

VUK

STUP AND KARACK – VUK'S FIRST HUNT (T3)

S7
T3
D6
L1 P3



In focus:

- Computational thinking – life skills (D6)

Task1: Make Vuk's family tree! Use different technics and tools! Make your own family tree too!

Every solution is good!

Any kind of tool and material can be used!
You can use the ideas and list of materials from the Idea Bazaar, come up with your own ideas or just let the children be creative.

Idea Bazaar – some ideas:

- Create family trees using different technics (I1)
- Collect leaves and use them to make animal pictures (I3)
- Search for tracks in the woods, use the TRACKS memory card (I7)

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



Developmental fields:

In focus:

- Social skills
- Attention
- Creativity
- Spatial orientation

In addition:

- Nature conservation
- Attention development
- Life experience

Task2: Act it out! Imagine a conflict, find solutions to it, how you can solve it peacefully. Discuss what was the source of the conflict? What are the possible outcomes of a problem? etc.

How do we express our emotions, what can we express through our behaviour?

Every solution is good!

Any kind of tool and material can be used!
You can use the ideas and list of materials from the Idea Bazaar, come up with your own ideas or just let the children be creative.

Idea Bazaar – some ideas:

- Situation game(I5)

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

Developmental fields:

In focus:

- Social skills
- Fine motor skills
- Spatial orientation
- Creativity
- Algorithmic thinking



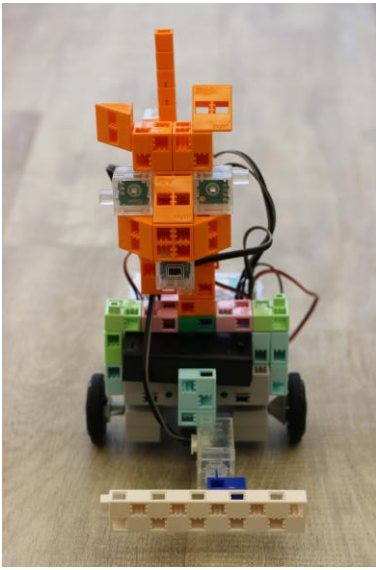
How to manage output:

The groups should try out the board games and other groups have made too. Make them available for other classes to try out in nature conservation/environmental education lessons or on Eco-days. The finished animal pictures and family trees should be displayed on the school's bulletin board. Label the board games with the name of the group!

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STUP AND KARACK – VUK'S FIRST HUNT (T3)

S7
T3
D6
L2 P3



In focus:

- Computational thinking – life skills (D6)

Goals of the lesson:

- text comprehension
- problem solving
- decision making
- organizing group work

Suggestions

- Discuss how conflict can be resolved!
- Brainstorm how they can use blocks, colours etc. to show the differences between the foxes, their age, etc...

Main features and interactions of the characters

Character	Features	Interactions
Stup, fox	Angry, cowardly	Flees
Karack, fox	Protective, brave, aggressive	Attacks, protects Vuk
Vuk, fox	Afraid, angry	Protects his prey

Vuk may had let Myu get away, but he did catch Tash. He pulled the duck out from the water.

„What's Karack going to say?“ he thought, excited for the praise. He heard movement, thinking Karack was coming, but he suddenly felt the smell of an unfamiliar fox.

The other fox snarled at Vuk:
– Whose son are you? And what are you doing in my hunting grounds?

The little fox got angry.

– I am Vuk, son of Karg, and I'm not giving you Tash. I caught it – so it's mine!

The other fox yelled at him:
– Get out of my sight!

He started towards Vuk to take his prey from him. But suddenly, the wind shifted and the foreign fox halted. Then he spoke again:
– So, you're the son of Karg and Karack's little nephew. Karack's the first among foxes and this hunting ground is his. Vuk didn't understand the stranger's behavior. Suddenly Karack appeared and dived at the other fox, ripping into his fur.

– Go now, Stup. While you still can! – he said.
Stup fled crying into the reeds. But he yelled back angrily:
– Karack, you toothless dog! Never fear, your nephew and I are sure to meet again. And then I'll shake him out of his skin!

How to use the character card:

Each student fills in their 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!

Stup, Karack

Hungry
Fast
Agile
Careful


Trees, leaves
Hills
Forest
Food

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




Your name _____

Build _____




Your name _____

Be attentive, your robot should be able to: _____



Your name _____

There also should be: _____



Your name _____

Think over: _____

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T3
D6
L3-4
P4



Suggested materials

- ArTeC Blocks (at least the 112 pcs set) and ArTeC robot set (2 Studuino motherboards, 3 Touch Sensors, 4 LEDs, 4 DC motors, 2 IR Photoreflectors, 1 servo motor, 1 Buzzer)
- Mindmap or Chart draft, Storyline
- Character cards and Robotic task card template
- Pencil

How to fill in the Robotic card?

Choose the 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).

Legs - running, speed of movement - Stup, Karack

Robotic task card

Your name _____

Build a robot that can move it's _____

Use actuators and sensors for building:
 Senses are green
 Actions are blue
 Choose the needed parts!
 Check the boxes!

Studuino	Servomotor	DC motor	Sound sensor	Light sensor
Accelerometer	Infrared	Touch sensor	Electronic buzzer	LED

Build and program so that the robot _____

Use the Technical Corner for robotic helping materials!

In focus:

- Computational thinking – life skills (D6)

Goals of the lesson:

- text comprehension
- problem solving
- decision making
- expression of movement

Suggestions

Attack - Karack

- Discuss with the children what movements can be used to express an attack
- What sensors can be used to better express aggressive behaviour (BUZZER, LED, etc.)

Retreat - Stup

- Discuss with the children what movement can be used to express a retreat
- Discuss with the children what emotions can be expressed with sensors. Collect ideas e.g. joy, fear, anger etc...

Related topics in the Technical corner

- Programming DC motor (2.a, 2.b)
- Programming servo motor
 - Moving tail to a given angle (3.a)
- Programming Touch Sensor (4.a)
 - Starting and stopping DC motors by pressing different buttons or Touch Sensors (4.b)
- Testing and programming IR Photoreflector (7.a, 7.c, 7.e)
 - Detecting obstacles(7.b)
- Using LED (5.a)
 - Flashing (5.b)
- Programming Buzzer
 - Setting pitch and duration of sound, silences (6.a, 6.b)

Stup and Karack - Mechanical figures

Automatically moving Stup and Karack figures

PROG1

„Puppet show” with the two foxes

PROG2

The two foxes meet. Karack forces Stup to retreat - Touch sensor detection

PROG3

The two foxes meet. Karack forces Stup to retreat – proximity detection, random movements

PROG4

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P5

Ideas for robots on different programming levels

Stup and Karack - Mechanical figures

Automatically moving Stup and Karack figures

PROG1

„Puppet show” with the two foxes

PROG2

The two foxes meet. Karack forces Stup to retreat - Touch sensor detection

PROG3

The two foxes meet. Karack forces Stup to retreat – proximity detection, random movements

PROG4



Karack and Stup

P1 Mechanical or automatic foxes

- Building figures

OR

- Stup and Karack on separate robots, equipped with 2 DC motors each
- Both robots move automatically when switched on: Karack forwards, Stup backwards

P2 Puppet show with the foxes

- Two robots with 2 DC motors, 2 Touch sensors and 1 Buzzer each
- Stup and Karack figures mounted on the robots
- Both robots start at the press of one Touch sensor (Stup backwards, Karack forwards), stops at the press of the other, while the Buzzer is playing
- Each have 2 green LED's in their eyes, continuously lit

P3 Building and coordinated movement of figures

- **Karack** keeps attacking Stup and forces him to retreat
- Starts at the press of a Touch Sensor - moves forward (slowly)
- Touch Sensor built into the front stops him on impact (for a few seconds), then he continues forward
- 2 LEDs (green) continuously lit – eyes
- **Stup** moves back when Karack attacks
- Touch Sensor - program start
- Press of front-mounted Touch Sensor moves him back (quickly) (for a few seconds), then he stops
- 2 LEDs (green) continuously lit – eyes

P4 Foxes reacting to approach

- Robot design similar to P3, but with IR Photoreflexor in front instead of Touch sensor, Stup's tail attached to servo motor
- Karack moves forward at random intervals, when IR Photoreflexor detects Stup, he stops, eye lights up. When Sut moves away, he waits for a random duration, then his eye goes out and he starts moving forward
- Stup stands still, tail pointed upward. When he senses Karack, he lowers his tail, his eye lights up, moves backwards for a random amount of time, then he stops, his eye goes out, and he raises his tail

