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THE STORY OF THE PIG
THE WELL AND THE GOLDEN DISTAFF (T4)

S8 T4 D6 L1 P3

In focus:
- Computational thinking – life skills (D6)

Task 1: What types of wells and bridges were used in different times and places? Collect information and use it to draw and build together.

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:
- Use the Idea sheet (I7)
- Look it up in the library or online, create a presentation, a tableau or an exhibition.
- Build creatively, use recycled materials!
- Find out more about the construction of the Leonardo Bridge, look for information online or in books! Use pencils to recreate the bridge from Leonardo da Vinci's plans!

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

Developmental fields:

In focus:
- Graphomotor skills
- Creativity
- Spatial orientation

In addition:
- History
- Attention development
- Life experience

Task 2:
Collect the tools used for spinning in the past and today. Find books in the library on this topic. Share the information you have gathered with your peers.

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:
- The information collected can be displayed on a table or in a presentation.
- Create a word cloud, use the free word cloud app wordart.com or mentimeter.com!
- Draw a timeline showing the different techniques.
- Make a quiz for your peers on paper or online using the app!

Developmental fields:

In focus:
- Life experience
- Technical knowledge
- Creativity

In addition:
- Attention Development
- Social skills

Managing the output:
Give a presentation of your book and internet research!

Create an exhibition of mock-ups of different types of wells, and link the project to World Water Day, which is held on 22 March each year.

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S8
T4
D6
L2 P3

In focus:
- Computational thinking – life skills (D6)

Goals of the lesson:
- Reading comprehension
- problem solving
- Decision-making
- organising group work

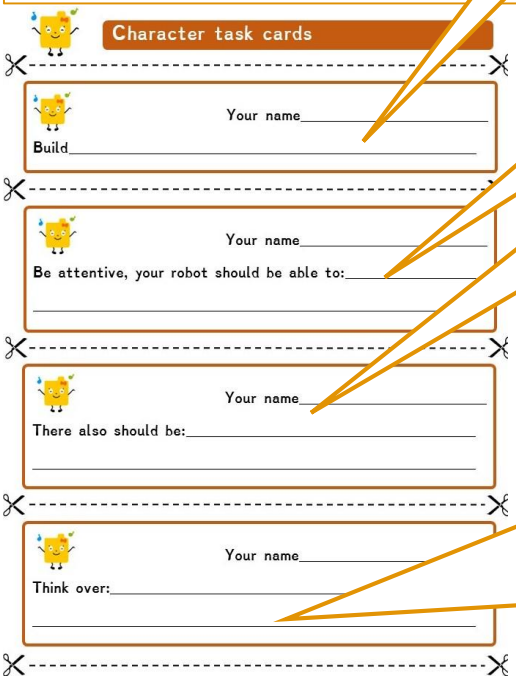
The lark then showed the princess a well; he advised her what to do in turn with the distaff, with the reeling machine, and the golden clucking-hen and chickens. Then, saying good-bye to the princess entrusted to his care, he returned home. Then the unhappy princess went to the well .
And when she reached the well, she took out the distaff. Shortly afterward, a servant came to draw water, and seeing the miraculous distaff, spinning golden thread by itself, fled to her mistress to tell her the news. Her mistress, the wicked witch, took the distaff from the princess.
The next day, she took out her reeling machine. Again the servant came to fetch water and seeing this second wonderful object, rushed off to her mistress and said that the woman had now a golden reel, which could wind alone. The old witch took possession of the reeling machine with the same craftiness, and the next morning chased her out of the palace.

Suggestions
- Talk about why water is important for wildlife
- Show children pictures of the distaff and reeling machine
- Talk about the old village way of life and the role of fairy tales in community life.

Main features and interactions of the characters		
Character	Features	Interactions
Well	Feeding	Moves up and down
Distaff	Fabulous	Turns
Reeling machine	Fabulous	Turns

How to use the character card:
Each student fills in their 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!



Well, distaff, reeling machine

Moves, turns

Buildings, trees

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

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S8
T4
D6
L3–4
P4

In focus:
- Computational thinking – life skills (D6)

Goals of the lesson:
- Reading comprehension
- problem solving
- Decision-making
- expression of movement

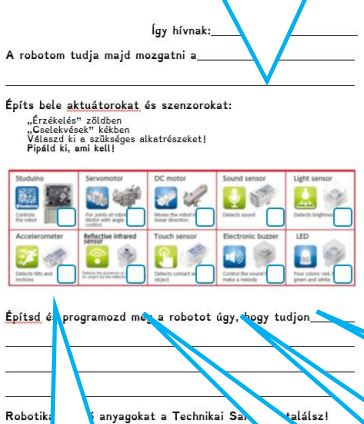
Materials needed
- ArTeC blocks (at least the 112 pcs set) and ArTeC robot set (2 Studuino motherboards, 2 Touch sensors, 4 LEDs, 2 DC motors, 1 IR photoreflector)
- Mindmap or Chart draft, Storyline
- Character cards and Robotic task card template
- Pencil

How to fill in the Robotic card?
Choose the 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
Well
- Build a simple mobile well with blocks and connecting elements

Distaff, reeling machine
- Build a simple mobile distaff and reeling machine with blocks and connecting elements

Distaff and reel rotation, rotation speed,
Moving the well arm up and down



Related topics in the Technical corner
- Programming DC motor (2.a, 2.b)
- Programming Touch sensor (or buttons) (4.b, 4.c)
- Using IR Photoreflector (7.a)
  - Detecting obstacles(7.b)

PROG1
The distaff and the reel can be rotated to represent their function. Some parts of the figures are built to be movable.

PROG2
Both the well and the reel in the scene are powered by DC motors, making them even more lifelike.

PROG3
The well remains unchanged, but the reel starts at a different speed for each Touch sensor.

PROG4
The speed of rotation of the reel varies randomly within a given range. Its movement is controlled by an infrared sensor in front of which the old woman is placed.

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S8
T4
D6
L3–4
P5

Ideas for robots on different programming levels

PROG1	PROG2	PROG3	PROG4
The distaff and the reel can be rotated to represent their function. Some parts of the figures are built to be movable.	Both the well and the reel in the scene are powered by DC motors, making them even more lifelike.	The well remains unchanged, but the reel starts at a different speed for each Touch sensor.	The speed of rotation of the reel varies randomly within a given range. Its movement is controlled by an infrared sensor in front of which the old woman is placed.

The distaff and the reeling machine

P1 Puppeteering with figures on axles
- The well, the motolla and the figures are all built with moving parts.
- By moving these, the scene can be puppeteered.

P2 DC motorised robots
- There are 2 Touch sensors on both the well and the reel.
- In both cases, pressing one button will start your program and pressing the other will stop it.
- The well moves slightly forwards or backwards when the buttons are pressed, moving the bucket up and down.
- The movement of the reel is continuous until it is stopped with the other Touch sensor.
- All other actors are similar to P1.

P3 Push button variable speed structure
- The structure and programme of the well constructed in P2 will remain unchanged.
- 3 Touch sensors are placed on the reel.
- Each of the three sensors switches the reel on at a different speed and rotates it as long as it is held down (e.g. the motor speed changes between 30, 60 and 90)

P4 Robot controlled by multiple sensors
- The 3 Touch sensors remain on the reel, but the speed they set is picked from a range using a random number generator (p.: between 20-40, 50-70 and 80-100 speeds).
- The rotation is stopped by an infrared sensor built into the reel when the old woman is placed in front of it.
- The well is unchanged in all respects.