RIDEX

Co-funded by the Erasmus+ Programme of the European Union

SULTAN OF ELEPHANTS AND GIMPY RED BEARDED ANT THE VICTORY

S18
T4
D3
L1 P3

Focus on:

- Spatial orientation (D3)

Task 1: What does the scene look like?
Students create elements of the scene.
Every solution is good!
Any kind of tool and material can be used!
You can use the ideas and the list of materials from the Idea Bazaar, use your own ideas or just let the children to solve the problem using their creativity.

Idea Bazaar – some ideas:

- Building scene out of ArTeC Blocks
- Building scene out of recycled materials
- Drawing
- Creating computer graphics

For details of the different solutions, see the Idea sheets!

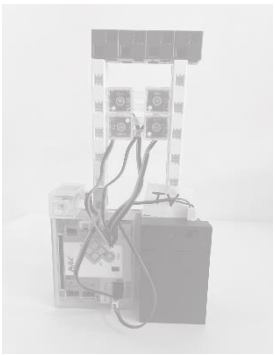
Developmental fields:

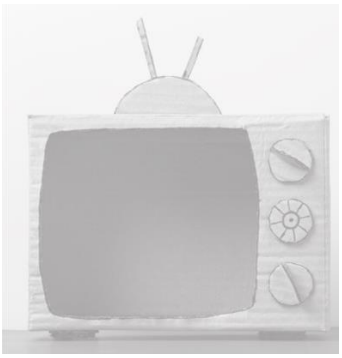
In focus:

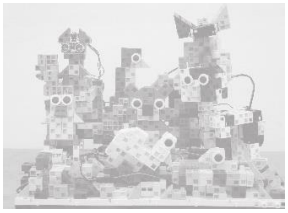
- Fine motor skills
- Spatial orientation
- Creativity

In addition:

- Attention concentration
- Subject concentration – Natural Sciences
- Talent development







Task 2: What does a puppet with movable limbs look like?

Students create animal figure with movable limbs.
Every solution is good!
Any kind of tool and material can be used!
You can use the ideas and the list of materials from the Idea Bazaar, use your own ideas or just let the children to solve the problem using their creativity.

Idea Bazaar – some ideas:

- Building a puppet out of ArTeC Blocks
- Cutting and binding a cardboard puppet
- Drawing series
- Animation editor

For details of the different solutions, see the Idea sheets!

Developmental fields:

In focus:

- Fine motor skills
- Spatial orientation
- Creativity

In addition:

- Attention concentration
- Subject concentration – Drawing, IT
- Talent development

How to manage output:

Hang the pictures on the wall, on a big poster, and ask the children to arrange them according to a rule they decide.
Store the objects in a wardrobe, to protect them from falls. Attach a label with the name of the group!

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THE VICTORY

S18
T4
D3
L2 P3

The ants built a big palace for Sultan of Elephant and worked under his orders, but they forgot who they were and acted like elephants. When they heard a song, they remembered their freedom and rebelled against Sultan of Elephant. The elephants defeated them, destroyed their homes, but the ants, led by Red-Bearded Lame Ant, planned a clever underground war. The ants dug tunnels secretly, built homes, and prepared large pits in the forest. Red-Bearded Lame Ant bravely challenged Sultan of Elephant, declaring war. The ants tricked the elephants into falling into pits, defeating them. At the end when Sultan of Elephant heard what happened to his army, he got angry and made a big jump, causing the ground to shake. But he didn't know that the ants had dug under his palace, too! So the Sultan of Elephant and Ulukepez fell into the pit under the palace.
The ants celebrated their victory, shouting, "We are ants!" They were free, living happily and safely in the forest.

Focus on:
- Spatial orientation (D3)

Goals of the lesson:
- text comprehension
- problem solving
- decision making
- organizing group work

Main features and interactions of the characters

Character	Features	Interactions
Sultan of Elephants	Walks, talks	Together they act according to the information of the story.
Red bearded Ant	Walks, talks	

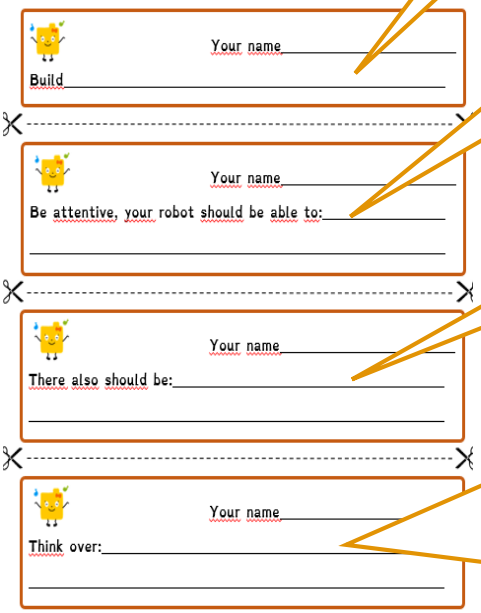
How to use the character card:
Each student fills in his/her own Character card:
- writes the name of the character
- their features, movements, reactions, etc.
- collects the elements of the environment, other accessories, things to be built
- thinks over the phases, tools and materials of the robot's building

Students can use more pieces of each part of the Character card if needed!

Suggestions:
- Each student should try to draw a diagram to summarize the logical arguments of the Red-bearded ant and the sultan of elephants. Illustrations are extremely useful as they visually represent situations.
- Ask students to discuss and create stories: How else could ants beat elephants, other than digging under the palace?
- Could the sultan of elephants and the other elephants understand and prevent this secret plan?

Knocking down a big elephant
How would you knock down an elephant in real life? What methods would you use? Build the elephant using ArTeC blocks or other materials and animate your awesome elephant knockdown plans from this model.

Suggested materials
- ArTeC Blocks (at least the 112 pcs set)
- Arts&crafts materials
- White paper, pencil, folder
- Vignettes in different colors



Sultan of elephants
Red bearded ant
Ulukepez

e secret plan of the ants
Elephants falling into pit

under the palace
hidden pits

The main actions of the story
Divide the text segment into pieces
Make a list about things needed
Media files needed

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P4

Suggested materials
- ArTeC Blocks (at least the 112 pcs set) and ArTeC robotics set (1 Studuino motherboard, 4 servo motors, 2 LEDs – 2 Touch sensors, 1 Buzzer, 1 Sound sensor), baseplates, gears, drive rails
- Mindmap or Chart draft template
- Storyline template
- pencil

Focus on:
- Spatial orientation (D3)

Goals of the lesson:
- fine motor skills,
- problem solving,
- decision making

How to fill in the Robotic card?
- Choose robot's „activity" and its programming complexity according to the Character task card, the developmental aim and the programming level that fits the child's skills.
- More Robotic cards can be filled in if needed (for clarification or for differentiation).
- Fill in the robot cards in the target language!
- Not all columns of the table need to be filled in, only those that are relevant to the robot's particular operation.
- Based on each row of the table, use grammatically correct sentences to describe the robot's operation in the target language.

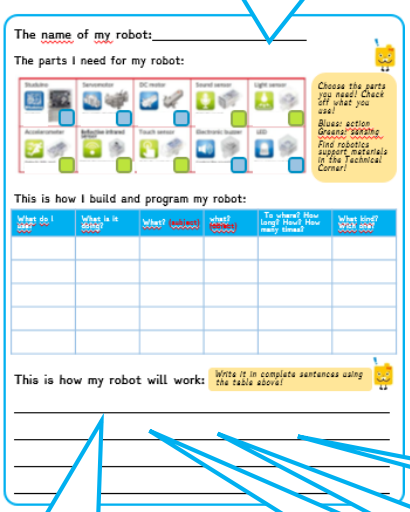
Suggestions

Design a hidden mechanism under the palace.

What kind of system should you design to bring the sultan of the elephants under the palace? Students design this fall scene using ArTeC blocks. The space created by a door that opens downwards or a brown cover when the sultan of the elephants arrives.

Triumph of the Ants
- Imagine what kind of celebration the ants will have eating the elephants. How can we use gestures and celebration elements to show their joy? How can we use ArTeC blocks, balloons, confetti together in this victory celebration phase?

Ants
Elephants



Related topics in the Technical corner
- Programming servo motor
  - Moving the arm to a given angle (3.a)
  - Repeated movement of the arm for a number of times (3.b)
- Testing and programming Touch sensor (4.a, 4.b, 4.c)
- Testing and programming Sound sensor (9.a, 9.b)
- Using LED (5.a, 5.b, 5.c)
- Using Buzzer (6.a, 6.b)
- Using variables (11.a)
  - Conditional branch (11.2)
  - Counting (11.c)
- Using functions (12.a)

Traditional puppetry with axes, figures built from building blocks.

PROG1

Programmed puppet theatre with a special solution.

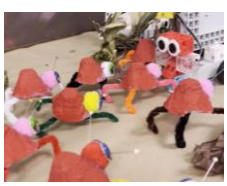
PROG2

The celebration of the ants and the Sultan of the Elephants and Ulukepez appear on a stage moving on drive rails.

PROG3

A puzzle-like scene that starts on sound.

PROG4



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Ideas for robots on different programming levels

PROG1	PROG2	PROG3	PROG4
Traditional puppetry with axes, figures built from building blocks.	Programmed puppet theatre with a special solution.	The celebration of the ants and the Sultan of the Elephants and Ulukepez appear on a stage moving on drive rails.	A puzzle-like scene that starts on sound.

Defeat of the Sultan of Elephants

P1 Puppeteering with figures

The main characters in the scene (Sultan of Elephant, Ulukepez and the Red Bearded Ant) are built heads movable on axes. The ant army and the elephant army are composed of mini-figures. The setting is the forest tunnel and the palace. All the details of the text can be stunned in this way.

P2 Motorised puppet theatre

- The device is powered by 2 DC motors, 2 touch sensors to activate them separately and 2 LEDs to flash while the DC motors are moving.
- The red-necked ant also comes with 1 buzzer, which sounds briefly after the engine stops and the LED stops flashing.
- The Sultan of Elephants and Ulukepez are on a motorbike and here the figure moves in a larger arc, symbolizing that they are falling into the pit.

P3 Puppet theatre on a stage moved on drive rail

- 2 servo motors move the drive rails inwards and outwards. These motors are triggered by 1 IR photoreflector when an ant is in front of them. Pressing 1 touch sensor resets the robot to its home position.
- The red-necked ant is mounted on 1 servo motor, moves to the centre and 1 LED flashes. When it stops, 1 buzzer beeps briefly.
- The Sultan of Elephants and Ulukepez fall into the pit by moving 1 servo motor. During their fall, 1 LED flashes.

P4 Sound-driven, jigsaw puzzle-like puppet theatre

- On 1 sound sensor (a clap), the ants move forward on a drive rail with 1 DC motor, while the tunnel bends over them with 2 servo motors.
- A red-necked ant turns on 1 servo motor while 1 LED flashes and 1 buzzer sounds.
- The Sultan of Elephants and Ulukepez fall into the pit moved by 2 servo motors and 1 LED flashes.