

BOBULA THE TRAP (T5)



S16
T4
D8
L1 P3

Focus on:

- Other subjects – Biology (D8)

Task 1: Make a bouquet!

The bouquet can be made of paper or fruit. What can we put in the composter?

How to move around with tools in hand and how to use tools without accidents?

Every solution is good!

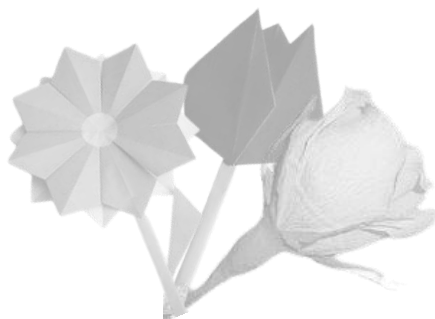
Any kind of tool and material can be used!

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 the orchard and flower garden.
- Make a memory game (I10)
- What is a composter?
- Make fruit into a means of transport (I9)

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



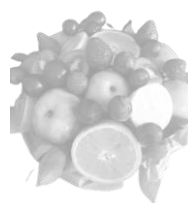
Developmental fields:

Focus on:

- Social competences
- Fine motor skills
- Creativity

In addition:

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



Task 2 : Plant a plant!

Plant flower seeds, flowers, trees, bushes.

„Plant" paper flowers, balloon flowers.

Talk about what to plant and where to plant it.

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 living space? How do plants end up excluded from their living space?
- It is worth discussing the purchase with children and parents.

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.

BOBULA THE TRAP (T5)



**S16
T4
D8
L2 P3**

The Trap

In front of Grandpa's house, a rosehip bush was growing. In winter, Grandma made a delicious tea from the rose hips. Bobula and Safi could hide behind the bush. From the rosehip bush they could see the whole street. In spring, the bower had an intoxicating smell, as lily-of-the-valley flowers grew near it. Small white pearls clustered around the stems among the elongated light green leaves. Grandma's garden also had tulips of various colours, leander and colourful geraniums, but Grandpa liked the gentle little lilies of the valley best. He admired them several times a day.

Bobula was very fond of cottage cheese bars. She was fiddling with the wrapper of one when Safi came over. As usual, she had an idea. – What if we pierced the wrapper, threaded a thin string through it and put it on the street? If someone comes along and tries to pick it up to eat it, we'll pull the string. It'll be fun.

Bobula nodded enthusiastically, although her stomach protested fiercely. She asked Grandpa for string. They set the trap without a problem and put it out in the street. They placed it so that all passers-by would notice it, but close enough to them in case they had to rush to the rescue of the sweet bait. They then positioned themselves behind the rosehip bush. At regular intervals they took turns in the sentry post. Bobula held the string for a while, Safi for a while.

– Don't move so much, or we'll be caught – whispered Safi.

– I've been attacked by an ant! I had to remove it from the bastion area, purely for safety reasons – Bobula replied.

She was a bit bored, because there was not a soul on the street except the ant. Bobula looked at the cottage cheese bar with increasing sadness and decided to go inside and have at least a strawberry.

At that moment the postman turned into the street. He was pulling a blue cart behind him. Bobula and Safi watched his every move with wary eyes. The postman noticed the cottage cheese bar. He smiled and licked his lips. Bobula began to worry that she was going to lose the delicious treat.

The postman approached, bent down, but just before he could get his hands on the sweet prize, he stopped, smiled and moved on. The two tricksters didn't understand what had happened.

Focus on:

• Other subjects – Biology (D8)

Goal of the lesson:

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

character	feature	act
Bobula	likes cottage cheese sticks	ties a string to the cottage cheese stick
postman	adult	pulls a cart licks his lips
Safi	smart	hides behind the bush

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 living space of humans
- What kind of flower gardens can be created in towns and villages?
- What is the job of a postman?
- Write a letter to your friend. Make a mailbox and envelope.

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!

**Bobula
Safi
Postman**

**street
bush
Bobula and Safi
postman**

**Arrive by bike
Pulling the cart
Hide behind the bushes**

**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 THE TRAP (T5)



S16
T4
D8
L3-4
P4

Suggested materials

- ArTeC Blocks (at least the 112 pcs set) and ArTeC robotics set (at least Studuino motherboard, 3 DC motors, 3 servo motors, 3 LEDs, 1 Sound sensor, 1 Touch sensor, 1 IR Photoreflexor), drive rails, gears, axes
- Mindmap or Chart draft, Storyline
- Character cards and Robotic task card template
- Pencil

Suggestions

Gardening, writing letters

- Talk to children about communicating in writing
- Talk about what urban and rural children do for fun.
- What are the advantages of living in a village?
- Build a cart, flowers with ArTeC blocks

Focus on:

- Other subjects – Biology (D8)

Goal of the lesson:

- Problem solving
- Decision making
- Body image

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
hiding behind
the bush

pulling the cart
pulling the treat

The name of my robot: _____

The parts I need for my robot:

Robotics	Sensors	Actuators	Control system	Light sensor

Choose the parts you need! Check off what you use!
 Blue: action
 Green: sensing
 Find robotics support materials in the Technical Corner!

This is how I build and program my robot:

What do I use?	What is it doing?	What? (action)	What? (sensing)	What? (control)	What? (light)	What? (sound)	What? (touch)	What? (other)

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, 3.b)
 - Synchronous movement of servo motors (3.d)
- Programming Touch sensor (4.a)
 - Remote control using 4 Touch sensors (4.d)
- Programming Buzzer (6.a, 6.b)
- Testing and programming IR Photoreflexor (7.a, 7.c, 7.e)
 - Using an IR Photoreflexor for detecting an object (7.d, 7.e)
- Testing and programming Sound sensor (9.a)
 - Activating robot using sound (9.b)
- Using variables (11.)
 - Counting (11.c)

Characters moving on axes, „fishing rod“
The girls crawl using a DC motor

PROG1

The girls hide behind the bush using a drive rail, the cottage cheese stick is dragged in using a DC motor

PROG2

Cottage cheese stick detects postman with an IR photoreflexor, is dragged away by a DC motor. The bush „shakes“ on a servo motor

PROG3

Postman bends down for the cottage cheese stick multiple times, the third time DC motor drags it behind the bush. Or: walking postman

PROG4

BOBULA THE TRAP (T5)



S16
T4
D8
L3-4
P5

Ideas for robots on different programming levels

Characters moving on axes, „fishing rod“
 The girls crawl using a DC motor

PROG1

The girls hide behind the bush using a drive rail, the cottage cheese stick is dragged in using a DC motor

PROG2

Cottage cheese stick detects postman with an IR photoreflexor, is dragged away by a DC motor. The bush „shakes“ on a servo motor

PROG3

Postman bends down for the cottage cheese stick multiple times, the third time DC motor drags it behind the bush. Or: walking postman

PROG4

The postman arrives in the street, the girls are waiting behind the bush

P1 The girls pull in the cottage cheese stick

- We build the characters (Bobula, Safi, postman), the rosehip bush, and a small hand-crank device similar to a fishing rod.
 - The heads and arms of the girls rotate on axes, the postman can bend down on an axis.
 - We affix the cottage cheese stick to the fishing rod using a string, allowing it to be pulled into the bush.
- We build the girls the same way as the tortoise in the construction manual. We connect a DC motor directly to the battery case.
 - When switched on, the girls crawl out from behind the bush.

P2 The girls hide behind the bush

- We build the rosehip bush, and behind the bush we build Bobula and Safi using a vertical drive rail construction driven by a DC motor. We build the postman as in P1.
- We build the fishing rod dragging the cottage cheese stick as in P1, but connected to a DC motor.
- We connect the 2 DC motors and a Sound sensor to a motherboard.
- The robot activates at the sound of clapping: the cottage cheese stick is pulled behind the bush, and the girls emerge from behind the bush.

P3 The postman bends down for the treat

- We build the scene as in P2. We equip the rosehip bush with 2 servomotors.
- We build the postman as a robot controlled by 5 Touch sensors, and equipped with a Buzzer.
- We connect an IR Photoreflexor to the cottage cheese stick.
- We guide the postman to the cottage cheese stick using a 4 Touch sensor remote control, then have it make a noise at the press of the fifth Touch sensor. The IR Photoreflexor detects the postman above it, and the DC motor reels the cottage cheese into the bush.
- Meanwhile, the bush shakes using the servo motors.

P4 The postman tries multiple times

- We build the robots as in P3
 - The postman is built as a robot controlled by 5 Touch sensors, and equipped with a Buzzer. We build a servo motor into his waist, allowing him to bend down.
 - We guide the postman to the cottage cheese stick using a 4 Touch sensor remote control, then have it bend down and then come back up at the press of the fifth Touch sensor.
 - The other robot detects the bending postman using the IR Photoreflexor, and keeps count of how many times he has bent down.
 - After the third time the postman bends down, the other robot pulls in the cottage cheese stick, the bush shakes (as in P3) and the girls make a sound with the Buzzer.
- The postman is a walking robot
 - We connect 3 servo motors to the motherboard and use them to move his two legs and his waist.

