

THE OLD WOMAN'S DAUGHTER AND THE OLD MAN'S DAUGHTER THE LITTLE DRAGONS (T2)

S14
T2
D7
L1
P3-6

Focus on:

- Physics, engineering (D7)



Task1, 2: How does the environment look like?

Students create elements of the countryside landscape or family life 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 environment out of ArTeC Blocks
- Building environment out of recycled materials
- Drawing
- Creating computer graphics

For details of the different solutions, see the Idea sheets! (I1, I2)

Developmental fields:

In focus:

- Fine motor skills
- Spatial orientation
- Creativity

In addition:

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

Task 3, 4: How do the characters look like?

Students create a characters using different means or techniques.

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 people out of ArTeC Blocks
- Building people out of recycled materials
- Creating computer graphics, animations
- Drawing

For details of the different solutions, see the Idea sheets! (I3, I4)

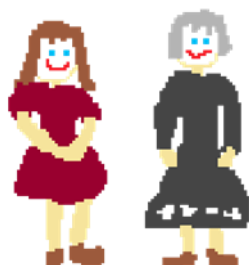
Developmental fields:

In focus:

- Social competences
- Graphomotor skills
- Creativity

In addition:

- Life skills
- Subject concentration – Citizenship
- Talent development



How to manage output:

Store the objects in a wardrobe, to protect them from falls. Attach a label with the name of the group!

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Focus on:

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Task 5: Learn about the life of old times

Students make virtual visit to Folk Museums in order to learn about old wells and furnaces. They can draw or build them in small models or large structures. Have them be creative, use big variety of materials.

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 the structure out of ArTeC Blocks
- Using recycled materials
- Drawing

For details of the different solutions, see the Idea sheets! (I5)

Developmental fields:

In focus:

- Fine motor skills
- Creativity
- Spatial orientation

In addition:

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

How to manage output:

Store the objects in a wardrobe, to protect them from falls. Attach a label with the name of the group!

Task 6: Behaviors in different situations

Students discuss the situations where people help each other.

Every solution is good!

You can use the Act it out! cards from the Idea Bazaar


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Some ideas – Behaviors in different situations

Act it out!
 There are two children in a family, one is good, hardworking, the other is lazy. They are asked to help with the housework. How do they act?
 Find out and play out a situation with your friend, one of you is hardworking, the other just trying to find excuses not to work.

Act it out!
 The siblings are asked for help by other people. How would they react?
 If you help others, they will help you in return when you need them. How are the two siblings helped by others in need?
 Find out and play out a situation with your friend!

Let's have some fun!
 It is your turn to be hardworking.



<https://ro.pinterest.com/pin/313703939301993478/>

Idea Bazaar – some ideas:

- Find out and dramatize a situation where two very different siblings are asked to help

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

Cut out the situation cards! (I6)

Choose the focus that you want the children to deal with! Give them the appropriate situation card!

Help them to build the situation if needed!

Developmental fields:

In focus:

- Social competences
- Critical thinking
- Social skills
- Civics
- Text comprehension

In addition:

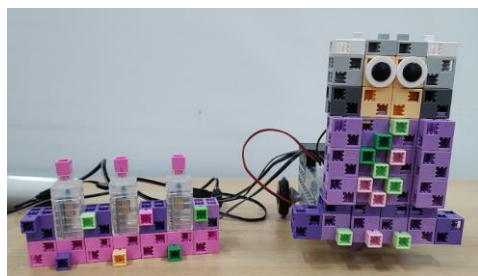
- Attention concentration
- Talent development

How to manage output:

Take a video record of the dramatized situation!

THE OLD WOMAN'S DAUGHTER AND THE OLD MAN'S DAUGHTER THE LITTLE DRAGONS (T2)

S14
T2
D7
L2
P1-P5



Focus on:

- Physics, engineering (D7)

Goals of the lesson:

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



A good girl was sent away from home by her father and stepmother, who had a lazy and mean daughter. Going out into the world she helped a puppy, a pear tree, a well and a furnace. One day she came to a green meadow, where from a little cottage a gentle old woman named Mother of the Forest greeted her. The old woman promised her that the next day she would not leave her house empty-handed, and the girl promised to look after the house and the old woman's children, who were beasts until the next day.

The next day, the old woman was satisfied and told the girl to go up to the attic and choose which chest she wanted. The girl saw all kinds of chests in the attic, one more beautiful than the other, but not being greedy, she chose the smallest and ugliest one and then left for home.

On the way back, the girl meets the puppy, the pear tree, the well, and the furnace, and each gave her something. Arriving home, the girl opened the box and out of it came herds of horses, cattle and sheep.

Suggestions:

- Discuss how human movements are made
- Make some movements together; children should perceive the phases of their own movements
- Collect information about country life in Romania about 100-150 years ago.
- Build a simple figures with movable legs, arms or mouth from ArTeC Blocks

Suggested materials

- ArTeC Blocks (at least as the 112 pcs set)
- Storyline template
- pencil

Main features and interactions of the characters

Character	Features	Interactions
Old man's daughter	Walks, talks	The have conversations.
Mother of the Forest	Walks, talks	
Characters who asked for the girl's help	walk, talk	Give something to the girl for her help.

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!

Old man's daughter
Mother of the Forest
Other characters

Walk
stop
talk
Raise a hand
Express opinions
Ask questions

House, beasts
dog
Pear tree
Well
Furnace

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


 Your name _____
 Build _____


 Your name _____
 Be attentive, your robot should be able to: _____


 Your name _____
 There also should be: _____


 Your name _____
 Think over: _____

THE OLD WOMAN'S
DAUGHTER AND THE OLD
MAN'S DAUGHTER
THE LITTLE DRAGONS (T2)

S14
T2
D7
L3-4
P4



Suggested materials

- ArTeC Blocks (at least the 112 pcs set) and ArTeC robotics set (1 or 2 Studuino motherboards, 4 DC motors, 3 IR Photoreflectors, 6 Touch sensors, 1 Buzzer)
- Mindmap or Chart draft , Storyline
- Character cards and Robotic task card template
- Pencil

Focus on:

- Physics, engineering (D7)

Goals of the lesson:

- fine motor skills,
- problem solving,
- decision making
- life skills

Suggestions

- Collect ideas about how the characters move.
- Collect ideas about how to represent the helping
- Build simple figures 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.

Arm (Mother of the Forest)
Tail (dog)
Branches (the pear tree)
Door (the furnace)

[illegible]

Related topics in the Technical corner

- Programming DC motor
 - Setting power, direction (2.a, 2.b)
 - Random movements (2.f)
- Using Touch sensors (4.a, 4.b)
 - Remote control made of 4 Touch sensors (4.d)
- Buzzer (6.a, 6.b)
- 7. IR Photoreflector
 - 7.a) Testing IR photoreflector
 - 7.b) Detecting obstacles
- Using random numbers (10.a)

The girl and the dog are directly driven by a DC motor. The mother/father, the pear tree, the well and the furnace are static figures.

PROG1

The girl and the dog move as long as the buttons on them are pressed. The father's arm moves up and down with a servo motor. The others are motionless

PROG2

You can move and stop by holding down the button on the girl. The father's arm moves up and down. The other characters also have moving parts.

PROG3

Each robot is equipped with more and more sensors. Robots are becoming more and more complex.

PROG4

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Ötletek különböző programozási szintű robotokhoz

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P5



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PROG2

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PROG3

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PROG4

1- The way of the hardworking girl

P1 Dragons on gears

- Rack and pinion - rack and pinion solution, powered by a DC motor connected to a battery holder
- On both side of the table, the kites sit on a gear carriage and move alongside the table

P2 Feeding the dragons

- The girl is built next to the table, moving her shoulders with a DC motor
- We connect 1 Touch sensor and 1 LED to the robot.
- When Touch sensor is pressed, she reaches her arm towards the table, when she lift her hand, the green LED built into the table lights up.
- The kites on both side of the table are connected to another motherboard. They are built on a gear and rack structure.
- 2 Touch sensors are connected to the robot.
- By pressing 1 Touch sensor, the kites roll back and forth on the gears.

P3 Kites moving randomly

- We build the girl next to the table, mount a servo motor in her shoulder and connect a sound sensor to her.
- She reaches her arm toward the table, which is detected by the IR Photoreflector in the table.
- The green LED in the table will light up and the kites will start moving.
- The kites always start from the middle, and when she lifts her hand over the table, the kites randomly slide either left or right on the rack, and then after a few seconds they move back to the middle.
- When the kites are back in the middle, the girl pulls her arm back.

P4 Stepping kite

- Building a 3 servo-motor powered stepping kite.
- The kite steps towards the girl with its eyes glowing green. When it stops, it makes a sound.
- The girl is built as a figure.

