

ALICE IN WONDERLAND A MAD TEA PARTY (T4)

S9
T4
D10
L1 P3

Focus on:

- Creativity (D10)



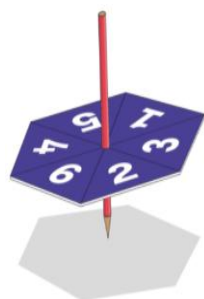
Task1: Create a timer to control the time and a spinner!

Students build a timer out of bottles and sand spinner with the characters and then play with them in the "Musical chairs".

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:

- Creating a timer out of plastic bottles and sand
- Creating a spinner with the characters
- Play musical chairs with the spinner and the timer!

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

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!

Task2: Sort the sweets game

Students have to solve logical challenges sorting the candies. They cut out the parts of the board game and can organize championship!

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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:

- Using templates.
- Cutting out the candies and the sequence cards with scissors
- Solving logical challenges

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

Developmental fields:

In focus:

- Computational thinking
- Spatial orientation
- Attention

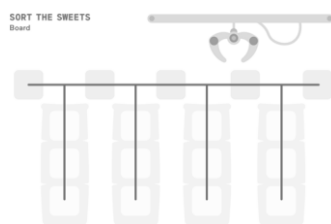
In addition:

- Subject concentration – Mathematics
- Graphomotor skills

Cards Sequence n.1



SORT THE SWEETS Board



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Focus on:

- Creativity (D10)



Task3: How does the characters and the scenes of the story look like?!

Students create the characters of the story or the elements of the landscape.

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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!

Developmental fields:

In focus:

- Spatial orientation
- Fine motor skills
- Creativity

In addition:

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



Task4: Play with marbles!

Students plan and build their own marble run course or maze.

They create their own set of rules and play with it together or teach the rules to their classmates and organize a championship.

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 a marble run out of ArTeC Blocks
- Building a marble run out of recycled materials
- Building a maze out of cardboard, straws, pencils, recycled materials, etc.
- Steering marbles together by tilting a huge maze

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

Developmental fields:

In focus:

- Spatial orientation
- Fine motor skills
- Social competencies

In addition:

- Attention concentration
- Subject concentration – Physics



ALICE IN WONDERLAND

A MAD TEA PARTY (T4)

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L1 P3

Focus on:

- Creativity (D10)



Task5: How to behave in Wonderland?

Students talk about parody, exclusion, accusing and trials.

They dramatize and act out the given situation.

Focus on

- Critical thinking
- Social skills
- Civics

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

Idea Bazaar – some ideas:

- Discuss the situation on the act it out! Card!
- Find out and dramatize a situation given in the task!

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

Cut out the situation cards!

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!

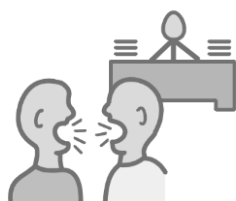
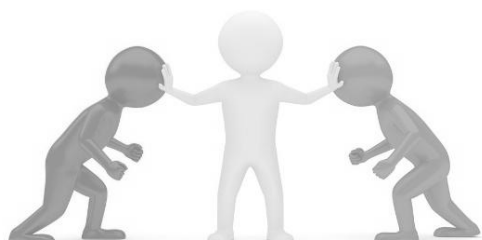
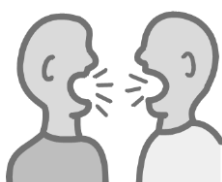
Developmental fields:

In focus:

- Social competences
- Critical thinking
- Civics
- Text comprehension

In addition:

- Attention concentration
- Life skills
- Talent development
- Talent development




ALICE IN WONDERLAND


S9
T4,6
L1


Some ideas – Behaviors in different situations

Act it out!

The Mad Tea-Party scene is a parody. What does this word mean?

Find out and play out a situation with your friend once seriously and once as a parody!

Act it out!

At the Mad Tea-Party, the Hare and Hatter told Alice there was no room at the table, but actually there was. Why did they tell her so?

Why did the Hatter tell Alice to find an answer to the riddle when neither him nor the Hare knew it?

Have you found yourself in a similar situation before?

Find out and play out a situation of exclusion with your friend!

Act it out!

Alice must stand in court before the King of Hearts.

What does a court and a trial mean?

Who are the participants of a trial? What is their role?

What is the process of a trial?

Imagine and dramatize a trial at the court!

How to manage output:

Record a video acting out the situations.

ALICE IN WONDERLAND

A MAD TEA PARTY (T4)

S9
T4
D10
L2 P3



Focus on:

- Creativity (D10)

Goals of the lesson:

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



There was a table set out under a tree in front of the house, and the March Hare and the Hatter were having tea at it. Alice sat down in a chair, although the Hare and Hatter told her there was no room. The Hatter told her she needed a haircut and asked the riddle “why is a raven like a writing-desk?” Alice said that she believed she could guess that, and the others began to ridicule her by starting a discussion about semantics. The Hatter asked her what day of the month it was. His watch didn’t tell the time but the day of the month, and the Hatter claimed that it was two days’ wrong.

Then the Hatter asked if she had come up with an answer to the riddle, but she hadn’t, and the Hatter and the Hare said they didn’t know the answer either. Alice told them not to waste time by asking riddles with no answers. Then, the Hatter told her that he quarreled with Time last March when he was singing “Twinkle, twinkle, little bat” at a concert given by the Queen of Hearts, and now it is forever six o’clock. As this is teatime they must always have tea. Alice, the Hare and the Hatter wake the Dormouse and asked him to tell them a story. He told them a story about the sisters Elsie, Lacie and Tillie who lived at the bottom of a treacle well and learned to draw things starting with an M. Alice kept interrupting the story so the others made rude remarks to her. Finally, she became really offended and walked away.

In the wood, Alice notices a tree with a door in it, and when she enters it she finds herself in the great hall. She takes the key and unlocks the door, eats from the mushroom to make herself smaller and is finally able to enter the beautiful garden.

Main features and interactions of the characters

Character	Features	Interactions
Hatter	Has tea, chats, has a watch	Walks, moves the table, speaks
Alice	Walks	Walks, moves
Hare and Dormouse	Has tea, chats	Walks, moves

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!

Hatter, Table, Alice

Tilting
Make sounds
Moves table

Tea
Cakes
Hare
Dormouse
Forest

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: _____



S9
T4
D10
L3-L4
P4



- ArTeC Blocks (at least the 112 pcs set) and ArTeC robotics set (1 Studuino motherboard, 2 DC motors, gears, drive rails, 2 servo motors, 2 IR Photoreflector, 4 Touch sensors 1 Accelerometer)
- Mindmap or Chart draft , Storyline
- Character cards and Robotic task card template
- Pencil

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

- Choose 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).

- Discuss about sharing at the table when eating or drinking.
- **Discuss how to make things stable.**
- Build simple figures from ArTeC Blocks.

[illegible]

- Programming DC motor
 - Setting power, direction(2.a, 2.b)
 - Random movements (2.f)
- Programming servo motor (3.a, 3.b, 3.c, 3.d)
- Buttons, Touch Sensor and Accelerometer (4.a, 4.b, 4.c, 4.e, 4,f)
- IR Photoreflector
 - Testing IR photoreflector (7.a)
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- Using variables (11.a, 11.b)

The table can be tilted on its axis. The characters can be pushed in the right direction on gears and drive rails.

The table can be tilted using a lever and a shaft. The guests of the tea party are moved on a Dc motor.

The table tilts randomly. The direction in which the table tilts, the guests move to that direction on both sides at the same time.

Two solutions for one topic. With Accelerometer and Touch sensor controlled guests, table.

PROG1

PROG2

PROG3

PROG4

ALICE IN WONDERLAND A MAD TEA PARTY (T4)

S9
T4
D10
L3-L4
P5

Ideas for robots on different programming levels

The table can be tilted on its axis. The characters can be pushed in the right direction on gears and drive rails.

PROG1

The table can be tilted using a lever and a shaft. The guests of the tea party are moved on a Dc motor.

PROG2

The table tilts randomly. The direction in which the table tilts, the guests move to that direction on both sides at the same time.

PROG3

Two solutions for one topic. With Accelerometer and Touch sensor controlled guests, table.

PROG4



A Mad Tea Party

P1 Tilting mechanical table

- Build a table for the tea party and its guests.
- The table tilts on an axis in one direction or the other.
- The figures sit on two sides of the table on a pushable carriage, the wheels of it are made of gears, the track is made of drive rails.
- The figures can be pushed on either side according to the direction of the table.

P2 Two types of puppet theatre

- a.) Build the table and the figures as in P1.
 - The table can be tilted using a lever and a shaft.
 - The guests are mounted on 1-1 DC motor and can be moved by 2 Touch sensors.
 - The Touch sensors control the figures on both sides simultaneously. When the table is tilted, pressing the corresponding Touch sensor will control the figures in that direction.
- b.) Behind the paravane of the constructed puppet theatre, the figures are mounted on 2 horizontally mounted DC motors and a table top mounted on an axle is tilting in the middle of the scene.
 - The figures can be moved by 1-1 Touch sensors, which also make the table tilt. The other two tea party guests are set up on the paravane.

P3 Automatic tilting table

- Build the table and guests as in P2. Connect 2 IR Photoreflectors.
- 1 servo motor is mounted in the table top and tilts the table randomly in one direction or the other.
- The table legs are monitored by 1-1 IR Photoreflector. That IR Photoreflector, the way the table tilts, activates the figures on both sides and moves them in the direction of the tilt, and then re-sets all the elements of the robot to the centre, to the default position.



P4 P4 Two exciting solutions for table tilting

- a.) Build the table and guests as in P2. Connect 2 IR Photoreflectors and an Accelerometer.
 - The Accelerometer controls the tea party figures in the two possible directions, and 2 IR Photoreflectors observe the figures from both directions. Whichever sensor detects the figures, the table tilts in that direction, following the movement of the figures.
 - After each movement, all the figures in the scene return to the centre.
- b) Build the figures, as in P2. Connect 4 touch sensors.
 - The design of the table is different from the previous ones, it is cut "in two" lengthwise, which allows the table parts to tilt in different directions. The two halves of the table are each moved by a servo motor.
 - The angle of inclination of the table tiles always takes a different value using a random number generator.
 - The pieces can be guided sideways by 2 - 2 Touch sensors in the direction of tilting, and the table returns to its initial position.

ALICE IN WONDERLAND

A MAD TEA PARTY (T4)

S9
T4
D12
L1 P3

Focus on:

- Language communication (D12)



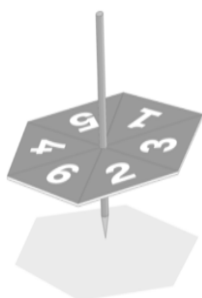
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Idea Bazaar – some ideas:

- Creating a timer out of plastic bottles and sand
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- Play musical chairs with the spinner and the timer!

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

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!

Task2: Sort the sweets game

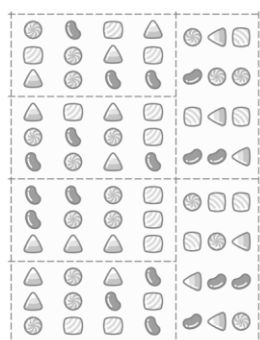
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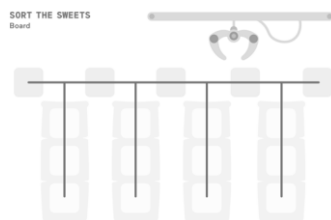
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Cards Sequence n.1



SORT THE SWEETS Board



Idea Bazaar – some ideas:

- Using templates.
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Developmental fields:

In focus:

- Computational thinking
- Spatial orientation
- Attention

In addition:

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ALICE IN WONDERLAND

A MAD TEA PARTY (T4)

S9
T4
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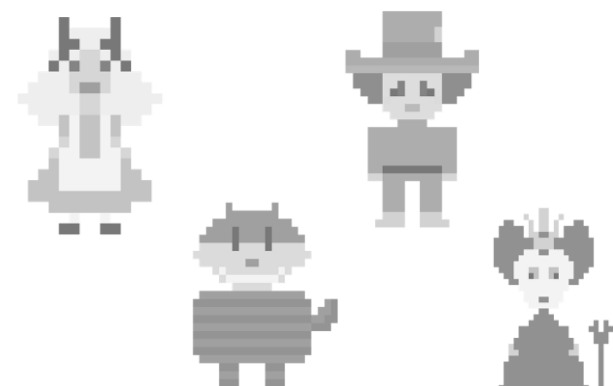
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- Fine motor skills
- Social competencies

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ALICE IN WONDERLAND

A MAD TEA PARTY (T4)

S9
T4
D12
L1 P3



Focus on:

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Task5: How to behave in Wonderland?

Students talk about parody, exclusion, accusing and trials.

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- Critical thinking
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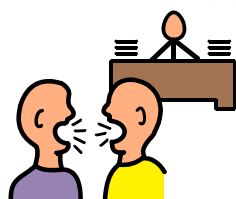
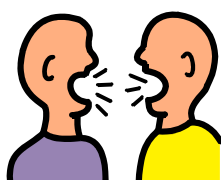
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ALICE IN WONDERLAND

S9
T4,6
L1

Some ideas – Behaviors in different situations

Act it out!

The Mad Tea-Party scene is a parody. What does this word mean?

Find out and play out a situation with your friend once seriously and once as a parody!

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At the Mad Tea-Party, the Hare and Hatter told Alice there was no room at the table, but actually there was. Why did they tell her so?

Why did the Hatter tell Alice to find an answer to the riddle when neither him nor the Hare knew it?

Have you found yourself in a similar situation before?

Find out and play out a situation of exclusion with your friend!

Act it out!

Alice must stand in court before the King of Hearts.

What does a court and a trial mean?

Who are the participants of a trial? What is their role?

What is the process of a trial?

Imagine and dramatize a trial at the court!

How to manage output:

Record a video acting out the situations.

ALICE IN WONDERLAND

A MAD TEA PARTY (T4)

S9
T4
D12
L2 P3



Focus on:

- Language communication (D12)

Goals of the lesson:

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



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In the wood, Alice notices a tree with a door in it, and when she enters it she finds herself in the great hall. She takes the key and unlocks the door, eats from the mushroom to make herself smaller and is finally able to enter the beautiful garden.



Main features and interactions of the characters

Character	Features	Interactions
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How to use the character card:

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Hatter, Table, Alice

Tilting
Make sounds
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Tea
Cakes
Hare
Dormouse
Forest

The main actions of the story
Divide the text segment into pieces

Make a list about things needed
Media files needed


 Your name _____
 Build _____


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 Be attentive, your robot should be able to: _____


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 There also should be: _____


 Your name _____
 Think over: _____

ALICE IN WONDERLAND

A MAD TEA PARTY (T4)

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T4
D12
L3-L4
P4

Suggested materials

- ArTeC Blocks (at least the 112 pcs set) and ArTeC robotics set (1 Studuino motherboard, 2 DC motors, gears, drive rails, 2 servo motors, 2 IR Photoreflector, 4 Touch sensors 1 Accelerometer)
- Mindmap or Chart draft , Storyline
- Character cards and Robotic task card template
- Pencil

Focus on:

- Language communication (D12)

Goals of the lesson:

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



How to fill in the Robotic card?

- Choose 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).

Suggestions

- Discuss about sharing at the table when eating or drinking.
- Discuss how to make things stable.
- Build simple figures from ArTeC Blocks.

Alice
Hatter
Table

The name of my robot:

The parts I need for my robot:

Part	Quantity	Function
ArTeC Blocks	112	Build the robot
Studuino motherboard	1	Control the robot
DC motors	2	Move the robot
Gears	2	Transmit motion
Drive rails	2	Guide the robot
Servo motors	2	Control the robot
IR Photoreflector	2	Detect obstacles
Touch sensors	4	Control the robot
Accelerometer	1	Control the robot

This is how I build and program my robot:

What do I want?	What is the action?	What is the condition?	What is the result?

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
 - Setting power, direction(2.a, 2.b)
 - Random movements (2.f)
- Programming servo motor (3.a, 3.b, 3.c, 3.d)
- Buttons, Touch Sensor and Accelerometer (4.a, 4.b, 4.c, 4.e, 4,f)
- IR Photoreflector
 - Testing IR photoreflector (7.a)
 - Detecting obstacles (7.b)
- Using random numbers (10.a)
- Using variables (11.a, 11.b)

The table can be tilted on its axis. The characters can be pushed in the right direction on gears and drive rails.

PROG1

The table can be tilted using a lever and a shaft. The guests of the tea party are moved on a Dc motor.

PROG2

The table tilts randomly. The direction in which the table tilts, the guests move to that direction on both sides at the same time.

PROG3

Two solutions for one topic. With Accelerometer and Touch sensor controlled guests, table.

PROG4

ALICE IN WONDERLAND A MAD TEA PARTY (T4)

S9
T4
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L3-L4
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Ideas for robots on different programming levels

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PROG4



A Mad Tea Party

P1 Tilting mechanical table

- Build a table for the tea party and its guests.
- The table tilts on an axis in one direction or the other.
- The figures sit on two sides of the table on a pushable carriage, the wheels of it are made of gears, the track is made of drive rails.
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P2 Two types of puppet theatre

- a.) Build the table and the figures as in P1.
 - The table can be tilted using a lever and a shaft.
 - The guests are mounted on 1-1 DC motor and can be moved by 2 Touch sensors.
 - The Touch sensors control the figures on both sides simultaneously. When the table is tilted, pressing the corresponding Touch sensor will control the figures in that direction.
- b.) Behind the paravane of the constructed puppet theatre, the figures are mounted on 2 horizontally mounted DC motors and a table top mounted on an axle is tilting in the middle of the scene.
 - The figures can be moved by 1-1 Touch sensors, which also make the table tilt. The other two tea party guests are set up on the paravane.

P3 Automatic tilting table

- Build the table and guests as in P2. Connect 2 IR Photoreflectors.
- 1 servo motor is mounted in the table top and tilts the table randomly in one direction or the other.
- The table legs are monitored by 1-1 IR Photoreflector. That IR Photoreflector, the way the table tilts, activates the figures on both sides and moves them in the direction of the tilt, and then re-sets all the elements of the robot to the centre, to the default position.



P4 P4 Two exciting solutions for table tilting

- a.) Build the table and guests as in P2. Connect 2 IR Photoreflectors and an Accelerometer.
 - The Accelerometer controls the tea party figures in the two possible directions, and 2 IR Photoreflectors observe the figures from both directions. Whichever sensor detects the figures, the table tilts in that direction, following the movement of the figures.
 - After each movement, all the figures in the scene return to the centre.

- b.) Build the figures, as in P2. Connect 4 touch sensors.
 - The design of the table is different from the previous ones, it is cut "in two" lengthwise, which allows the table parts to tilt in different directions. The two halves of the table are each moved by a servo motor.
 - The angle of inclination of the table tiles always takes a different value using a random number generator.
 - The pieces can be guided sideways by 2 - 2 Touch sensors in the direction of tilting, and the table returns to its initial position.