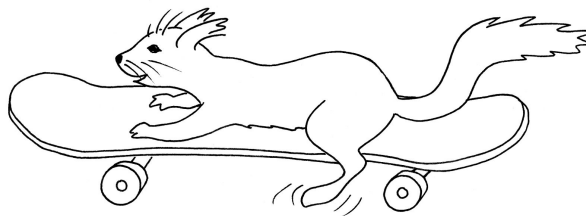




MATHEMATICAL RELATIONAL SKILLS AND COUNTING 0-10



MATHEMATICAL RELATIONAL SKILLS AND COUNTING 0–10

The "Mathematical relational skills and counting 0–10" material contains 15 teaching sessions for practicing mathematical relational skills, counting sequence skills, and object counting. Particularly practicing different number sequences and quantity-number word-number symbol correspondence is emphasised.

The teaching sessions are designed to be held in small groups of 2–6 children. One teaching session lasts approximately 30–45 minutes. Each session consists mainly of active, teacher-lead activity, work in pairs or small groups, and written individual practice.

Italicised sentences are suggestions for teacher's verbal descriptions of the tasks or guidance for the children's work. It is not necessary to use them as written, but rather, they are meant as illustrating the thinking behind the task for the reader.

Core aims

- strengthening mathematical relational concepts
- comparing quantities and number symbols
- listing different counting sequences fluently both forwards and backwards in the number range 0–10
- strengthening the quantity-number word- number symbol correspondence
- strengthening shortened counting (the quantities do not always have to be counted one-by-one)
- strengthening the principles of counting: one-to-one correspondence, cardinality
- utilising fingers and structured dot cards systematically in illustrating quantities

Materials needed

- small objects (e.g., blocks, buttons, macaroni, or similar)
- objects found in the classroom (e.g., pencils, paper clips, etc.)
- building bricks that can be attached to each other (e.g., Multilink)
- counters
- dice
- an egg box (10 cups) for each child, and one divided lengthwise (5 cups)
- paper plates
- empty milk- or juice cartons
- a transparent box or glass bottle
- an opaque cardboard or plastic box
- string and 10 clothes pegs
- dot cards and number cards, game boards, and task sheets (downloadable from the ThinkMath web site)

TEACHING SESSIONS

| | Core content | Materials needed | Page |
|---------------------------|--|---|------|
| TEACHING SESSION 1 | Number range 0–3 - classification - quick recognition of small quantities | - small objects - paper plate - opaque box - half an egg box (5 cups) /child - dice and counters - Attachments: Dot cards 1–3, Pictures of objects for classification, "Recognise quantities" game | 4 |
| TEACHING SESSION 2 | Number range 0–5 - quick recognition of small quantities - counting quantities - comparing quantities - right-left | - dice and counters - Attachments: Dot cards 1–3, Hand pictures, Right-left animal game - Worksheet: Counting quantities 1–3 | 8 |
| TEACHING SESSION 3 | Number range 0–5 - verbal counting 1–5 - number word-quantity correspondence - showing quantities with fingers | - dice and counters - Attachments: Number rhyme card 1–5, Goal game - Worksheet: Counting quantities 1–5 | 11 |
| TEACHING SESSION 4 | Number range 0–5 - one-to-one correspondence, cardinality - quantity-number word-number symbol correspondence | - empty milk- or juice carton - small objects - paper plate - transparent box - dice - Attachments: Number cards 1–5, Number rhyme card 1–5 - Worksheet: Quantities and number symbols A | 15 |
| TEACHING SESSION 5 | Number range 0–5 - one-to-one correspondence, cardinality - object counting (structured counting) - quantity-number word-number symbol correspondence | - half an egg box (5 cups) /child - small objects - dice and counters - Attachments: Number cards 1–5, "Recognise the Number" game - Worksheet: Quantities and number symbols B | 18 |
| TEACHING SESSION 6 | Number range 0–5 - object counting - quantity-number word-number symbol correspondence - comparing quantities | - building bricks (e.g., Multilink) - paper plates Attachments: Number cards 1–5, Dot cards 1–5 - Worksheet: Quantities and number symbols C | 22 |
| TEACHING SESSION 7 | Number range 0–5 - comparing quantities, introducing the comparison sign - object counting | - building bricks (e.g., Multilink) - paper plates - dice - sticks or similar for counting dots - Attachment: Crocodile and bird - Worksheet: Comparing quantities | 26 |
| TEACHING SESSION 8 | Number range 0–5 - comparing quantities, introducing the comparison sign - object counting | - two paper plates - small objects - sticks - Attachment: Number cards 1–5 - Worksheet: Comparing numbers | 29 |
| TEACHING SESSION 9 | Number range 0–5 - number sequence 0–5, previous and subsequent numbers - ordinal numbers 1.–5. - comparisons with quantities | - building bricks (e.g., Multilink) - multi-level car park built with milk cartons - dice - small objects - Attachment: Number cards 1–5 - Worksheet: Ordinal numbers 1.–5., Every 2. and 3. | 32 |

| | | | |
|----------------------------|---|---|----|
| TEACHING SESSION 10 | Number range 0–10 - number sequence 1–10 - object counting - quantity-number word correspondence - showing quantities with fingers | - counters for Bingo - Attachments: Number rhyme card 5–10, Bingo boards 1 and 2 - Worksheet: Structuring numbers by fives | 35 |
| TEACHING SESSION 11 | Number range 0–10 - object counting - quantity-number word-number symbol correspondence - comparing quantities | - objects (for details, see TS11) - small objects - paper plates - sticks - Attachments: Number cards 1–10, Bingo board 1 or 2 - Worksheet: Quantity-number symbol 6–10 A | 39 |
| TEACHING SESSION 12 | Number range 0–10 - number sequence 1–10 forwards and backwards, skip-counting by 2's - missing number in a number sequence (quantities and numbers) | - building bricks that can be attached to each other (e.g., Multilink) - number symbols 1–10 written on coloured paper (for details, see TS12) - string and 10 clothes pegs - Attachment: Number cards 1–10 - Worksheet: Dot-to-dot | 42 |
| TEACHING SESSION 13 | Number range 0–10 - ordinal numbers 1.–10. - object counting (structured counting) - quantity-number word-number symbol correspondence - comparing quantities | - building bricks that can be attached to each other (e.g., Multilink) - small toy character (e.g., lego man) - egg box (10 cups) /child - small objects - Attachment: Number cards 1–10 - Worksheet: Quantities 6–10 | 45 |
| TEACHING SESSION 14 | Number range 0–10 - quick recognition of quantities (shortened counting) - quantity-number symbol correspondence | - Attachments: Dot cards 1–10, Number cards 1–10 - Worksheet: Quantity-number symbol 6–10 B | 48 |
| TEACHING SESSION 15 | Number range 1–10 - comparing quantities - quantity-number word-number symbol correspondence - recognising number symbols | - Attachments: Ghosts, Number cards 1–10, (Dot cards 1–10) - Worksheet: Quantity-number symbol 1–10 | 51 |

TEACHING SESSION 1

TEACHER-DIRECTED WORK

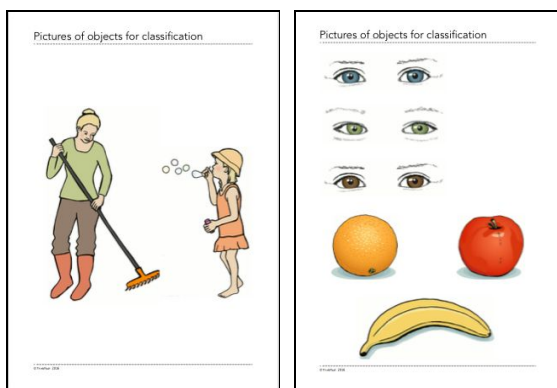
TASK 1. Classification of objects

AIMS

- object counting
- classification
- concepts: more, less/fewer than, most, least, as many as

EQUIPMENT

- Attachment: Pictures of objects for classification
- A whiteboard magnet or object for each child



TASK PROCEDURE

Getting to know the members of the small group through different classification tasks.

A) Adults and children. A picture of an adult and a child is put on the whiteboard, table, or the floor. Each child and adult puts their object under the picture that represents the group to which they belong. *How many children? How many adults? Which are there more of, adults or children? Of which are there fewer? How many more children are there than adults?*

B) First letter. Write on the board or on bits of paper the first letter of each child's name. Each child says their name and puts their object next to their letter. *How many names begin with (for example) the letter E? Which letter has the most names that begin with it? Which has the fewest? Are there two or more letters that have as many names?*

C) Eye colour. Pictures of eye colours are put on the whiteboard, and the colours are named (blue, green, brown). Proceed as above: count the quantities and do comparisons.

D) Favourite fruit. Pictures of three different kinds of fruit are put on the board, and named (apple, banana, orange). Which fruit does the child like best? The child puts their object under that picture. The objects are counted. Which fruit is liked best by the largest number of children? Which fruit is

liked best by the smallest number of children? Are there fruit that are liked by the same number of children?

NOTE

- Show the children how to count objects, or let one of the children count them.
- If the concepts more than and less/fewer than need to be explained to the children, place the objects next to each other in one-to-one correspondence: there are single objects left in the group with the most objects. Also, when comparing, for example, two and three, three is more, as three comes after two when counting forwards verbally.

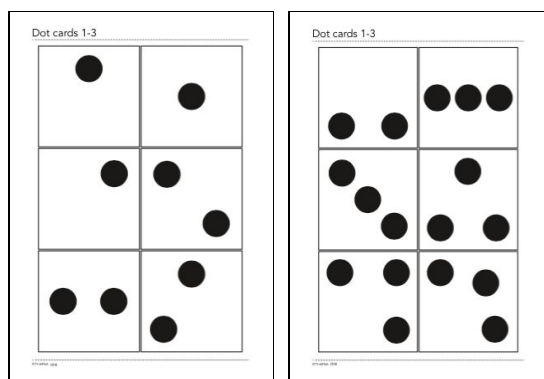
TASK 2. Peekaboo with quantities

AIM

- recognising small quantities quickly, without counting separately

EQUIPMENT

- 3 objects, a paper plate, an opaque cardboard or plastic box (under which the objects will fit)
- Attachment: Dot cards 1-3



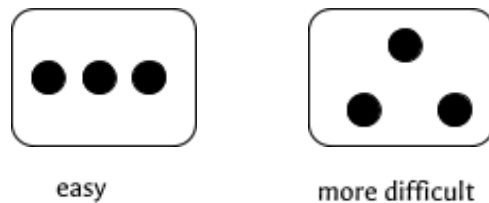
TASK PROCEDURE

A) Objects. *Now we'll practice recognising quantities quickly.* Place the plate and the box on the table. Keep the objects on your lap or in another box, so the children can't see them.

This is a peekaboo task. I will put some objects on this plate, and I will cover them with this box. Then I will lift the box so that you can see the objects for a little while. Then I will cover them again. Let's see, if you can count the objects just by looking at them quickly. When I have covered the objects, you can say the answer.

Put objects on the plate so that the children cannot see how many there are, and cover the plate with the box. Lift the box off the plate, so that the children see the objects for a few seconds. The idea is

for the child not to count the objects one by one, but to recognise the quantity directly. First show the quantities 1, 2, and 3 in order, and then in a random order. Place the objects in different formations or patterns. Horizontal and vertical formations and the patterns on dice are the easiest.



After each quantity, check the right answer by counting the objects one by one. When you find that the answers are the same (found by recognising directly and by counting one-by-one), you can discuss how the very smallest quantities can also just be recognised without needing to count them one by one.

B) Dot cards. Show each dot card one at a time for a couple of seconds. The children's task is to recognise the quantity as quickly as possible. You can turn the cards in different positions, to get a new pattern.

WORKING IN PAIRS

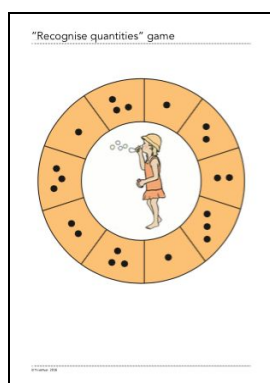
TASK 1. "Recognise quantities" game

AIM

- recognising quantities 1-3 quickly without one-by-one counting

EQUIPMENT

- 2 egg box halves and 10 small objects for each pair, a die (with only the quantities 1-3), and counters
- Attachment: "Recognise quantities" game



TASK PROCEDURE

The aim of the game is to recognise correctly five quantities, and to fill one's own egg box with objects. The players place their counters in any square on the board. Both have their egg box in front of them, and the 10 small objects are on the table. One of the players throws the die and moves along the board according to the count of the die. In each square, the player says how many dots there are in the square. After a correct answer, the player can put one object in their egg box. It is then the other players' turn. The player to be the first to have five objects in their egg box is the winner. Collecting objects in the egg box also helps to visualise how many correct answers the player still needs in order to have an object in each cup of the egg box.

NOTE

- Give the instructions for the game first to all children together.
- Observe, whether the child can recognise the quantities without counting the objects individually or pointing with their finger.
- Can the child move on the game board according to the count of the die?

TEACHING SESSION 2

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

Aim

- recognising small quantities quickly
- comparing quantities 1–3 (more than, less/fewer than, as many as)

EQUIPMENT

- Attachment: Dot cards 1–3

TASK PROCEDURE

A) Agree which number is to be hunted: 1, 2, or 3. Turn cards from your hand onto the table one at a time. When a child recognises that a card has the agreed quantity, they say "BANG!" The child who first says "bang" at the right card, gets the card. A card already collected is lost if "bang" is said at the wrong card. If it's unclear who said "bang" first, the card is placed at the bottom of the deck, and a new dot card is turned.

B) Place two dot cards on the table, e.g., 1 and 3. *Which card has more dots? Which card has fewer dots? How many dots more/fewer does this card have than that card?* Do this also with cards that have the same number of dots.

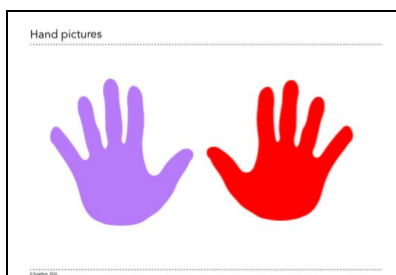
TASK 1. Right and left

AIM

- concepts: right, left, to the right, to the left
- quantities 1–5

EQUIPMENT

- Attachment: Hand pictures



TASK PROCEDURE

Name the hands: right and left. Colours will act as memory aids: red for right and lilac for left. Put the hand pictures on the board so that children can look at them for direction when doing the following tasks. In the next task, the concepts of right and left are practiced alongside small quantities.

- Which hand do you use to draw, the right or the left? Show! How many right- / left-handed children are there in the group?
- Hop twice with your right foot. Hop three times with your left foot..
- Snap the fingers of your right hand three times. Snap the fingers of your left hand once.
- How many fingers are there in the right hand? What about the left hand?
- How many toes are there in the right foot? What about the left foot?
- Point to the right with your hand. Take two steps to the right.
- Point to the left with your hand. Jump to the left three times.

WORKING IN PAIRS

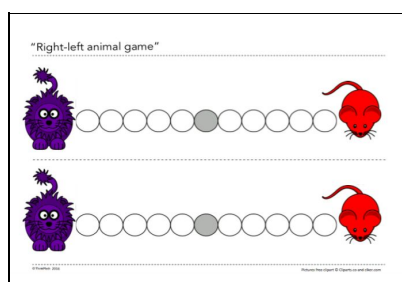
TASK 1. "Right-left animal game"

AIM

- concepts: to the right, to the left
- counting quantities 1-3
- moving on a game board

EQUIPMENT

- Attachment: "Right-left animal game"
- two dice (on the other die, the quantities are covered up with tape marked with red and lilac circles; the other die has only the quantities 1-3), a counter



TASK PROCEDURE

The players sit next to each other at the board so that the game board faces the right way up for both, so that the directions (right and left) are the same for both. The players place the shared counter on the Start square (the grey square in the middle). After this, the players take turns throwing the two dice: the colour die that shows the direction, and the dot die that shows how many "steps" to take. For example, the player gets the colour red with one die, and the quantity two on the other: the player moves the counter two steps to the right. Before the player moves the counter, they tell what moves

the dice have given, for example, "Two to the right". At the beginning of the game, the players can guess which animal the counter will go to at the end of the game. The game ends when the counter reaches either one of the animals.

NOTE

- Give the instructions first to all children together.
- Can the child move on the board according to the dots on the die?
- Does the child remember the directions right and left?

INDIVIDUAL WORK

AIM









- counting the quantities 1–3
- concepts: more, less/fewer

EQUIPMENT









- Worksheet: Counting the quantities 1-3

Counting quantities 1-3

1. Tick (X) the box that has more balls in it.

| | |
|---|---|
|   |   |
| <input checked="" type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
|   |   |
| <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |

2. Tick (X) the box that has fewer squares in it.

| | |
|---|---|
|   |   |
| <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
|   |   |
| <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |

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TEACHING SESSION 3

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

AIM

- concepts: right, left, to the right, to the left
- quantities 1-3

TASK PROCEDURE

Revising the concepts right and left, and small quantities.

- *Lift up your right hand.*
- *Wave your left hand.*
- *Shake your right foot.*
- *Skip with your left foot.*
- *How many fingers are there in the right hand? What about the left?*
- *How many toes are there in the right foot? What about the left?*
- *Point to the right with your hand. Jump to the right twice.*
- *Point to the left with your hand. Jump to the left three times.*

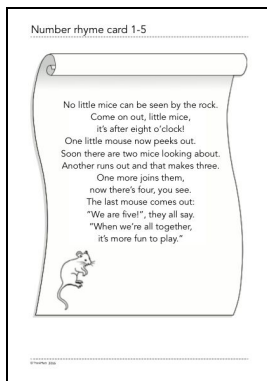
TASK 1. Number rhyme 1-5

AIM

- verbal counting forwards from 1-5
- strengthening the number word – quantity correspondence
- showing quantities with the fingers in a given order

EQUIPMENT

- Attachment: Number rhyme card 1-5



TASK PROCEDURE

Now we are going to practice saying numbers forwards, and showing them with our fingers. Here's a little rhyme about mice (show the rhyme card), listen to it first. Read the rhyme, or let one of the children read it.

Let's practice the rhyme together. We'll show the numbers in the rhyme with the fingers of our left hand. Which is the left hand? During the rhyme, direct the children to show the numbers so that at first, the hands are curled into fists, backs of the hands upwards. The children can keep their hands against the table, so they can support their hands against it if necessary. The fist is a zero/nothing, the little finger of the left hand is one, little finger and ring finger are two, and so on.

Number rhyme 1-5

| | |
|--|--------------------------------------|
| <i>No little mice can be seen by the rock.</i> | <i>(hand in a fist)</i> |
| <i>Come on out, little mice, it's after eight o'clock!</i> | |
| <i>One little mouse now peeks out.</i> | <i>(lift the left little finger)</i> |
| <i>Soon there are two mice looking about.</i> | <i>(lift the ring finger next)</i> |
| <i>Another runs out and that makes three.</i> | <i>(lift the middle finger)</i> |
| <i>One more joins them, now there's four, you see.</i> | <i>(lift the index finger)</i> |
| <i>The last mouse comes out: "We are five!", they all say.</i> | <i>(lift the thumb)</i> |
| <i>"When we're all together, it's more fun to play."</i> | |

TASK 2. Show numbers with fingers

AIM

- showing quantities 1–5 with the fingers without counting individually from a given number
- strengthening the number word–quantity -correspondence

TASK PROCEDURE

In this task, we practice showing quantities with fingers. Make a fist with your left hand. The mice will peek from their little hole. Listen, how many mice will peek at the same time. Then show the number with your fingers. Say the numbers 1–5 several times. After each number, check if everyone is holding up as many fingers. The children can also take turns saying a number.

NOTE

- Guide the children to show the numbers like in the number rhyme (1 = little finger of the left hand, 2 = little finger and ring finger, etc.).
- The aim is to learn to show the quantity directly, without individual counting.
- If the child counts the quantity individually, guide them in showing the fingers at the same time (show what "at the same time" means), first with easy numbers, such as two or five.
- Draw the children's attention to the number five, where all fingers of the hand are shown: the number five acts as an anchor for later tasks.

WORKING IN PAIRS

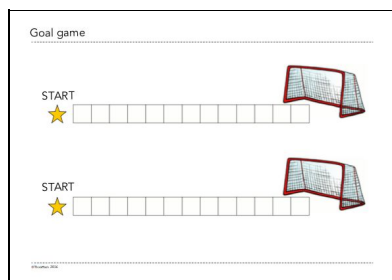
TASK 1. Goal game.

AIM

- recognising small quantities quickly, without individual counting
- showing quantities with fingers
- strengthening the number word-quantity -correspondence

EQUIPMENT

- Attachment: Goal game
- a die and counters



TASK PROCEDURE

A game for two players. The players choose their route from the game board, and place their counters in the start square. The players take turns in throwing the die, say the number of the eyes on the die, and show the corresponding quantity with their fingers. They move their counter according to the die towards the goal. If a player throws a 6, they don't move at all (i.e., 6 = 0). The one who gets their counter in the goal first wins the round.

Several rounds can be played. In this case, count can be kept of the goals won by tallying them in series of five (3 = III). The winner can, for instance, be the player who first reaches five goals (HHH).

Alternatively, counters can be collected in an empty egg carton with five cups. The player who first fills up their egg carton is the winner.

NOTE

- Give the instructions for the game and tallying to the whole group together, by first demonstrating them in a game situation with one child.

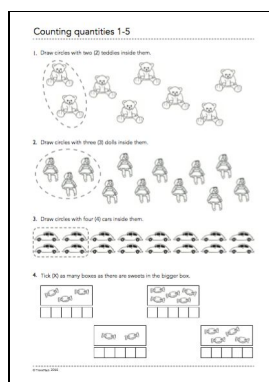
INDIVIDUAL WORK

AIM

- counting quantities 1-5
- concept: as many as

EQUIPMENT

- Worksheet: Counting quantities 1-5



TEACHING SESSION 4

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

AIM

- counting numbers 1-5 forwards
- strengthening the number word -quantity -correspondence
- showing quantities with fingers in a given order

EQUIPMENT

- Attachment: Number rhyme card 1-5

TASK PROCEDURE

As in Task 1 of Teaching session 3

TASK 1. Hidden quantity

AIM

- counting quantities with objects
- strengthening one-to-one correspondence and cardinality

EQUIPMENT

- empty milk or juice carton, 5 objects (which fit easily through the hole in the carton), paper plate

TASK PROCEDURE

Now, we will count objects. Put, for example, two objects on the plate. Ask one child to put the objects on the plate into the carton. *Put these objects in the carton so that you count them out loud at the same time.* When the objects are in the carton, ask the child to shake the carton and then ask the children: *How many objects are there in the carton?* The answer can be given verbally or by showing with fingers. The answer is checked by tipping the objects onto the plate and counting them together. Confirm the answer by showing the entire quantity with a hand gesture (move your finger around the objects). *There were two objects in the carton.* Repeat with the quantities 2-5 so that all children get a turn.

NOTE

- Take note of the counting: does the child list the numbers in the correct order, and once only (one-to-one correspondence)?
- When the child is asked how many objects were counted altogether, can they say the last number counted (cardinality)?

TASK 2. Objects in a box

AIM

- counting objects without pointing
- quantity-number symbol correspondence

EQUIPMENT

- a see-through box or glass jar, five objects (which fit in the box at the same time)
- Attachment: Number cards 1-5



TASK PROCEDURE

*Now, we will practice counting objects, so that at first, you're not allowed to touch the objects at all.. Put 2-5 objects in the box so that the children can't see. Put the box on the table. **How many objects are there in the box?** You may look, but not touch the box or the objects. When the children have given answers, check the correct answer together. One of the children get to open the box and take the objects out onto the table. Then, count the quantity: point to the objects with your finger one by one, while the children say the number word at each object.*

*Put the number cards 1-5 on the table in order. **Here we have number cards. Let's say them together. Show the card that tells how many objects there were in the box.** Confirm the answer by showing with a gesture the entire quantity (move your finger around the objects): **There were three objects in the box.** Repeat the task with different quantities, so that each child gets to open the box or jar.*

*At the end of the task, ask: **What kinds of situations could there be where you would have to count so that you can't touch the objects you are counting?** (E.g, counting objects in the environment when sitting in a car, food items, etc.)*

NOTE

- Observe, whether the child points at the objects with their finger, or whether they can count them just by looking.

WORKING IN PAIRS

TASK 1. Quantity-number card game

AIM

- strengthening the quantity-number symbol correspondence

EQUIPMENT

- Attachment: 2 x Number cards 1-5
- die

TASK PROCEDURE

A game for two players. The number cards are placed on the table, picture side up. The players take turns throwing the die. The player says the number of eyes on the die, finds the number card corresponding to the number from the table, and gets to keep the card. If the corresponding card is no longer on the table, the players change turns. The one who has more cards at the end of the game is the winner.

NOTE

- Teach the children the game first by demonstrating the game situation with a child.
- If a child doesn't remember a number symbol, name it for them and ask them to repeat it.

INDIVIDUAL WORK

AIM







- counting quantities 0-5
- strengthening the quantity-number-symbol correspondence

EQUIPMENT





- Worksheet: Quantities and number symbols A

Quantities and number symbols A

1. How many animals? Circle the number.

| | |
|--|--|
|  0 1 2 3 4 5 |  0 1 2 3 4 5 |
|  0 1 2 3 4 5 |  0 1 2 3 4 5 |
|  0 1 2 3 4 5 |  0 1 2 3 4 5 |

2. Draw the dog as many bones as the number tells you to.

| | |
|--|--|
|  1 |  4 |
|  2 |  5 |

TEACHING SESSION 5

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

AIM

- strengthening the number word-quantity correspondence
- concepts: more than, less/fewer than, as many as

TASK PROCEDURE

Two children are chosen for the task. Give both children a number 1-5, which they are to show with their fingers. The numbers can also be the same. *Two mice peek out of Mike's mouse hole. Four mice peek out of Helen's mouse hole.* Finally, the other children are asked, from which hole more or fewer mice are peeking. How many more or fewer mice?

TASK 1. Count the objects in an egg carton

AIM

- getting acquainted with the five frame using an egg carton
- counting quantities 1-5

EQUIPMENT

- half an egg carton (5 cups), 5 objects

TASK PROCEDURE

I have here one half of an egg carton. How many cups does it have? How many eggs would fit into it? I also have objects. One object can be placed in each cup. Make a little mark, for example, a triangle, in the left side of the egg carton, to show from where you will always start filling the cups. Put three objects in the egg carton. How can we find out, how many objects are there here? (Some children may recognise the quantity directly, others may suggest counting the objects individually.) A quantity recognised directly can be checked by counting individually. *How many objects more would fit in the carton?*

Repeat the task with the quantities 1-5 so that all children get a turn.

NOTE

- Show the egg carton so that all children see it from the same angle, because in later tasks, the carton will always be filled starting from the same direction.
- Observe, whether the child points at the objects with their finger, or whether they can count just by looking.
- Can the child tell the answer by saying the last number word (cardinality)?

TASK 2. Count objects into an egg carton

AIM

- counting quantities of objects from a given number word or number symbol
- strengthening one-to-one correspondence and cardinality

EQUIPMENT

- half an egg carton (5 cups) for each child, approximately 20 small objects (e.g., bricks, buttons, macaroni, or similar)
- Attachment: Number cards 1-5

TASK PROCEDURE

A) Place the objects in the middle of the table so the children can reach them. *I will take two objects from the table. Take objects one at a time and place them in the egg carton. One, two. Now there are two objects in the carton. How many more objects would still fit in this carton? (3)*

Give each child an egg carton. *Now you can have your own egg carton. Place three objects in it. Make sure the children start to fill the carton in order, starting from the triangle. When the children have placed the objects in the carton, ask: How many objects are there in the carton? How many more objects would fit in the carton?* Repeat the task with quantities 1-5 several times. The egg carton is emptied between each quantity.

B) Add number symbols to the task. *Here we have number cards. Let's see what numbers you already remember.* Show the number cards one by one. If the children don't remember a number, name it, show the corresponding quantity with your fingers, and ask the children to repeat the number word. *Now, the number on the card will tell you, how many objects you should put in the carton.* Place the number cards on the table picture side down. Each child takes a card and places the corresponding number of objects in their carton. When the child has collected the objects, ask them to tell how many objects they put in their carton, and how many more would still have fit. Mix the cards, so each child gets different quantities.

At the end of the task, ask: *In what kinds of situations might someone say to you that you have to take a certain number of objects or other things, and you would have to know how to count them?* (E.g., meal times.)

NOTE

- If after counting a child is asked how many objects there are altogether, can they give as the answer the last number word that has been said?
- Does the child list the numbers in the correct order and only once?
- If the child makes mistakes when counting, demonstrate it to them: move objects and count out loud together.
- If the child doesn't know when to stop counting, count objects up until the answer he has suggested, and thus demonstrate to them the answer cannot be correct. Count the quantity again together, and finally, emphasise the quantity: *Three, that was the quantity we wanted!*

WORKING IN PAIRS

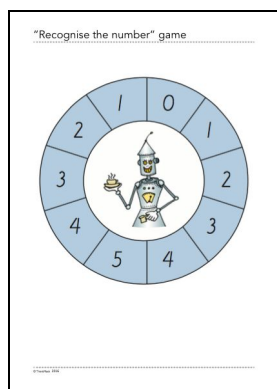
TASK 1. Recognise the Number game

AIM

- strengthening the number symbol-number word correspondence

EQUIPMENT

- two egg-carton halves, 10 small objects, a die and counters for each pair parille
- Attachment: Recognise the Number game



TASK PROCEDURE

The aim of the game is to recognise five number symbols correctly, and to fill one's egg carton with objects. The players place their counters on any square on the board. Both have an egg-carton half in front of them, and 10 objects altogether on the table. One of the players throws the die and moves on the board according to the count. If the player throws a six, they cannot move at all. At every square, the player says the number written there. After a correct answer, the player can put one object in their egg carton. The turn changes. The winner is the player who first gets their egg carton full. Collecting objects into the egg carton also illustrates how many more correct answers the player needs to have an object in each of the five cups.

NOTE

- Explain the rules of the game first to all children together.
- Observe, whether the child recognises the number symbols: if they don't remember the corresponding number word, say it to them, and ask the child to repeat it.
- Does the child know how to move on the board as many times as the count of the die tells them to?

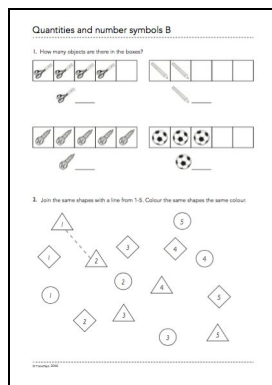
INDIVIDUAL WORK

AIM

- counting quantities 1-5
- shortened counting
- strengthening the quantity-number symbol correspondence

EQUIPMENT

- Worksheet: Quantities and number symbols B



NOTE

- When needed, give guidance in how to write the number symbols correctly.

TEACHING SESSION 6

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

AIM

- recognising the missing number in a number sequence (in quantities and number symbols)
- concepts: least/fewest, most, before, after

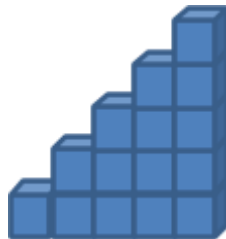
EQUIPMENT

- 15 attachable bricks (e.g., Multilink)
- Attachment: Number cards 1-5

TASK PROCEDURE

A) Make bars with the bricks to correspond to the quantities 1, 2, 3, 4, and 5. Show the bars to the children one at a time, and ask them to count how many bricks each one is made of. Then place the bars on the table, in a mixed-up order. *Which bar has the fewest bricks? Which bar has the most bricks? Let's put the bars in order, into stairs from the smallest quantity to the largest quantity. What comes next, after one? And what comes then?*

When the stairs are ready, explore them. For example: *What comes after four? What comes before four?*



B) The children close their eyes for a moment. Remove one of the bars from the stairs. *Which bar is missing?* The children can take turns removing a bar.

C) Place the bars so that a number card fits easily underneath them. Place the mixed-up cards on the table. Let the children find a corresponding number card for each bar. Read the created number sequence. Then remove the bars and turn the number cards picture side down. Turn one number card over (e.g., 4). *What number comes after number four?* (Turn the card to check.) *What number comes before number four?*

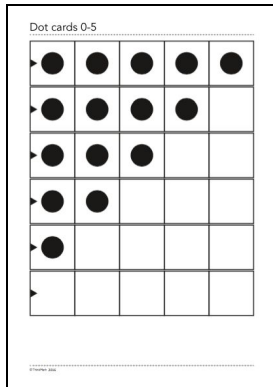
TASK 1. Dot- and number cards

AIM

- strengthening the quantity-number symbol correspondence
- number sequence 1-5

EQUIPMENT

- Attachment: Dot cards 1-5, Number cards 1-5



TASK PROCEDURE

A) Now we are going to practice quantities and numbers with cards. Here we have two kinds of cards. These have dots and the others have numbers. The cards are all mixed up. Can you group the cards so that here (show the place on the table) we put the cards with the dots, and here the cards with the numbers?

Each dot card has a number card. For example, this card that has one dot, has a card with the number one. Can you find a pair for each card, in the same way?

Go through the quantities and the corresponding number symbols together. *How many dots do you see in this card?* (E.g., 2.) *The quantity "two" can be shown with the number "two".* And so on.

Ask the children to place both the dot and the number cards in order, from smallest to largest, if they haven't yet done so. This also nicely demonstrates how the quantities increase by one. Read the created number sequence forwards and backwards so that first both dot and number cards are visible. Then turn over the dot cards, and read the number sequence from the number cards only.

B) Speed practice. Mix up the dot and the number cards. *I will now show one card very quickly. Tell me, what quantity or what number you see in the card.* You can show the cards by turning them over from the deck for a few seconds, or, for example, show them for a moment from behind the table. Show the dot cards so that the triangle is always on the child's left. First, you can ask the whole group to say the number, and then show a few cards to the children individually.

TASK 2. Poisonous Mushroom game

AIM

- counting or recognising quantities
- recognising the number symbol tunnistaminen

EQUIPMENT

- Attachment: Dot cards 1-5, Number cards 1-5
- 10 paper plates

TASK PROCEDURE

The dot and number cards are attached onto the paper plates with blu-tack. The plates are placed upside down on the floor.

One of the children closes their eyes or leaves the room for a moment. Meanwhile, the other children decide which one of the plates is the poisonous mushroom.

The child who doesn't know which one is the poisonous mushroom plate starts to turn over and collect the plates one by one. When they turn the plate over, they say the number or the quantity attached to the plate. When the child lifts the plate the others chose as the poisonous mushroom, the others say "Poisonous mushroom!" After the poisonous mushroom plate has been collected, the child counts how many plates they collected altogether. The purpose of the game is to collect as many plates as possible.

The plates are replaced on the floor and mixed up again, and another child is chosen as the collector of plates.

NOTE

- If the child makes mistakes in counting, demonstrate it to them: point at the dots and count out loud together.
- If the child doesn't remember a number symbol, name it for them and ask them to repeat the number word.

INDIVIDUAL WORK

AIM



- counting quantities 1-5
- strengthening the quantity-number symbol correspondence

EQUIPMENT



- Worksheet: Quantities and number symbols C

Quantities and number symbols C

1. How many balls are there in the boxes?

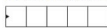
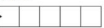
 

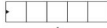

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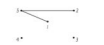
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2. Draw and colour as many balls as the number tells you to.

3. Join the dots in order from 1-5.

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TEACHING SESSION 7

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

AIM

- concepts: more than, less/fewer than, one more than, one less/fewer than, as many as

EQUIPMENT

- 15 attachable bricks (e.g., Multilink) and 5 bricks for each child

TASK PROCEDURE

Use the bricks to make bars corresponding to the quantities 1, 2, 3, 4, and 5. Place the bars on the table in a mixed-up order. Show the children the bar that has three bricks. *Which bar has fewer bricks than this bar?* (1 and 2.) *Which bar has more bricks than this bar?* (4 and 5.) *Which bar has one brick more than this bar?* (4) *Which bar has one brick fewer than this bar?* (2)

Give each child 5 bricks. Show the bar with 2 bricks. *Build a bar with one brick more than this bar.* Make up similar building tasks with different quantities: ask the child to build bars with one brick more than, one brick fewer than, or as many bricks as the bar you are showing them.

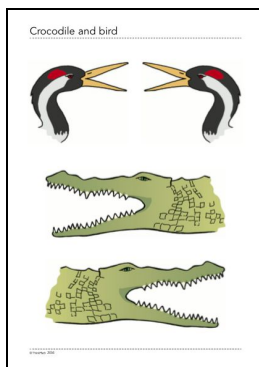
TASK 1. Comparisons with quantities

AIM

- comparing quantities
- concepts: more than, less/fewer than, as many as
- introducing the comparison sign

EQUIPMENT

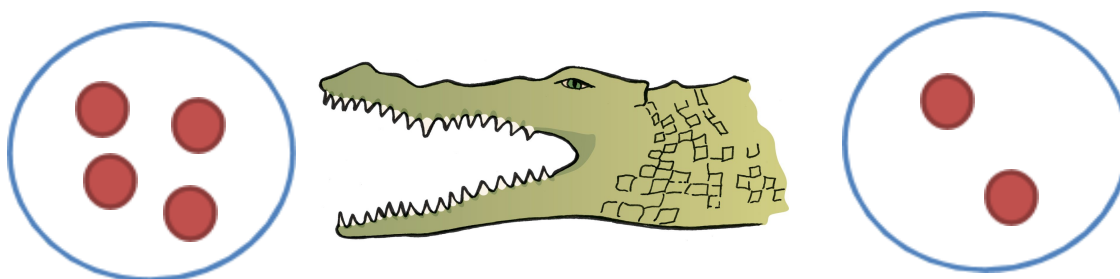
- 10 small objects, two plates
- Attachment: The crocodile and the bird



TASK PROCEDURE

Tell a story about a greedy crocodile or bird – it is always hungry. When the animal is offered food, it always eats from the side where there is more food (the bird's beak and the crocodile's mouth open in that direction). Show an example: *On this plate, there are two burgers, and on this plate, there are four burgers* (use objects). *On which plate are there more burgers? Because four is more than two, the crocodile wants to eat off the plate with four burgers. Two is less than four, so the crocodile won't eat off this other plate.*

Put different amounts of food on the plates. Ask the children to tell how many bits of food there are on the plates. Give one child at a time a turn to place the crocodile or the bird so that its mouth or beak opens in the direction of more food. Ask the child to describe the comparison situation, for example, that four is more than two.



WORKING IN PAIRS

TASK 1. Crocodile game or Bird game

AIM

- comparing quantities
- concepts: more than, less/fewer than, as many as
- introducing the comparison sign

EQUIPMENT

- 10 small objects, 2 plates, a die (six covered up with tape), for keeping score, e.g., ten sticks
- Attachment: Crocodile and bird

TASK PROCEDURE

Both players throw a number with the die and collect on their plate the corresponding number of bits of food. The six on the die has been covered with tape, and this means zero. The players say how many bits of food they have. The bird or the crocodile is placed between the plates with its beak or mouth open in the direction of the plate with more food. The player whose plate has more food, gets a point (one stick). if both players get the same number, tell them that since both plates have as many bits of food on them, the bird or the crocodile doesn't know off which plate to eat, and neither player gets any points. The player who first collects five sticks is the winner.

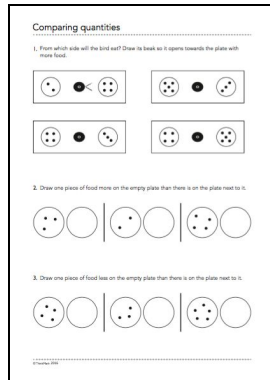
INDIVIDUAL WORK

AIM

- comparing quantities
- concepts: more than, less/fewer than, one more than, one less than

EQUIPMENT

- Worksheet: Comparing quantities



TEACHING SESSION 8

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

AIM

- concepts: more than, less/fewer than, as many as

TASK PROCEDURE

Counting and comparing quantities found in one's own body. Which are there more of (or as many as):

- fingers or eyes
- fingers or toes
- noses or eyes
- hands or feet (etc.)?

TASK 1. Comparing with numbers

AIM

- comparing quantities, comparing numbers
- käsitteet: suurempi, pienempi, yhtä suuri
- introducing the comparison sign

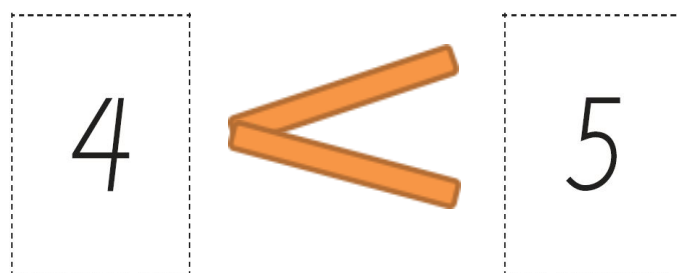
EQUIPMENT

- 2 plates, 10 small objects, 2 sticks
- Attachment: 2 x Number cards 1-5

TASK PROCEDURE

The equipment is on the table. *In this task, we will compare numbers.* Ask one child to place three objects on the plate, to take the corresponding number card, and to place it below the plate. ask another child to place five objects on the other plate, to take the corresponding number card, and to place it below the plate. *The numbers tell us, how many objects there are on the plates. Which is the bigger number? Now, we will make the crocodile's mouth (bird's beak) in a different way. We will make it with these sticks.* The sticks are placed so it looks like "the mouth is open" towards the bigger number.

Repeat with different numbers. When the plates have the same number, the sticks are placed between the number cards so that an equals sign is formed (the bird/crocodile is surprised).



WORKING IN PAIRS

TASK 1. Bigger Than/Smaller Than Game

AIM

- comparing numbers
- concepts: bigger, smaller, as big as
- introducing the comparison sign

EQUIPMENT

- 2 sticks
- Attachment: 2 x Number cards 1-5

TASK PROCEDURE

Agree in the beginning, whether you are playing the bigger than- or the smaller than game. The number cards are shuffled and placed on the table picture side down. Both players pick a card, say the number on it and put them next to each other on the table. The players compare the numbers and place the sticks between the numbers so that they open towards the bigger number, or if the numbers are the same, place the sticks to form an equals sign.

The player who has the bigger or the smaller number (as was agreed), gets both cards. This player will tell what the comparison situation is, e.g., four is bigger than three. If the cards are the same, the cards are shuffled back into the deck. The round ends when there are no more cards. The player with more cards wins.

INDIVIDUAL WORK

AIM

- comparing numbers
- concepts: bigger, smaller, as big as

EQUIPMENT

- Worksheet: Comparing numbers

Comparing numbers

1. On which side is the bigger number? Draw the beam to open toward it.

| | | |
|---|---|---|
| 2 | • | 5 |
| 4 | • | 2 |
| 3 | • | 1 |
| 3 | • | 5 |

2. Arrange the numbers from the smallest to the biggest. Write them in the circles.

3 1 5 2 4 0

○ ○ ○ ○ ○ ○

3. Arrange the numbers from the biggest to the smallest. Write them in the boxes.

0 5 1 4 2 3

□ □ □ □ □ □

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TEACHING SESSION 9

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

AIM

- saying the next or the previous number in a number sequence
- concept: next, previous

EQUIPMENT

- Attachment: 2 x Number cards 0-5

TASK PROCEDURE

Shuffle the number cards and place the deck on the table picture side down.

A) Next number. Cards 0-4. The children take turns taking a card from the deck, and say which is the number that comes next after the number they've picked.

B) Previous number. Cards 1-5. The children take turns taking a card from the deck, and say which is the previous number to the one they've picked.

NOTE

- If needed, name "zero" for the children, and tell them it means "not any" as a quantity.

TASK 1. Ordinal numbers

AIM

- ordinal numbers 1.-5.
- concept: every other

EQUIPMENT

- 6 bricks for each child, one of which is of a different colour (e.g., 5 blue and 1 red), and 10 bricks of the same colour to share in task C

TASK PROCEDURE

A) The children form a line. *Who is first in line? Who is second?* When the place of all children has been mentioned, the children turn to face the opposite direction. *Who is first now?* To know who holds which place in the line, one must know which direction to start counting.

B) Each child has six bricks in front of them. *Make a row with the bricks you have more of (e.g., blue).* At this point, the direction of counting will not be defined. *Change the second brick in the line for the red brick* (the colour of which the child has only one). Do all children start to count from the same direction? If so, all will have the red brick in the same place in their line. If not, the red brick will be in a different place.

Next, define the direction where we start counting to be from the left (from the left hand side). *Change the fourth brick in the row into a red brick.* Think of different places for the red brick.



C) Every other. There are ten bricks of the same colour on the table. Now, the task is to change every other brick into one of a different colour. At first, you need to decide whether to start counting from the first or from the second brick (whether you change the first brick or the second brick, which will define where the next change will be). If the children manage changing every other brick, you can also try changing every third brick.

TASK 2. Parking house

AIM

- ordinal numbers 1.-5.
- concepts: most, least/fewest, as many as

EQUIPMENT

- a "parking house" that has been built with three milk-carton halves glued together (see picture; the number of each floor has been marked as an ordinal number, e.g., 3.), a die, 10 small objects (possibly small toy cars)

TASK PROCEDURE

Introduce the parking house. *How many floors are there in the parking house?* (5) *What symbol is there after each number?* (Full stop.) Point at number 1. *If there's no full stop after the number* (cover the full stop with your finger), *how do we say this number?* (One.) *When there is a full stop after the number, we say "first". This is the first floor, not the one floor.* Go through the other ordinal numbers in the same way.

Each child has an object. The children take turns throwing the die. When the count of the die is 1–5, the child puts their object on the corresponding floor, and names the floor where they put their object. When a child throws a 6, they can put their object on any floor they want to.

At the end, count how many cars (objects) there are on each floor. *There are three cars on the first floor, on the second floor, there are... On which floor is there the most cars? On which floor is there the fewest cars? Is there the same number of cars on any floor?*

Play several rounds. The house can also turn into an ordinary house with people going in.

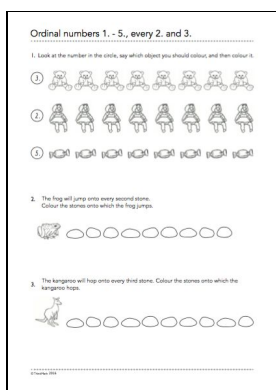
INDIVIDUAL WORK

AIM

- ordinal numbers 1.–5.
- concepts: every other, every third

EQUIPMENT

- Worksheet: Ordinal numbers 1.–5., every 2. and 3.



TEACHING SESSION 10

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

AIM

- reciting the number sequence 1-10

TASK PROCEDURE

The children stand in a circle. Recite the numbers 1-10 so that the child whose turn it is says the next number in the sequence. When the child says the number, they also clap their hands, squat down, jumps, or does some other action agreed together, for different rounds. The warm-up activity is played a few times so that the child who starts the sequence changes. Play the game also so that the number sequence is recited backwards.

TASK 1. Number rhyme 5-10

AIM

- reciting the numbers 5-10 forwards
- strengthening the number word-quantity correspondence
- showing quantities with the fingers in a given order n

EQUIPMENT

- Attachment: Number rhyme card 5-10



TASK PROCEDURE

Now we will practice reciting numbers forwards and showing them with our fingers. Here is a little rhyme about mice (show the number rhyme card), listen to it first. Read the rhyme, or let one of the children read it.

Let's practice the rhyme together. The rhyme starts from the number five. Can you show the number five with your left hand? loru yhdessä. Loru alkaa luvusta viisi. During the rhyme, direct the children to show the numbers so that first the hand is in a fist, with the back of the hand upwards. the children

can have their hands on the table, so they can support their hands on it, if needed. Six is the left hand and the thumb of the right hand, seven is the left hand and the thumb and forefinger of the right hand, and so on.

***Five** little mice are playing in the sun. (show the fingers of the left hand)*
From underneath another rock, another mouse runs. (right thumb)
*Now there are **six** of them that I can count.*
"Are there any other mice?" one of them shouts.
***Seven** (show also the right index finger)*
*and **eight** (the right middle finger)*
but that's not all. Wait.
*Add one more mouse, and then there are **nine**. (right ring finger)*
*The last mouse makes **ten**, and that is fine! (right little finger)*

TASK 2. Showing numbers with fingers

AIM

- strengthening the number word-quantity correspondence
- showing numbers 1–10 with fingers from a given number, without individual counting

TASK PROCEDURE

In this task, we'll practice showing numbers with our fingers. The mice are peeking from their holes. Listen, how many mice are peeking at the same time. Show the number with your fingers. Say numbers between 1–10 many times. After each number, check to see if all everyone is showing the same number of fingers. Also the children can take turns saying a number.

NOTE

- Guide the children in showing the quantities in the same way as in the rhyme (left little finger = 1, little finger and ring finger = 2, etc.).
- The aim is to learn to show the quantity directly, without counting all. Draw the children's attention to number five, where all fingers on one hand are shown. If showing numbers directly is difficult, the numbers 6–9 can be shown so that five is first shown, counting on from there (5... 6, 7).

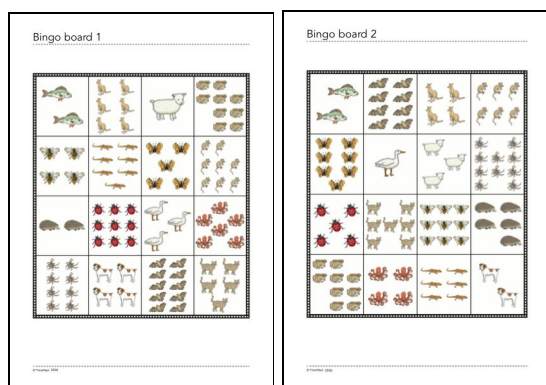
TASK 3. Bingo Game

AIM

- counting the quantity 1-10
- strengthening the number word-quantity correspondence

EQUIPMENT

- a bingo board and counters for each child
- Attachment: Bingo boards 1 and 2



TASK PROCEDURE

Give each child a bingo board and counters.

Now, we will play the Bingo game, and practice counting quantities. I will say a number, and you can then find the same number from your bingo board. Let's practice together: three. Now find the square with three pictures on your bingo board, and put a counter on it. When you have four counters in a line, say "bingo". The first to shout "bingo", is the winner of the round. You can also play bingo so that a number card 1-10 is picked, and the number is shown to everyone. The children find the corresponding number on their game board.

INDIVIDUAL WORK

AIM



- counting quantities 6–10, quantities 6–10 formed based on five



EQUIPMENT

- Attachment: Structuring numbers by five


Structuring numbers by fives

1. Tell 20 as many boxes as there are balls in the bigger box.

| | |
|---|---|
|  |  |
| <input type="text"/> | <input type="text"/> |

| | |
|---|---|
|  |  |
| <input type="text"/> | <input type="text"/> |

2. Colour the quantity with two colours. The first part is always five.

| | |
|---|----------------------|
|  | <input type="text"/> |
| 6 is 5 and 1 | 7 is 5 and ____ |

| | |
|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> |
| 8 is 5 and ____ | 9 is 5 and ____ |

| | |
|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> |
| 10 is 5 and ____ | |

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TEACHING SESSION 11

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

AIM

- number word–quantity correspondence with the numbers 5–10
- showing quantities with the fingers in a given order

EQUIPMENT

- Attachment: Bingo board 1 or 2

TASK PROCEDURE

A) Show a quantity on the Bingo board. *How many animals are in this square? Show the same number with your fingers.* Go through several pictures on the Bingo board.

B) Show with your fingers quantities 1–10 (grouped as in the rhyme). The children are to say the corresponding number word as quickly as possible. You can also give the children turns in saying the quantities, if you prefer.

TASK 1. Comparing quantities

AIM

- classifying objects
- counting quantities of objects (5–10)
- strengthening one-to-one correspondence yhteen and cardinality
- strengthening quantity-number symbol correspondence
- concepts: most, least, more, less/fewer

EQUIPMENT

- objects (e.g., 5 sticks, 6 pens, 7 erasers, 8 buttons, 9 paper clips, 10 bricks), 6 plates
- Attachment: Number cards 5–10

TASK PROCEDURE

The objects are placed on the table or on the floor and mixed up. *Here we have different objects. Your task is to arrange the objects in groups on these plates so that the same objects make up a group.* When the children have grouped the objects, they are named. After this, the objects in a group are taken away from the other groups and examined. *How many objects are there in this group?* The number cards are also brought onto the table or the floor. *Which of these numbers tell how many*

objects are in this group? The number of objects in each group is counted, and the corresponding number card is found.

When the objects in all groups have been counted, compare them. Which group has the *most* objects? Which group has the fewest objects? Which group has more/fewer objects? How many more/fewer?

NOTE

- If it is difficult for the child to see which group has more objects, the objects can first be paired next to each other one by one: there will be unpaired objects in the bigger group. Because the number cards are also to hand, when comparing, for instance, the quantities 5 and 7, you can also say that five comes before seven when reciting numbers forwards, so it is the smaller number (quantity).

WORKING IN PAIRS

TASK 1. Comparing Quantities game

AIM

- strengthening quantity-number symbol correspondence
- comparing quantities
- concepts: bigger than, smaller than, as big as
- introducing the comparison sign

EQUIPMENT

- 2 sticks, 20 small objects, 2 plates
- Attachment: 2 x Number cards 1-10

TASK PROCEDURE

At the beginning of the game, agree whether you are playing the bigger than or the smaller than game. The number cards are shuffled and placed on the table picture side down. Both players take a card, say the number and take the corresponding number of objects on their plate. The players compare the quantities or the numbers and place the sticks between the plates so that the sticks open towards the bigger or the smaller number. If the quantities are the same, the sticks are placed to form an equals sign.

The player who has the bigger or the smaller quantity, as agreed, gets both number cards. This player will announce the comparison situation, e.g., nine is bigger than (more than) seven. If the numbers are the same, neither player gets the cards, and they are placed to one side. The round ends when the deck is used up. The player with more cards at the end of the round is the winner.

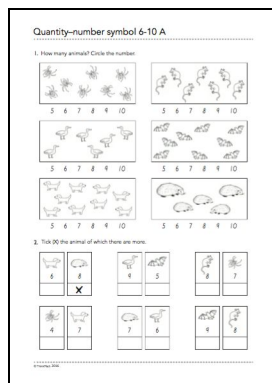
INDIVIDUAL WORK

AIM

- counting quantities 6–10, strengthening quantity-number symbol correspondence
- comparing numbers (more than)

EQUIPMENT

- Worksheet: Quantity-number symbol 6–10 A



NOTE

- If the child cannot do the comparison straight from the number symbols in part 2, ask them to compare first the quantities (e.g., the child takes six bricks in one group and eight in the other, and compares these by placing the quantities next to each other, in one-to-one correspondence).

TEACHING SESSION 12

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

AIM

- missing number in a number sequence (with quantities and numbers)
- concepts: least, most, before, after

EQUIPMENT

- 55 bricks that can be attached to each other (e.g., Multilink)
- Attachment: Number cards 1–10

TASK PROCEDURE

A) Make bars of following quantities with the bricks: 1, 2, 3, 4, 5, 6, 7, 8, 9 ja 10. Build stairs 1–10 with them. *Show which bar has the least bricks? Which bar has the most bricks? What comes after seven? What comes before nine?*

B) The children close their eyes for a moment. Take away one of the bars from the stairs. Which bar is missing? The children can take turns taking away a bar.

C) Place the bars so that a number card easily fits below them. Place the number cards on the table, mixed up. Let the children find the corresponding number card for each bar. Read the formed number sequence. Then take the bars away and turn the number cards picture side down. Turn one number card over (e.g., 6). *Which number comes after number six? (Turn the card over to check.) What number comes before number six?*

TASK 1. Reciting numbers forwards and backwards

AIM

- reciting numbers forwards and backwards
- starting reciting from the middle of a number sequence
- fluent and flexible use of number sequences (i.e., don't have to recite numbers always beginning with one)
- number word–number symbol correspondence

EQUIPMENT

- numbers 1–10 written on coloured paper (odd on red, even on blue), string and 10 clothes pegs
- Attachment: Number cards 0–10 for each child

TASK PROCEDURE

A) Reciting numbers forwards and backwards with the help of the coloured papers. Odd numbers have been written on red paper and even numbers on blue. String and clothes pegs are also needed..

Lets arrange these numbers on the string in the same order that we say them, when we recite them starting from one.

Can you recite the numbers also the other way (backwards)?

Can you say the numbers that are written on the red pieces of paper? (Forwards.)

Can you say the numbers on red paper in the other direction? (Backwards.)

Can you say the numbers that are written on the blue pieces of paper? (Forwards.)

Can you say the numbers on blue paper in the other direction? (Backwards.)

Can you think of a reason why some numbers are written on red and some on blue paper?

B) Each child is given their own set of number cards (0-10). The children are asked to arrange their own cards according to instructions. The children are asked to recite the number sequences after each task.

Number sequences forwards:

Arrange the cards like they are recited starting from one.

Arrange the cards so that only every other card is used. Start from two and continue from there onwards.

Arrange the cards so that only every other card is used. Start from one and continue from there onwards.

Number sequences backwards:

Arrange the cards like they are recited starting from ten and going backwards.

Arrange the cards so that only every other card is used. Start from ten and continue from there backwards.

Arrange the cards so that only every other card is used. Start from nine and continue from there backwards.

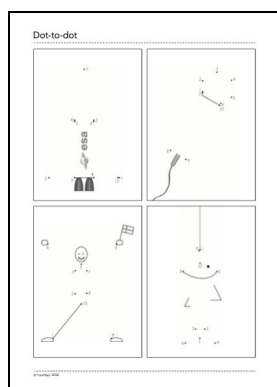
INDIVIDUAL WORK

AIM

- number sequence 1-10 forwards and backwards

EQUIPMENT

- Worksheet: Dot-to-dot



NOTE

- In two of the pictures, start joining dots from number 1 onwards, and in two picture, from number 10 backwards.

TEACHING SESSION 13

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

AIM

- ordinal numbers 1.-10.

EQUIPMENT

- 55 bricks that can be attached to each other (e.g., Multilink), a small toy figure (Lego figure, dinosaur, or similar)

TASK PROCEDURE

A) Use the bricks to make bars corresponding to the following quantities: 1, 2, 3, 4, 5, 6, 7, 8, 9 ja 10. Build them into stairs 1-10. The toy figure moves from one step to another. Place the toy figure on the first step. *On which step is the toy?* Move the figure first in order from one step to the next. After this, let one of the children place the toy figure onto one of the steps. The task of the children is to say, on which step the toy is.

B) Put 10 bricks of the same colour in a row (unattached). As one child at a time to change one of the bricks into one of a different colour. For example: *Change the sixth brick into a red brick.* The children can also take turns in giving each other instructions.

TASK 1. Counting objects in egg cartons

AIM

- introducing ten-frame using an egg carton
- counting quantities (shortened counting)

EQUIPMENT

- egg carton, 10 bricks

TASK PROCEDURE

I have here an egg carton. How many cups are there in it. How many eggs would fit in it? I also have objects. One object can be put in one cup. Use a marker pen to make a little mark on the left side of the egg carton, and always start filling the cups from there. Put six objects in the egg carton. The objects are always put in the carton in the same order, starting from the top left corner, and moving onto the lower row. How can we find out how many objects are in this carton? So each object doesn't have to be counted individually (aiming for shortened counting), instruct the children to count on from five. How many objects are there in the top row? If the top row is full, there are always five

objects there. The same as with your fingers: the fingers of one hand make five. We can start to count on straight from five: five, six. How many objects more would fit in the carton?

Let each child define a few quantities. Direct the child to begin counting from five with the quantities 6–9. Emphasise also the quantity ten. Always when both rows are full, the quantity is ten (like the fingers of two hands).



NOTE

- Show the children the egg carton so that they all see it from the same direction, because in later tasks, the egg carton is always filled and read starting from the same direction.
- Observe, whether the child points at the objects or whether they can count with their eyes.
- Can the child give as the answer the last number word said? (Cardinality.)

TASK 2. Counting objects into the egg carton

AIM

- counting quantities from a given number word
- strengthening one-to-one correspondence and

EQUIPMENT

- an egg carton and 10 small objects for each child (e.g., bricks, buttons, macaroni, or similar)

TASK PROCEDURE

Give each child an egg carton of their own and place the objects on the table so that everyone can reach them. *Now put seven objects in your egg carton.* Ensure the children start filling the egg carton in order, starting from the mark. When the children have collected the objects, ask: *How many objects are there in your carton? How many objects more would fit in the carton?*

Repeat with different quantities 1–10 several times. At the end of the task, ask: *In what kinds of situations could someone tell you to take a given number of objects or other things, and you would have to know how to count them?* (E.g., meal times.)

WORKING IN PAIRS

TASK 1. Comparing quantities of objects in egg cartons

AIM

- counting quantities from a given
- strengthening one-to-one correspondence and the concept of cardinality
- more than, less/fewer than, as many as

EQUIPMENT

- an egg carton for each child and 10 small objects (e.g., bricks, buttons, macaroni, or similar)
- Attachment: 2 x Number cards 1–10

TASK PROCEDURE

The number cards are shuffled and placed on the table as a deck with the picture side down. Both children have an egg carton and 10 objects in front of them. Both children turn over a number card and say the number on it. Both place the corresponding number of objects in their egg carton. After this, the children check to see who has the most objects in their egg carton. This can be done by observing the quantity of objects in the cups (if the children have placed the objects in their egg cartons in the order taught). The player with more objects in their egg carton gets the number cards. If the quantities are the same, neither player gets the number cards, and they are placed to one side. The game ends when all cards in the deck have been turned over. The winner is the player with more cards at the end of the game.

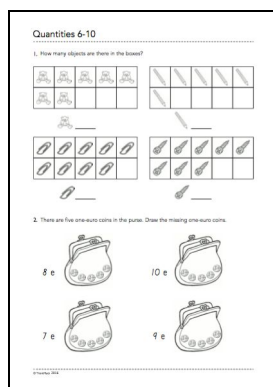
INDIVIDUAL WORK

AIM

- counting quantities 6–10

EQUIPMENT

- Worksheet: Quantities 6–10



TEACHING SESSION 14

TEACHER-DIRECTED WORK

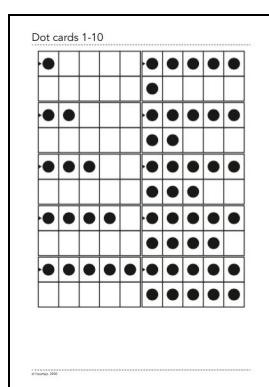
WARM-UP ACTIVITY

AIM

- recognising quantities swiftly from the ten-frame

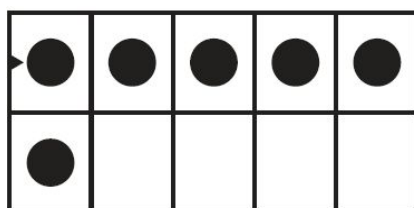
EQUIPMENT

- Attachment: Dot cards 1-10 and Number cards 1-10



TASK PROCEDURE

A) Show the children one dot card at a time in numeric order, and ask them to name the quantity. If the child does recognise a quantity greater than five immediately, guide them to start counting on from five.



B) Shuffle the dot cards and place the deck on the table picture side down. Spread the number cards 1-10 on the table in order. Let each child take a turn taking a dot card and naming the quantity. After this, the child places the dot card below the corresponding number card.

TASK 1. BANG Game

AIM

- strengthening the quantity-number symbol correspondence

EQUIPMENT

- Attachments: 2 x Dot cards 1-10 and one set of Number cards 1-10

TASK PROCEDURE

Dot cards and number cards are shuffled in separate decks and placed on the table. The top card in the number card deck is turned and named together. After this, the teacher turns one card at a time from the dot card deck onto the table. When the number and dot cards correspond, the child says "BANG!" (It is a hit, i.e., the quantity and number match each other). The child who says the correct answer first gets the number card. If a child says "bang" at the wrong time, they lose one of the cards they have collected. This card will be placed at the bottom of the deck. A new card is then turned over and named, etc. When all dot cards have been turned, they are shuffled into a new deck. The game is over when all cards in the dot card deck have been played. The winner is the child with the most cards at the end of the game. If it is unclear who said "bang" first, the number card is placed at the bottom of the deck, and a new card is turned over.

WORKING IN PAIRS

TASK 1. Memory game

AIM

- strengthening the quantity-number symbol correspondence

EQUIPMENT

- Attachment: Dot cards 1-10, Number cards 1-10

TASK PROCEDURE

A game for 2-4 players. The aim of the game is to collect as many card pairs as possible. The dot cards and number cards are shuffled in their own decks, and they are arranged on the table picture side down so that the dot cards and number cards are in their separate groups on the table. The players take a number card first and says the number. After this, they try to find the corresponding dot card. If the player finds a pair, they take the cards, and the players change turns. If the player does not find a pair, they turn the cards over picture side down, and the players change turns. The game is over when there are no cards left on the table. The winner is the child with most cards.

INDIVIDUAL WORK

AIM

- counting quantities 6–10
- shortened counting
- strengthening the quantity–number symbol correspondence
- number sequence 1–10 forwards and backwards

EQUIPMENT

- Worksheet: Quantity–number symbol 6–10 B

Quantity–number symbol 6–10 B

1. How many balls are there in the boxes?

| | | | | | |
|---|---|---|---|---|--|
| ● | ● | ● | ● | ● | |
| ● | ● | ● | ● | ● | |

● _____

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ● | ● | ● | ● | ● | ● | ● | ● |
| ● | ● | ● | ● | ● | ● | ● | ● |

● _____

2. Write the missing numbers, in order.

| | | | | | | | |
|---|---|--|---|--|---|--|---|
| 1 | 2 | | 4 | | 6 | | 8 |
|---|---|--|---|--|---|--|---|

| | | | | | | | |
|----|---|--|---|--|---|--|---|
| 10 | 9 | | 7 | | 5 | | 3 |
|----|---|--|---|--|---|--|---|

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TEACHING SESSION 15

TEACHER-DIRECTED WORK

WARM-UP ACTIVITY

AIM

- defining quantities by comparing numbers

EQUIPMENT

- Attachment: Number cards 1-10

TASK PROCEDURE

The number cards are shuffled. One of the children takes a card so the others don't see it. The others start to guess what number it is. The child with the number card is only allowed to say "bigger" or "smaller", if the number is not guessed correctly. For example, the card is 5. "Is it 7?" (Smaller.) Is it 4? (Bigger.) Is it 6? (Smaller.) Is it 5? (Yes.) Play several rounds.

TASK 1. Poisonous mushroom game

AIM

- recognising the number symbols

EQUIPMENT

- 10 paper plates
- Attachment: Number cards 1-10 or Dot cards 1-10

TASK PROCEDURE

The number cards or dot cards are attached onto the paper plates with blu-tack. The plates are placed upside down on the floor.

One of the children close their eyes or leaves the room for a moment. Meanwhile, the other children decide which of the plates is the poisonous mushroom.

The child who doesn't know the chosen poisonous mushroom plate starts turning the plates and collecting them one by one. When they turn the plate, they say the number or the quantity on it. When they pick up the plate the others have chosen as the poisonous mushroom, the others say, "Poisonous mushroom!" Once they've collected the poisonous mushroom, the child counts how many plates they collected altogether. The aim of the game is to collect as many plates as possible.

The collected plates are replaced on the floor and mixed up, and another child is chosen to collect plates.

NOTE

- If the child makes mistakes in counting, demonstrate it to them: point at the dots and recite the numbers together.
- If the child does not remember the name of the number, name it for them and ask them to repeat it.

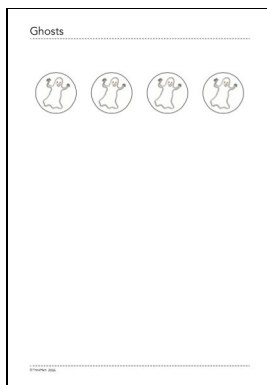
TASK 2. Ghost game

AIM

- recognising number symbols
- counting quantities

EQUIPMENT

- Attachments: 4 x Number cards 1-10, Ghosts
- blu-tack



TASK PROCEDURE

Before the game, the teacher attaches a picture of a ghost on 3-4 number cards so that the children don't know the number of ghosts. The number cards are shuffled and the deck is placed on the table.

The children take turns taking number cards from the deck. The child may take as many cards as they dare to, during their turn. After turning over the card, the child says the number. After this, they decide whether to continue taking cards. If a ghost is turned, the child loses all cards they have collected during that turn to the ghost. These cards and the ghost card are moved to a separate pile. If the child decides to continue, they can keep the number cards, and the cards they have collected during that round are safe from the ghost during the next round. After their turn, the child can count how many cards they managed to pick. The game is over when all number cards have been turned. The winner is the child with most cards at the end of the game.

INDIVIDUAL WORK

AIM




















- counting quantities 1-10, strengthening the quantity-number symbol correspondence.

EQUIPMENT





- Worksheet: Quantity-number symbol 1-10

Quantity-number symbol 1-10

1. Join the quantity and the number with a line.

| | | |
|---|----|---|
|  | 1 |  |
|  | 2 |  |
|  | 3 |  |
|  | 4 |  |
|  | 5 |  |
|  | 6 |  |
|  | 7 |  |
|  | 8 |  |
|  | 9 |  |
|  | 10 | |

2. Draw and colour as many balls as the number tells you to.

| | |
|---|---|
| 6  | 5  |
| 7  | 8  |

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