

BOBULA UNCLE VIRSONY (T4)



S16
T4
D2
L1 P3

Focus on:

- Graphomotor skills (D2)

Task 1: Make a fruit bowl

When a person is overweight?

Make a bicycle from fruit.

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:

- Talk about healthy eating.
- Make a fruit bowl (I9, I6)
- What is overweight and underweight? (I9)
- Turn fruit into a means of transport (I9)

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

Developmental fields:

Focus on:

- Social competences
- Fine motor skills
- creativity

In addition:

- Life skills
- subject – biology, art, lifestyle and practice



Task 2: Make a model of a street!

Make houses, transport, garden, playground!

Talk about neighbourhood relations.

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:

- They can use paper, drawing paper, fruit, coloured pencils, felt-tip pens, scissors, glue, fruit slicers, etc. (I8, I9)
- What is good neighbourly relations?
- What is the difference between living in a residential area or a detached house?

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

Take photos of the construction works in progress and finished.

Developmental fields:

Focus on:

- Fine motor skills
- Spatial orientation
- Creativity

In addition:

- Life skills
- Subject – math, art, technology education
- Talent development



Product management:

Organise the completed photos either online or printed on a bulletin board. If you have made notes, add any additional ideas you have left.

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Uncle Virsony

Uncle Virsony lived on Grandpa's street. Uncle Virsony was a blacksmith. And he was huge. It took Bobula as long to look from Uncle Virsony's toe to the top of his head as licking a moderately large lollipop. Uncle Virsony had a big round belly; if it started raining, Bobula could even hide underneath it, of course, if she had the courage. Uncle Virsony's legs were funny. Small and agile, like a pug. It wasn't easy for them, as they had to carry Uncle Virsony every day.

Instead of walking, Uncle Virsony usually sat on his old bike and pedaled in front of Grandpa's house. Twice a day. Bobula later found out that Uncle Virsony had horses, and he was pedaling to feed them. The only creature that didn't like Uncle Virsony or his clattering bicycle was Zamat, Grandpa's dog. Once, when Zamat was still new to the neighborhood, Uncle Virsony slowly pedaled in front of their house, and Zamat ran into the street and barked at Uncle Virsony's small, agile legs. Zamat almost got a piece of fabric from his pants, but Uncle Virsony thought he already had enough holes for ventilation. He calmly got off the bike and addressed Zamat in his deep voice:

- What's the matter, you little pumpkin-seed?

Uncle Virsony's breath made waves in Zamat's fur, as if a storm had hit. Only then did Zamat realize he hadn't been careful enough because next to Uncle Virsony's small legs, there was also a huge belly that now rose threateningly above him. In that moment, he turned on his heels and ran back behind the fence. Uncle Virsony, now completely calm, got back on his bike and continued on his way. Pipin, the rooster who often crowed about everything, witnessed the incident:

- Zamat, the rabbit-hearted dog!

Zamat later tried to play the hero, but it's easy to bark from behind the fence.

Focus on:

- Graphomotor skills (D2)

Goal of the lesson:

- Text comprehension
- Problem solving
- Decision making
- Organising group work

Suggestions

- Identify the characters in the text, with particular emphasis on the main plot points, character traits, emotions and movements.
- What is a healthy diet?
- The concepts of overweight and underweight
- What means of transport do people use in urban and rural areas?
- What kind of traffic signs do you know?
- How is the street name displayed?

character	Feature	Act
Zamat the dog	Small	Barks Runs Brave behind the fence
Uncle Virsony	Big-bodied Has a horse	cycling gets off the bike
Pipin the cock	watches what happens	crows

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!

uncle Virsony
Zamat and Pipin

arrive by bike
barks
runs
is discouraged

House
Fence

The main actions of the story

Divide the text segment into pieces

Make a list about things needed

Media files needed


 Your name _____
 I am building: _____


 Your name _____
 Make sure your robot is able to: _____


 Your name _____
 There also should be : _____


 Your name _____
 Think over : _____

BOBULA UNCLE VIRSONY (T4)



S16
T4
D2
L3-4
P4

Suggested materials

- ArTeC cubes (at least the 112 pcs set) and ArTeC robot set (2 Studuino motherboards, 4 DC motors, 2 servo motors, 2 servo motors, 2 LEDs, 8 Touch sensors, 1 IR photoreflexor), drive rails, gears, axes
- Mindmap or Chart draft, Storyline
- Character cards and Robotic task card template
- Pencil

Focus on:

- Graphomotor skills (D2)

Goal of the lesson:

- Text comprehension
- Problem solving
- Decision making
- Organising group work

suggestions

Cycling, barking

- Talk to children about the concepts of overweight and underweight
- Discuss the differences between urban and rural life
- What signs are used to control traffic?
- Build a bike from ArTeC blocks

How to fill in the Robotic card?

- Choose the robot's activity and the complexity of the program to match the child's abilities, based on the character card, the developmental aspect and the programming level.
- If necessary (e.g. for clarification or differentiation), additional robot cards can be filled in.
- Design the robot with several ways of building/programming!
- Complete the robot cards in the target language!
- Not all columns of the table need to be filled in, only those relevant to the robot's specific operation.
- Based on each row of the table, describe the robot's operation in the target language using grammatically correct sentences.

cycling
barking
arrival and

departure
dog attack
cock crowing

The name of my robot: _____

The parts I need for my robot:

Motor	Servo motor	DC motor	Sound sensor	Light sensor
Accelerometer	Temperature sensor	Touch sensor	Ultrasonic sensor	IR sensor

Choose the parts you need! Check off what you use!

Give an action
Create a story
Find robotics support materials in the Technical corner!

This is how I build and program my robot:

What do I see?	What is in the background?	What? (background)	What? (background)	To what? (background)	What? (background)

This is how my robot will work:

Write it in complete sentences using the table above!

Related topics in the Technical corner

- Programming DC motor (2.a, 2.b)
- Programming servo motor (3.a)
 - Synchronous movement of 2 or more servo motors (3.d)
- Testing and programming Touch sensor (4.a, 4.b, 4.c)
 - Remote control with 4 Touch sensors (4.d)
- Testing and programming IR Photoreflexor (7.a, 7.c, 7.e)
 - Using an IR Photoreflexor for detecting an object (7.d, 7.e)
- Using LED (5.a)
- Using random values (10.a)
- Using variables (7.a, 7.c, 7.e)
 - Conditional branching (7.d, 7.e)

Cycling figure that rolls automatically and can be steered on an axis

PROG1

Cycling figure that rolls automatically and can be steered on an axis, with 2 LEDs controlled by Touch sensors

PROG2

Cycling figure controlled by touch sensors and servo motors, with randomly flashing LEDs

PROG3

Cycling figure controlled by touch sensors and servo motors in his elbows. Reacts to the dog attack.

PROG4

BOBULA UNCLE VIRSONY (T4)



S16
T4
D2
L3-4
P5

Ideas for robots on different programming levels

Cycling figure that rolls automatically and can be steered on an axis

PROG1

Cycling figure that rolls automatically and can be steered on an axis, with 2 LEDs controlled by Touch sensors

PROG2

Cycling figure controlled by touch sensors and servo motors, with randomly flashing LEDs

PROG3

Cycling figure controlled by touch sensors and servo motors in his elbows. Reacts to the dog attack.

PROG4

Uncle Virsony cycling

P1 Building Uncle Virsony with bicycle

a) Build Uncle Virsony on a bicycle according to the assembly guide. In the guide you can see a sample, but the figure can be modified at will.

- The bicycle is moved by a DC motor directly connected to the battery case. The front wheel and handlebars are attached to the rest of the bicycle on an axis.
- The motor moves when the battery case is turned on, and the bicycle can be steered by turning the handlebars on the axis.
- Build the characters of the scene (Zamat the dog, fence, rooster)

OR

- Build a robot similar to the one detailed in part a), but connect the DC motor to a motherboard.
- The motor starts when the robot is turned on, and the bicycle can be steered by turning the handlebars on the axis.

Additionally we can build Zamat the dog, the fence and the rooster.

P2 Controlling Uncle Virsony on the bicycle

- We build Uncle Virsony on the bicycle as in P1 b).
- We connect an LED to each of the two handlebars, and two Touch sensors to the back on long cables.
- The robot automatically starts when turned on. Each Touch sensor lights up an LED when pressed.
- The kids have to steer the moving robot in the direction of the lit-up LED.

P3 The attack on Uncle Virsony

- We build Uncle Virsony on a bicycle as in P2. Instead of an axis, the handlebars are mounted on a servo motor.
- We connect 3 Touch sensors to the robot.
- The robot starts when pressing one button, and stops when it is pressed again.
- One or other of the LEDs will light up at random.
- Using the other two Touch sensors, steer the bicycle in the direction of the lit-up LED (the servo motor turns left when pressing one Touch sensor and right when pressing the other). When neither Touch sensor is pressed down, the bicycle moves straight forward.

P4 Zamat attacks Uncle Virsony

- We build Uncle Virsony on a bicycle as in P3, but the handles are mounted on an axis. However, we build a servo motor into each of the figure's elbows.
- We attach an IR Photoreflexor at the front of the bicycle.
- We build Zamat the dog as a robot with 4 Touch sensors.
- The robot starts and stops at the press of a Touch sensor, similar to P3.
- While moving, pay attention to which direction Zamat approaches Uncle Virsony from, and use the other two Touch sensors to steer the robot in the opposite direction, similar to P3.

