



# Developing mathematical competence and logical thinking using coding in a culturally diverse group.

Topic: Coded Rhythms.

Age: 5-6 years

**Meaning of action:** Coding is the denoting of something with conventional characters containing specific information. We code from an early age – facial expressions, melody, tone of voice – these are the first coded pieces of information that children come into contact with. Over time, children learn about conventionally accepted symbols. Systematic and diverse training in this area will contribute, m.in, to the development of children's thinking, coordination, better concentration of attention, as well as memory. Coding and decoding is also a process that ultimately leads children to the ability to read and write, m.in.

## Materials:

- cards with vowels "o", "a", "e", "i", "u", "y", board with diagrams, strips of tissue paper (short and long)
- cardboard boxes with emotions
- percussion instruments (drum, rattle, tambourine); printed trusses; Crayons; terry cloths, wide paper tape

## 1. Singing vowels :

a) The teacher presents the diagram to the children, points out the elements one by one and says: When I show a wavy line, we say the "long" drawn vowel ("the vowel flows"). When I point to a dot, we make intermittent, short sounds ("the vowel jumps"). The volunteer draws a vowel from among the cards, and then the exercise begins.

b) The teacher pronounces any vowel in the way he or she chooses (long, as if it were "flowing" or short, as if it was "jumping"), and the children use pieces of tissue paper to encode the sounds they hear.

## 2. I train mines – I encode emotions:

Before starting the exercise, the teacher discusses the meaning of individual facial expressions and then arranges the pictures in an exemplary rhythm, e.g. smile, smile, sadness, smile, smile, sadness, smile, smile, sadness. Children recreate the rhythm using facial expressions. The same game can be done by saying only the name of the emotion, without showing the picture.

## 3. Coded Dictation:

Important! - Before starting the task, children must mark their left hand with a terrycloth. One sound means one step.

- a) On-the-go version for the whole group
- The teacher establishes the sound codes played on the instruments that correspond to the



specific movement of the children:

- playing the drum - you move forward
  - playing the rattle - you go to the right
  - playing the tambourine - you go to the left
- "When I clap, you go backwards.

For example, the facilitator plays twice on the drum, once on the rattle, claps twice, twice on the drum, once on the rattle, claps twice, and the children follow the steps according to the decrypted code. After practicing the moves, you can make the task more attractive by hiding a "treasure" in the room.

Then, one of the children can play the sound commands, and the whole group can decode the cipher and move around the room according to the guidelines.

**b) Version with glued truss on the floor – we stick the truss with paper tape:**

	meta			
		start		

One child stands on the "start" field, the teacher uses codes (single sounds) to guide the child to reach the finish line. To spice up the task, the finish line can be changed. If the children do well in this task, they can pair up. One child gives commands with sounds so that the other one gets to the finish line as quickly as possible.

**c) Table version.**

The children follow the instructions on the truss (with the beginning clearly marked) according to the sound code:

- Playing the drum – one square up
- playing the rattle – turning left
  - playing the tambourine – turn right
- one clap – one square down

One instrument sound means one movement (arrow) across the field according to the code.