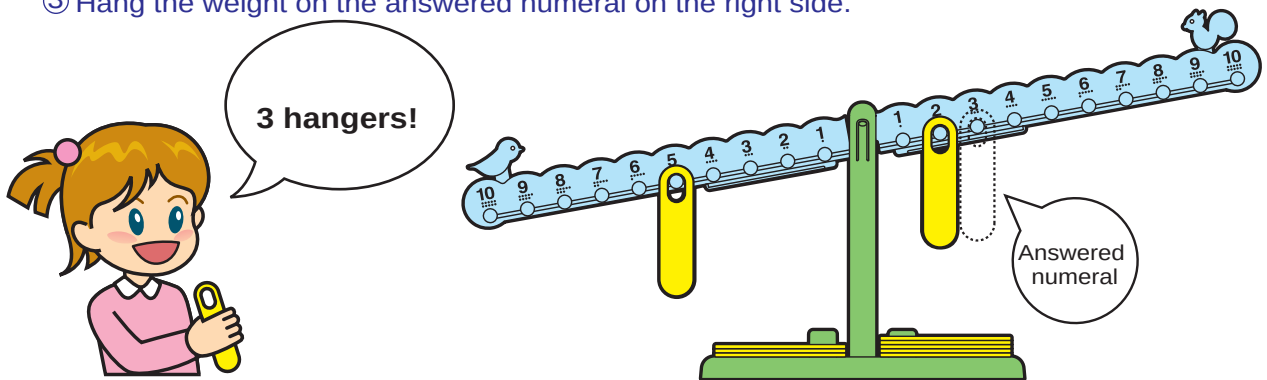
Main body (the side with numerals)
Weight x 3 pieces
Work card (purple)
x 5 pieces
Score sticker

(For example: the number of clothes and hangers)

- Let your child know that the weight representing the minuend should be hung on the left, while the ones representing the subtrahend and the answer (the difference) should be on the right.
- Say "There are 5 clothes", and hang a weight on 5 on the left side (minuend). Say "There are 2 hangers", and hang another weight on 2 on the right side (subtrahend). Ask "How many more hangers do we need?"

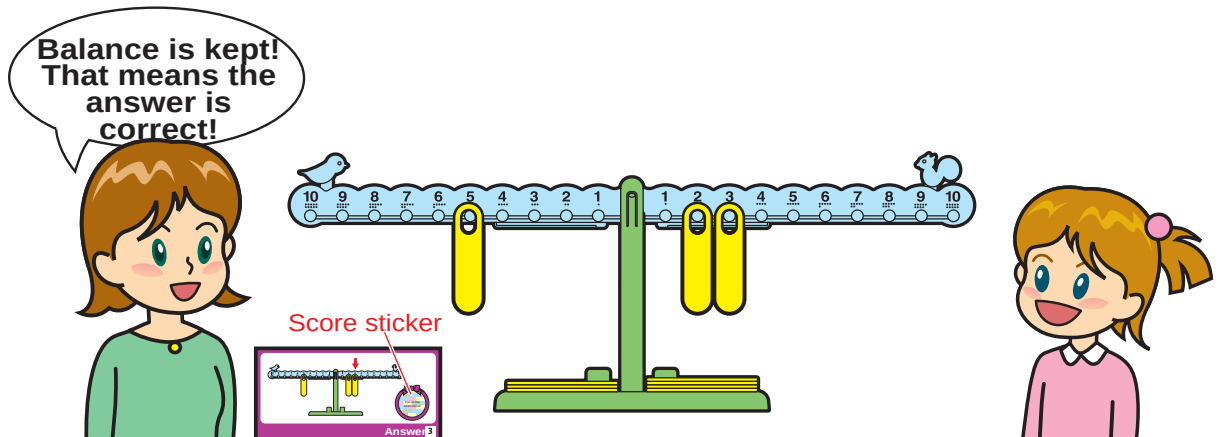


- Hang the weight on the answered numeral on the right side.



- Check the answer on the back of the card.

If the answer is correct, put a proper score sticker on the card and compliment the child.



Tutorial Tips

Teach your child the elements of addition (add, combine) and subtraction (difference, lack, decrease) in everyday life.

Counting Challenge with equations! Addition/Subtraction

Target Operate addition and subtraction with equations.

Addition

- ① Answer the questions of the addition facts on the question sheets.
- ② Check the answers in the chart below.

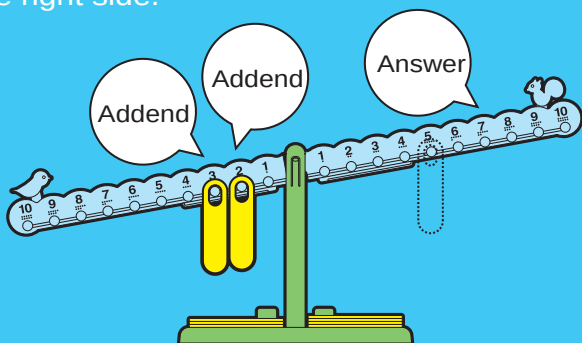
■ Items to be Used
Main body (the side with numerals)
Weights
Question Sheet (addition)
x 4 pieces

Answers to the addition facts on the question sheets.

1		2		3		4	
① 2	⑥ 6	① 7	⑥ 12	① 6	⑥ 17	① 3	⑥ 14
② 4	⑦ 9	② 10	⑦ 8	② 6	⑦ 14	② 7	⑦ 12
③ 5	⑧ 10	③ 6	⑧ 10	③ 8	⑧ 15	③ 8	⑧ 15
④ 7	⑨ 8	④ 9	⑨ 13	④ 9	⑨ 18	④ 11	⑨ 11
⑤ 8	⑩ 5	⑤ 9	⑩ 12	⑤ 10	⑩ 13	⑤ 16	⑩ 13

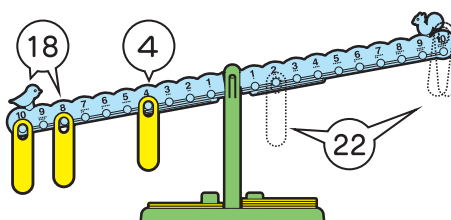
5		6		7		8	
① 5	⑥ 3	① 7	⑥ 8	① 4	⑥ 10	① 10	⑥ 18
② 3	⑦ 6	② 9	⑦ 6	② 6	⑦ 24	② 7	⑦ 12
③ 11	⑧ 9	③ 11	⑧ 10	③ 9	⑧ 15	③ 10	⑧ 20
④ 15	⑨ 10	④ 12	⑨ 22	④ 14	⑨ 20	④ 13	⑨ 25
⑤ 12	⑩ 9	⑤ 15	⑩ 25	⑤ 13	⑩ 18	⑤ 12	⑩ 21

Operate the addition equation on the balance. (For example: $3+2=5$)
The two addends should be placed on the left side, while the answer on the right side.



Addition with numbers bigger than 10

For example: $18+4=22$



Subtraction

- ① Answer the questions of the subtraction facts on the question sheets.
- ② Check the answers in the chart below.

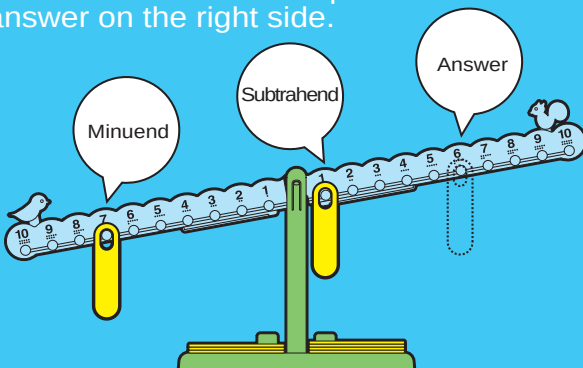
■ Items to be Used
Main body (the side with numerals)
Weights
Question Sheet (subtraction) x 4 pieces

Answers to the subtraction facts on the question sheets.

9		10		11		12	
① 1	⑥ 5	① 2	⑥ 1	① 1	⑥ 10	① 7	⑥ 5
② 3	⑦ 3	② 3	⑦ 5	② 4	⑦ 2	② 4	⑦ 10
③ 1	⑧ 4	③ 5	⑧ 3	③ 6	⑧ 11	③ 3	⑧ 14
④ 2	⑨ 6	④ 1	⑨ 1	④ 5	⑨ 15	④ 3	⑨ 10
⑤ 4	⑩ 7	⑤ 2	⑩ 6	⑤ 9	⑩ 43	⑤ 7	⑩ 17

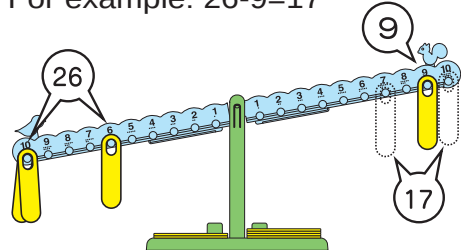
13		14		15		16	
① 8	⑥ 10	① 1	⑥ 14	① 2	⑥ 10	① 1	⑥ 7
② 4	⑦ 7	② 2	⑦ 8	② 1	⑦ 10	② 1	⑦ 43
③ 2	⑧ 13	③ 2	⑧ 20	③ 2	⑧ 3	③ 5	⑧ 12
④ 1	⑨ 15	④ 2	⑨ 2	④ 3	⑨ 16	④ 2	⑨ 4
⑤ 8	⑩ 23	⑤ 5	⑩ 56	⑤ 1	⑩ 4	⑤ 1	⑩ 11

Operate the subtraction equation on the balance. <For example: $7-1=6$ >
The minuend should be placed on the left side, while the subtrahend and the answer on the right side.



Subtraction with numbers bigger than 10

For example: $26-9=17$



Tutorial Tips

Before tackling the questions, teach your child to recognize and read the symbols '+', '-', '='.

■ Multiplication/Division!

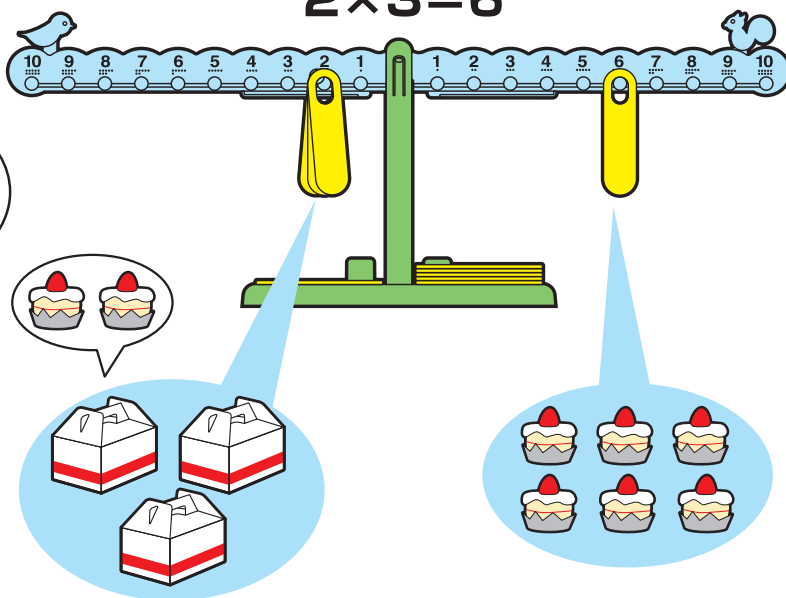
Target Understand the meaning of multiplication and division.

■ Items to be Used

Main body (the side with numerals)
Weight x 20 pieces

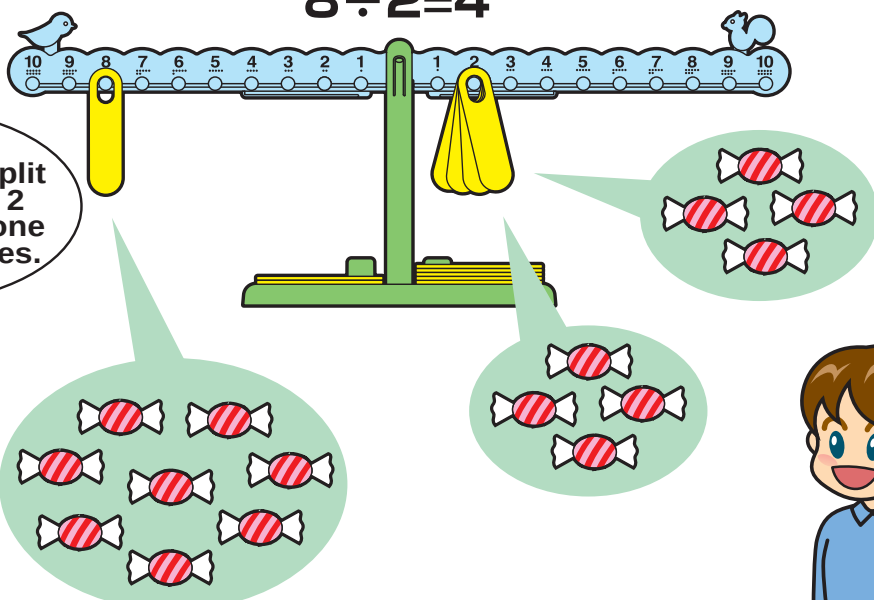
Multiplication

$$2 \times 3 = 6$$



Division

$$8 \div 2 = 4$$



Tutorial Tips

Multiplication is taught in Grade 2 and division in Grade 3.
Teach your child how to use multiplication and division in everyday life.
Give them a lot of examples to experiment.

■ Paper-Rock-Scissors Game (for two persons)

The winner of paper-rock-scissors game gets to hang a weight on his side of the balance.

When all 10 weights are used up, the person with the bigger number wins.

- ① Place 10 weights in the center. Decide who will be on the bird side, and who will be on the chipmunk side.
- ② The person who wins the paper-rock-scissors game may take a weight from the center and hang it on his own side.

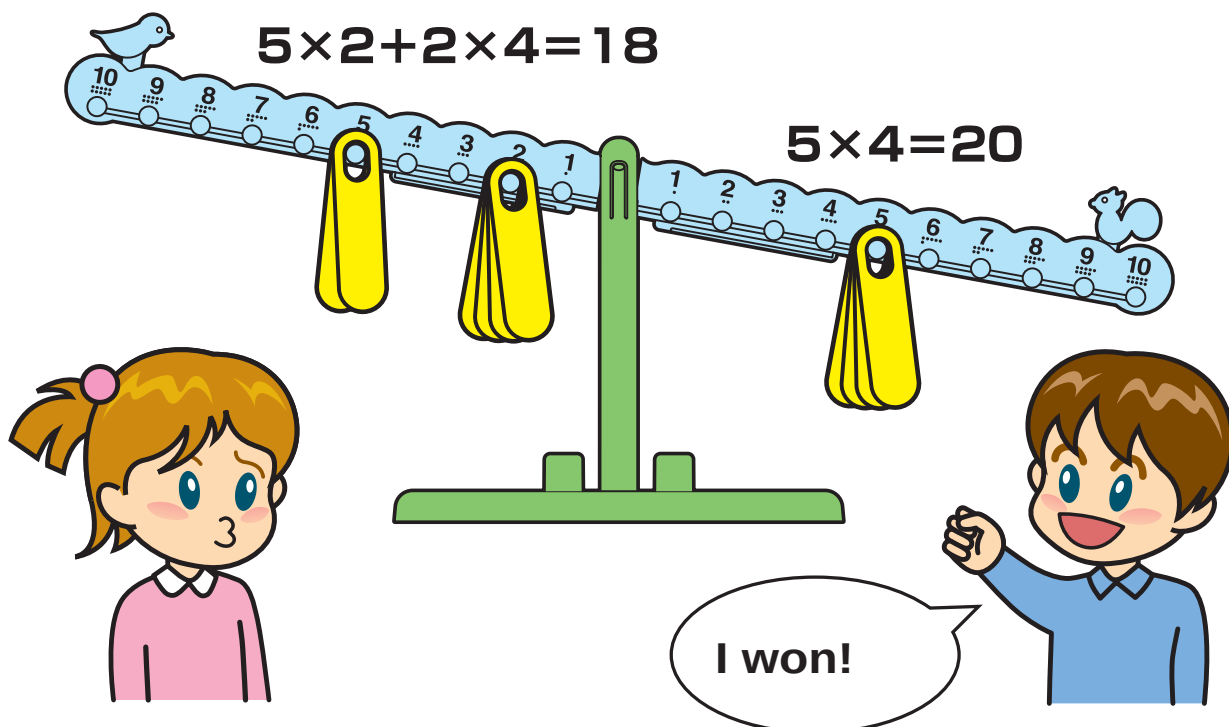
■ Items to be Used

Main body (the side with numerals)
Weight x 10 pieces

(Paper-Rock-Scissors Game Rule)

	If win with scissors!	Hang a weight on 2.
	If win with paper!	Hang a weight on 5.
	If win with rock!	Take away a weight on 5 on your opponent side. If your opponent side does not have any one on 5, then you get nothing.

- ③ When all weights are used up, the game is over.
- ④ The person who gets higher score wins.
The balance side with higher score will go down.
Score calculation is another challenge!







work with adults



do not swallow



keep away from fire



do not ride

⚠ WARNING

For Supervisors

- Hair or finger getting caught between pillar and arm may result in unexpected injury.
- Letting children operate the product alone may result in unexpected injury. Use only with adult / **supervisor**.
- Improper usage may cause unexpected injury. Do not give the product to under-aged children.
- This product **contains small** parts. Do not allow children to swallow them. Suffocation may result.
- For your safety, keep the product away from fire.
- Do not allow children to ride on or lean against the product. It may topple and result in unexpected injury.
- It is extremely dangerous to throw the product at anyone or anything.
- For your safety, do not use if the product has been damaged or deformed.

Notes on Usage

- In the case where the arms do not balance horizontally, check that the arms, pillar, and base are assembled firmly. The arms may not balance horizontally if not assembled firmly.
- Due to the nature of the product, sometimes the arms may not balance horizontally even when assembled correctly. If this is the case, use the enclosed weight adjusters to keep balance.
- After opening the package, dispose of all packing material to an appropriate location.
- For the product to work properly, please play it only when the balance is in horizontal condition.



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