

THE ADVENTURES OF DON QUIXOTE

FALLING IN LOVE WITH DULCINEA (T2)

**S6
T2
D9
L1 P3**

Focus on:

- Creativity, talent development (D9)



Task1: What does the characters and the scenes look like?

Students create elements of the landscape for Don Quixote's travels around Spain.

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, I4)

Developmental fields:

In focus:

- Fine motor skills
- Spatial orientation
- Creativity

In addition:

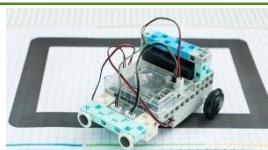
- Attention concentration
- Subject concentration – Natural Sciences
- Talent development

Task2: How did Quixote and Sancho travel? How far did they move and what means of transport were used?

Students create a plan for travel and horse, donkey figures.

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 animals out of ArTeC Blocks
- Programming the animals to move and carry humans around, think how to place the characters on top of animals to be able to travel
- Creating computer graphics, animation
- Drawing

For details of the different solutions, see the Idea sheets! (I1, I2, I3)

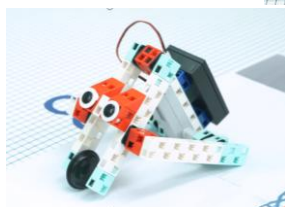
Developmental fields:

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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T2
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L1 P4**

Focus on:

- Creativity, talent development (D9)



Task 3: Why do people laugh at Don Quixote?

Students discuss the reasons for Don Quixote's behaviour and society's reaction to it.

Every solution is good!

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



How to manage output:

Take a video record of the dramatized situation!

Idea Bazaar – some ideas:

- Find out and dramatize a situation where your friend behaves in a strange way and how you would react.
- Imagine how other people would react and what you would do to help your friend

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

Cut out the situation cards! (I5)

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
- Life skills
- Talent development

Task 4: Write Don Quixote's letter to Dulcinea!

Have the children imagine what Don Quixote might write to Dulcinea, how he'd write, how he'd address the letter! **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



How to manage output:

Make a book of the letters! Attach a label with the name of the group!

Idea Bazaar – some ideas:

- Write the letter
- Prepare an ancient-looking paper.
- Create an envelope
- Prepare a seal
- Figure out how the letter would be sent and delivered
- Use materials listed in I7

For details of the different solutions, see the Idea sheets! (I8)

Developmental fields:

In focus:

- Life skills
- Social skills
- Creativity
- Fine motor skills

In addition:

- Spatial orientation
- Attention
- concentration
- Talent development
- Subject concentration – Drawing, History, Language

THE ADVENTURES OF DON QUIXOTE

FALLING IN LOVE WITH DULCINEA (T2)

**S6
T2
D9
L2 P3**



Focus on:

- Creativity, talent development (D9)

Goals of the lesson:

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

Don Quixote meets Cardenio, The Ragged Knight of the Sorry Countenance, who mourns the fact that his true love, Lucinda, has married another man: Don Fernando. Cardenio has gone mad with grief, running half-naked through the hills of Sierra Morena. Quixote imitates Cardenio, pining for his beloved lady, Dulcinea del Toboso. Quixote sends Sancho with a letter to deliver to Dulcinea.

Main features and interactions of the characters

Character	Features	Interactions
Don Quixote	Walks rides a horse talks	Writes letter, asks about details
Sancho Panza	Walks rides a donkey talks	Questions behaviour
Dulcinea	Walk, talk	Receives and read letter
Cardenio	Walk, talk	Tells love stories

Suggestions

- Raise discussion about social behavior, use role-playing if you are comfortable with it
- Talk about the role of friends when confronting problems
- Think how we should react when we don't understand someone's behavior: is it ok to mock?
- Talk about imagination, dreams, illusions.
- Search in books or on the internet about life and values of knights
- Search in books or on the internet about love in the mediaval age
- Build a simple figures with movable legs, arms or mouth from ArTeC Blocks

Suggested materials

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

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!

Sancho Panza

Don Quixote

Dulcinea

Cardenio

Walk

Ride a horse

Ride a donkey

Write letters

Tell stories

Ask questions

Letter

Horse

Donkey

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 ADVENTURES OF DON QUIXOTE

FALLING IN LOVE WITH DULCINEA (T2)

S6
T2
D9
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:

- Creativity, talent development (D9)

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

- Collect ideas about how to represent the letter.
- Collect ideas about how to imitate Don Quixote's love.
- Build simple figures from ArTeC Blocks.

Arm
Leg
Letter



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)

 Ultrasonic sensor	 Servomotor	 DC motor	 Sound sensor	 Light sensor
 Accelerometer	 Infrared sensor	 Touch sensor	 Electronic buzzer	 LED

Build and program so that the robot _____

Use the Technical Corner for robotic building materials

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 actors mounted on the gear system are rotated by a DC motor connected directly to the battery compartment.

PROG1

The direction and speed of rotation of the gear train can also be programmed. Interactions are indicated by LED and Buzzer.

PROG2

Events detected by LEDs and Buzzer. Sancho Panza is a moving robot and delivers Don Quixote's letter to Dulcinea.

PROG3

Coordinated movement of robots that sense and actuate each other. LED indicates the delivery of the letter.

PROG4

THE ADVENTURES OF DON QUIXOTE FALLING IN LOVE WITH DULCINEA (T2)

Ideas for robots on different programming levels

S6
T2
D9
L3-4
P5



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PROG1

The direction and speed of rotation of the gear train can also be programmed. Interactions are indicated by LED and Buzzer.

PROG2

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PROG3

Coordinated movement of robots that sense and actuate each other. LED indicates the delivery of the letter.

PROG4

1- Sending letter to Dulcinea

P1 Gear system powered directly from the power supply

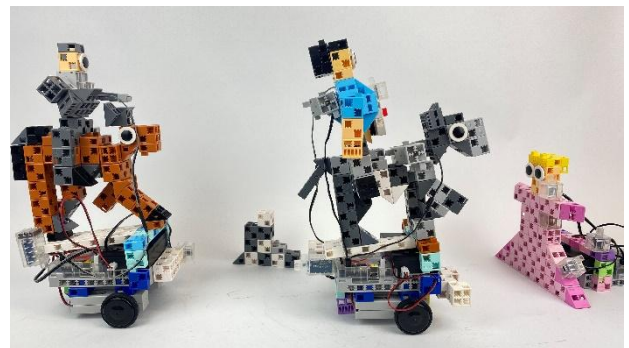
- Don Quixote, Sancho Panza, Dulcinea and the Prince are all built on gears.
- The gear train is driven by a DC motor, directly from the battery.

P2 Programming of gears

- The robot is built as in P1. A sound sensor, LED and Buzzer are attached.
- The programme starts on clap.
- The direction and speed of the gears that move the actors can also be freely varied.
- The Buzzer and LED give you the plot.

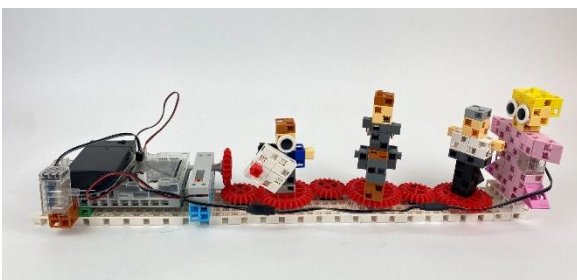
P3 Coordinated robots

- Sancho Panza mounted on a carriage robot. It is equipped with a sound sensor and 1 white LED, the arm is equipped with a servo motor.
- It starts on a clap, moves forward, the LED lights up and the servo lifts the arm holding the letter up and down. The LED turns off when stopped.
- Dulcinea is a static robot with an IR photorelector and Buzzer attached, and a red LED in place of the heart.
- Dulcinea uses the IR photorelector mounted on her to detect Sancho Panza, at which point the red LED in her heart flashes and the Buzzer sounds.



P4 Mutually perceptive robots

- Don Quixote is mounted on a carriage robot equipped with a sound sensor and IR photorelector.
- We build it according to Sancho Panza P3, with a Touch sensor and IR photorelector.
- Don Quixote starts on clap and walks forward, until he detects Sancho Panza and presses the Touch sensor on Sancho Panza.
- At the push of the Touch sensor, Sancho Panza starts moving forward until he detects Dulcinea. The servo motor in his arm moves up and down and the white LED in his hand lights up
- When it detects Dulcinea, stops and the white LED goes out.
- Build Dulcinea as in P3, the a LED is mounted in the hand, 1 IR photorelector is connected to her.
- The IR photorelector mounted on Dulcinea detects Sancho Panza, which triggers its programme. When Sancho Panza's white LED goes out, Dulcinea's white LED lights up as if she has received the letter. Her red LED flashes and the Buzzer sounds on it.



THE ADVENTURES OF DON QUIXOTE FALLING IN LOVE WITH DULCINEA (T₂)

S6
T2
D10
L1 P3

Focus on:

• Creativity (D10)



Task1: What does the characters and the scenes look like?

Students create elements of the landscape for Don Quixote's travels around Spain.

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, I4)

Developmental fields:

In focus:

- Fine motor skills
- Spatial orientation
- Creativity

In addition:

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

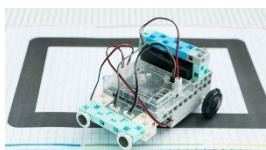
Task2: How did Quixote and Sancho travel? How far did they move and what means of transport were used?

Students create a plan for travel and horse, donkey figures.

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Idea Bazaar – some ideas:

- Building animals out of ArTeC Blocks
- Programming the animals to move and carry humans around, think how to place the characters on top of animals to be able to travel
- Creating computer graphics, animation
- Drawing

For details of the different solutions, see the Idea sheets! (I1, I2, I3)

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!

THE ADVENTURES OF DON QUIXOTE FALLING IN LOVE WITH DULCINEA (T2)

**S6
T2
D10
L1 P4**

Focus on:

• Creativity (D10)



Task 3: Why do people laugh at Don Quixote?

Students discuss the reasons for Don Quixote's behaviour and society's reaction to it.

Every solution is good!

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



How to manage output:

Take a video record of the dramatized situation!

Idea Bazaar – some ideas:

- Find out and dramatize a situation where your friend behaves in a strange way and how you would react.
- Imagine how other people would react and what you would do to help your friend

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

Cut out the situation cards! (I5)

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
- Life skills
- Talent development

Task 4: Write Don Quixote's letter to Dulcinea!

Have the children imagine what Don Quixote might write to Dulcinea, how he'd write, how he'd address the letter! **Every solution is good!**

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How to manage output:

Make a book of the letters! Attach a label with the name of the group!

Idea Bazaar – some ideas:

- Write the letter
- Prepare an ancient-looking paper.
- Create an envelope
- Prepare a seal
- Figure out how the letter would be sent and delivered
- Use materials listed in I7

For details of the different solutions, see the Idea sheets! (I8)

Developmental fields:

In focus:

- Life skills
- Social skills
- Creativity
- Fine motor skills

In addition:

- Spatial orientation
- Attention
- concentration
- Talent development
- Subject concentration – Drawing, History, Language

THE ADVENTURES OF DON QUIXOTE

FALLING IN LOVE WITH DULCINEA (T2)

S6
T2
D10
L2 P3



Focus on:

- Creativity (D10)

Goals of the lesson:

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

Don Quixote meets Cardenio, The Ragged Knight of the Sorry Countenance, who mourns the fact that his true love, Lucinda, has married another man: Don Fernando. Cardenio has gone mad with grief, running half-naked through the hills of Sierra Morena. Quixote imitates Cardenio, pining for his beloved lady, Dulcinea del Toboso. Quixote sends Sancho with a letter to deliver to Dulcinea.

Main features and interactions of the characters

Character	Features	Interactions
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Dulcinea	Walk, talk	Receives and read letter
Cardenio	Walk, talk	Tells love stories

Suggestions

- Raise discussion about social behavior, use role-playing if you are comfortable with it
- Talk about the role of friends when confronting problems
- Think how we should react when we don't understand someone's behavior: is it ok to mock?
- Talk about imagination, dreams, illusions.
- Search in books or on the internet about life and values of knights
- Search in books or on the internet about love in the mediaval age
- Build a simple figures with movable legs, arms or mouth from ArTeC Blocks

Suggested materials

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

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!

Sancho Panza
Don Quixote
Dulcinea
Cardenio

Walk
Ride a horse
Ride a donkey
Write letters
Tell stories
Ask questions

Letter
Horse
Donkey

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

	<u>Your name</u>
Build	
	<u>Your name</u>
Be attentive, your robot should be able to:	
	<u>Your name</u>
There also should be:	
	<u>Your name</u>
Think over:	

THE ADVENTURES OF DON QUIXOTE FALLING IN LOVE WITH DULCINEA (T2)

S6
T2
D10
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:

- Creativity (D10)

Goals of the lesson:

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

Suggestions

- Collect ideas about how to represent the letter.
- Collect ideas about how to imitate Don Quixote's love.
- Build simple figures from ArTeC Blocks.

How to fill in the Robotic card?

- Based on the character card, the developmental aspect and the programming level, choose the robot activity and the complexity of the program to match the child's abilities.
- Additional robot cards can be filled in if necessary (e.g. for clarification or differentiation).
- Not all the table's columns need to be filled in, only those relevant to the robot's particular function.
- Based on each row of the table, use grammatically correct sentences to describe the robot's operation in the target language.

Arm
Leg
Letter

The name of my robot: _____

The parts I need for my robot:

Robotics	DC motor	IR Photoreflector	Touch sensor	Buzzer	LED
ArTeC Blocks	Studuino	DC motor	IR Photoreflector	Touch sensor	Buzzer

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

Block action
Create storyline
Find robotics support materials in the Technical corner!

This is how I build and program my robot:

What do I see?	What is it doing?	What? (random)	What? (random)	To whom? How long? How many times?	What does it look like?

This is how my robot will work:

Write 12 to 15 complete sentences on the table above.

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
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- Using random numbers (10.a)

The actors mounted on the gear system are rotated by a DC motor connected directly to the battery compartment.

PROG1

The direction and speed of rotation of the gear train can also be programmed. Interactions are indicated by LED and Buzzer.

PROG2

Events detected by LEDs and Buzzer. Sancho Panza is a moving robot and delivers Don Quixote's letter to Dulcinea.

PROG3

Coordinated movement of robots that sense and actuate each other. LED indicates the delivery of the letter.

PROG4

THE ADVENTURES OF DON QUIXOTE FALLING IN LOVE WITH DULCINEA (T2)

S6
T2
D10
L3-4
P5

Ideas for robots on different programming levels

The actors mounted on the gear system are rotated by a DC motor connected directly to the battery compartment.

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PROG3

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PROG4



1- Sending letter to Dulcinea

P1 Gear system powered directly from the power supply

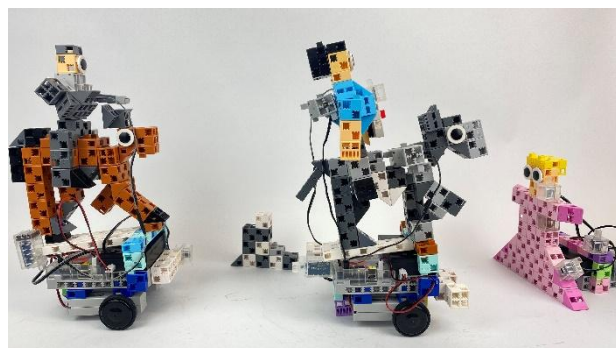
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P2 Programming of gears

- The robot is built as in P1. A sound sensor, LED and Buzzer are attached.
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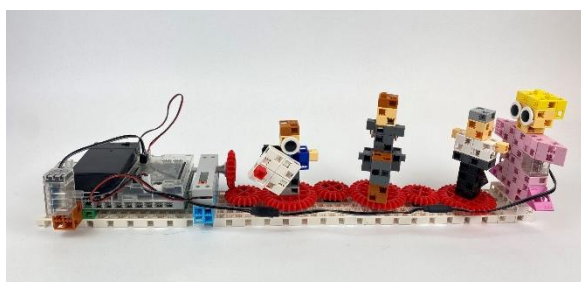
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P4 Mutually perceptive robots

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- Build Dulcinea as in P3, the a LED is mounted in the hand, 1 IR photorelector is connected to her.
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THE ADVENTURES OF DON QUIXOTE FALLING IN LOVE WITH DULCINEA (T₂)

S6
T2
D11
L1 P3

Focus on:

- Language consciousness (D11)



Task1: What does the characters and the scenes look like?

Students create elements of the landscape for Don Quixote's travels around Spain.

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, I4)

Developmental fields:

In focus:

- Fine motor skills
- Spatial orientation
- Creativity

In addition:

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

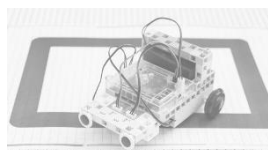
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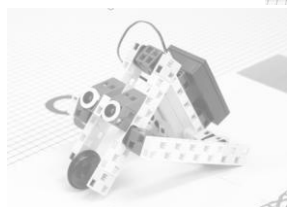
Developmental fields:

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!

THE ADVENTURES OF DON QUIXOTE

FALLING IN LOVE WITH DULCINEA (T₂)

**S6
T2
D11
L1 P4**

Focus on:

- Language consciousness (D11)



Task 3: Why do people laugh at Don Quixote?

Students discuss the reasons for Don Quixote's behaviour and society's reaction to it.

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



How to manage output:

Take a video record of the dramatized situation!

Idea Bazaar – some ideas:

- Find out and dramatize a situation where your friend behaves in a strange way and how you would react.
- Imagine how other people would react and what you would do to help your friend

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Cut out the situation cards! (I5)

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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
- Life skills
- Talent development

Task 4: Write Don Quixote's letter to Dulcinea!

Have the children imagine what Don Quixote might write to Dulcinea, how he'd write, how he'd address the letter! **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



How to manage output:

Make a book of the letters! Attach a label with the name of the group!

Idea Bazaar – some ideas:

- Write the letter
- Prepare an ancient-looking paper.
- Create an envelope
- Prepare a seal
- Figure out how the letter would be sent and delivered
- Use materials listed in I7

For details of the different solutions, see the Idea sheets! (I8)

Developmental fields:

In focus:

- Life skills
- Social skills
- Creativity
- Fine motor skills

In addition:

- Spatial orientation
- Attention
- concentration
- Talent development
- Subject concentration – Drawing, History, Language

THE ADVENTURES OF DON QUIXOTE FALLING IN LOVE WITH DULCINEA (T2)

**S6
T2
D11
L2 P3**



Focus on:

- Language consciousness (D11)

Goals of the lesson:

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

Don Quixote meets Cardenio, The Ragged Knight of the Sorry Countenance, who mourns the fact that his true love, Lucinda, has married another man: Don Fernando. Cardenio has gone mad with grief, running half-naked through the hills of Sierra Morena. Quixote imitates Cardenio, pining for his beloved lady, Dulcinea del Toboso. Quixote sends Sancho with a letter to deliver to Dulcinea.

Main features and interactions of the characters

Character	Features	Interactions
Don Quixote	Walks rides a horse talks	Writes letter, asks about details
Sancho Panza	Walks rides a donkey talks	Questions behaviour
Dulcinea	Walk, talk	Receives and read letter
Cardenio	Walk, talk	Tells love stories

Suggestions

- Raise discussion about social behavior, use role-playing if you are comfortable with it
- Talk about the role of friends when confronting problems
- Think how we should react when we don't understand someone's behavior: is it ok to mock?
- Talk about imagination, dreams, illusions.
- Search in books or on the internet about life and values of knights
- Search in books or on the internet about love in the mediaval age
- Build a simple figures with movable legs, arms or mouth from ArTeC Blocks

Suggested materials

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

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!

Sancho Panza
Don Quixote
Dulcinea
Cardenio

Walk
Ride a horse
Ride a donkey
Write letters
Tell stories
Ask questions

Letter
Horse
Donkey

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

	<u>Your name</u>
Build	
	<u>Your name</u>
Be attentive, your robot should be able to:	
	<u>Your name</u>
There also should be:	
	<u>Your name</u>
Think over:	

S6
T2
D11
L3-4
P4



- 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

- Language consciousness (D11)

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

- Collect ideas about how to represent the letter.
- Collect ideas about how to imitate Don Quixote's love.
- Build simple figures from ArTeC Blocks.

- Based on the character card, the developmental aspect and the programming level, choose the robot activity and the complexity of the program to match the child's abilities.
- Additional robot cards can be filled in if necessary (e.g. for clarification or differentiation).
- Not all the table's columns need to be filled in, only those relevant to the robot's particular function.
- Based on each row of the table, use grammatically correct sentences to describe the robot's operation in the target language.

Arm
Leg
Letter

[illegible]

- 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 actors mounted on the gear system are rotated by a DC motor connected directly to the battery compartment.

PROG1

The direction and speed of rotation of the gear train can also be programmed. Interactions are indicated by LED and Buzzer.

PROG2

Events detected by LEDs and Buzzer. Sancho Panza is a moving robot and delivers Don Quixote's letter to Dulcinea.

PROG3

Coordinated movement of robots that sense and actuate each other. LED indicates the delivery of the letter.

PROG4

THE ADVENTURES OF DON QUIXOTE FALLING IN LOVE WITH DULCINEA (T₂)

S6
T2
D11
L3-4
P5

Ideas for robots on different programming levels

The actors mounted on the gear system are rotated by a DC motor connected directly to the battery compartment.

PROG1

The direction and speed of rotation of the gear train can also be programmed. Interactions are indicated by LED and Buzzer.

PROG2

Events detected by LEDs and Buzzer. Sancho Panza is a moving robot and delivers Don Quixote's letter to Dulcinea.

PROG3

Coordinated movement of robots that sense and actuate each other. LED indicates the delivery of the letter.

PROG4



1- Sending letter to Dulcinea

P1 Gear system powered directly from the power supply

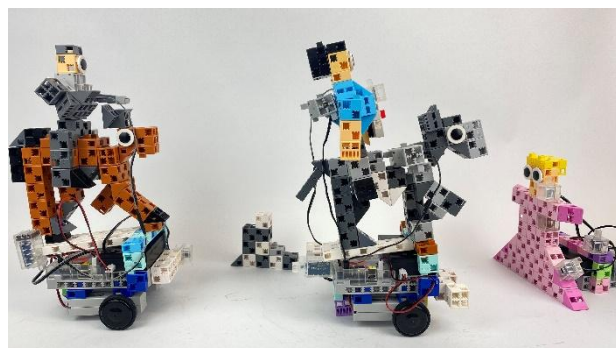
- Don Quixote, Sancho Panza, Dulcinea and the Prince are all built on gears.
- The gear train is driven by a DC motor, directly from the battery.

P2 Programming of gears

- The robot is built as in P1. A sound sensor, LED and Buzzer are attached.
- The programme starts on clap.
- The direction and speed of the gears that move the actors can also be freely varied.
- The Buzzer and LED give you the plot.

P3 Coordinated robots

- Sancho Panza mounted on a carriage robot. It is equipped with a sound sensor and 1 white LED, the arm is equipped with a servo motor.
- It starts on a clap, moves forward, the LED lights up and the servo lifts the arm holding the letter up and down. The LED turns off when stopped.
- Dulcinea is a static robot with an IR photorelector and Buzzer attached, and a red LED in place of the heart.
- Dulcinea uses the IR photorelector mounted on her to detect Sancho Panza, at which point the red LED in her heart flashes and the Buzzer sounds.



P4 Mutually perceptive robots

- Don Quixote is mounted on a carriage robot equipped with a sound sensor and IR photorelector.
- We build it according to Sancho Panza P3, with a Touch sensor and IR photorelector.
- Don Quixote starts on clap and walks forward, until he detects Sancho Panza and presses the Touch sensor on Sancho Panza.
- At the push of the Touch sensor, Sancho Panza starts moving forward until he detects Dulcinea. The servo motor in his arm moves up and down and the white LED in his hand lights up
- When it detects Dulcinea, stops and the white LED goes out.
- Build Dulcinea as in P3, the a LED is mounted in the hand, 1 IR photorelector is connected to her.
- The IR photorelector mounted on Dulcinea detects Sancho Panza, which triggers its programme. When Sancho Panza's white LED goes out, Dulcinea's white LED lights up as if she has received the letter. Her red LED flashes and the Buzzer sounds on it.

