

VUK KARG HUNTS SU (T1)

S7
T1
D6
L1 P3



In focus:

- Computational thinking – life skills (D6)

Task1: Discuss all the things provided by the forest! Think back to the last time you were in the forest! What animals did you see? What kinds of nests, hiding places, burrows did you see? Did you find any tracks in the forest? Discuss the characteristics of the forest in different seasons!

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:

- Learn about forest types, using the FOREST and/or TRACKS memory cards (I4)
- Make costumes and masks and act out parts of the story (I3)
- Make a food chain (I1)

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 skills

Task2: Imagine and act out two situations: when animals show what outdoorsmen and conservationists are like in the forest, and when they show what people who are noisy and don't care about nature are like in the forest! How did your behaviour differ in the two situations?

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:

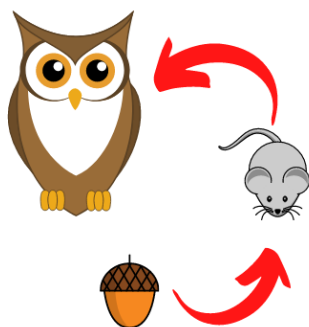
- Creating a nature protection board game (I7)
- Situation game (I5)

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

Developmental skills:

In focus:

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

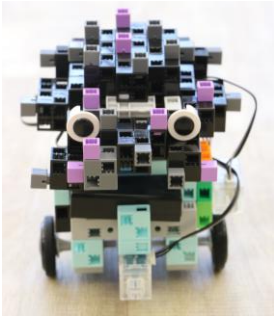


How to manage output:

The groups should try out the board games and memory cards other groups have made too. Make them available for other classes to try out in nature conservation/environmental education lessons or on Eco-days. Label the board games with the name of the group!

VUK KARG HUNTS SU (T1)

S7
T1
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 what the text tells us about the diets of the fox and the hedgehog.
- Compare the food chain you have just discussed with the food chain you made in the previous lesson.
- Show the children videos of the hedgehog's movement.

Main features and interactions of the characters

Character	Features	Interactions
Karg, fox	Hungry, fast, agile	Attacks, flinches
Su, hedgehog	Cautious	Flees, ducks, curls up

„Aha...” he whispered to himself, „Su’s coming this way.”

His weariness forgotten, Karg crouched low and watched Su, the unsuspecting hedgehog, as it scurried into the clearing at the bottom of the mound.

Karg paused to weigh up his chances with Su. He knew that hedgehogs didn’t give up their meat without a fight. They had long, sharp spines sticking out in a thousand different directions and at the slightest hint of danger, they would roll up into a ball, pulling in their arms and legs, making them impossible to get at.

„I’ll spring on it and take off its nose,” thought Karg. „It’ll make a tasty snack and here it is, almost walking into my mouth.”

Su still hadn’t sensed the danger. Karg leapt on it with lightning speed.

Unfortunately for him, Su’s head was very small and Karg jumped backwards as Su’s spines pricked him on the foot and cut open his nose. Su, the hedgehog, rolled up into its thorny fortress.

Karg was steaming with rage. „If only I wasn’t in a hurry, I’d strip you of that famous hide of yours!” He gave the hedgehog an angry shove, only just managing to suppress the urge to make a second attack on the spiky ball.

Su rolled up even tighter and remained motionless. Karg licked his bleeding nose.

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!

Karg, Su

Hungry
Fast
Agile
Cautious


Trees, leaves
Hill
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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T1
D6
L3-4
P4



Suggested materials

- ArTeC Blocks (at least the 112 pcs set) and ArTeC robotics set (2 Studuino motherboards, 4 Touch Sensors, 2 LEDs, 1 Buzzer, 2 servo motors, 2 DC motors)
- Mindmap or Chart draft, Storyline
- Character cards and Robotic task card template
- Pencil
- Video of hedgehog movements

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).

In focus:

- Computational thinking – life skills (D6)

Goals of the lesson:

- text comprehension
- problem solving
- decision making
- expressing movement

Suggestions

Attack, retreat - Karg

- Discuss with the children how foxes move
- Build simple moving figures from ArTeC blocks and connecting elements

Curling up - Su

- Discuss how to achieve a curling-up motion with blocks

Legs - running – Karg
Body - curling up - Su

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)

Stepper motor	Servomotor	DC motor	Sound sensor	Light sensor
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accelerometer	Ultrasonic infrared	Touch sensor	Electronic buzzer	LED
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Build and program so that the robot _____

Use the Technical Corner for robot's helping materials!

Related topics in the Technical corner

- Programming DC motor (2.a, 2.b)
- Testing and programming Touch sensor
 - Starting and stopping DC motors by pressing the same or different buttons or Touch Sensors (4.b, 4.c)
- Programming servo motor
 - Moving elements mounted on a servo motor to a given angle (3.a)
- Using LED (5.a)
 - Flashing (5.b)
- Using Buzzer (6.a)

Karg approaches Su, stops and cries out

PROG1

Karg moves forward to Su, stops there and cries out

PROG2

Karg pokes Su with his nose. Su stings him and curls up, causing Karg to cry out and back away - puppet show

PROG3

Karg pokes Su with his nose. Su stings him and curls up, causing Karg to cry out and back away – automatic movements

PROG4

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P5

Ideas for robots on different programming levels

Karg approaches Su,
stops and cries out

PROG1

Karg moves forward to
Su, stops there and
cries out

PROG2

Karg pokes Su with his
nose. Su stings him and
curls up, causing Karg to
cry out and back away -
puppet show

PROG3

Karg pokes Su with his
nose. Su stings him and
curls up, causing Karg to
cry out and back away –
automatic movements

PROG4



Karg and Su's movements

P1 Automatic movements

- Su is a built figure
- Karg rolls forward for some time when switched on, stops in front of Su, then makes a sound with a Buzzer
- Then he backs away

OR

- Both figures are just built and the scene is puppeted by the children

P2 Simple detection

- Su is a built figure
- Karg is equipped with a Touch Sensor and Buzzer
- Karg rolls forward when switched on until the Touch Sensor is depressed (collision with Su).
- Then he stops and makes a sound with the Buzzer
- Then backs away

P3 Puppet show

- Su and Karg mounted on separate robots
- Both robots are equipped with a Touch sensor - you can puppet them
- Karg moves forward while the Touch sensor is pressed down, stops when it is released, makes a sound with Buzzer, then moves backwards when the other Touch sensor is pressed
- Su curls up using 2 servo motors when one touch sensor is pressed, straightens out when the other is pressed

P4 Construction and harmonic movement of figures

- Karg - moves forward, collides with Su, then cries out because he pricked his nose, then backs away, his eyes glowing green all throughout
- Starts at the press of the touch sensor - moves forward
- On impact the touch sensor on front is pressed, he stops and backs away, and Buzzer sounds to indicate crying
- 2 LEDs (green) are continuously lit – eyes
- Su - is attacked by Karg, causing him to curl up, then returns to his original state (after x seconds)
- Touch sensor starts the program
- The Touch sensor built on the front is pressed on impact, causing him to curl up using the 2 servo motors

