

THE ROBBER HOTZENPLOTZ POOR SEPPEL! (T4)



**S12
 T4
 D7
 L1 P3**

Focus on:

- Robotics, engineering (D7)

Task 1: What do robbers look like?

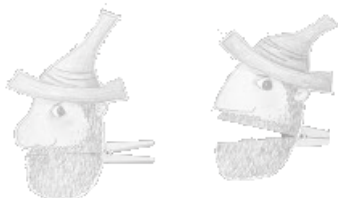
What does the classic robber figure look like? What's his hair like, does he have a beard? How well-groomed is he? What could be the reason for his unkemptness? Is his skin smooth, or is it scarred? Is he wearing something on his head?

The students create a robber figure who can open his mouth using a clothespin.

Every solution is correct!

Any tool and material can be used!

You can use the ideas and the list of materials from the ideas bazaar, develop your own ideas or simply let the children be creative.



Idea bazaar – some ideas:

- Building out of ArTeC Blocks, using Artec mechanisms
- Drawing
- Creating computer graphics

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

Developmental fields:

In Focus:

- Fine motor skills
- Creativity
- Work of mechanical structures

In addition:

- Attention
- Subject concentration – Physics, Arts
- Talent development

Task 2: Which objects and characteristics are typical of a robber?

The students should think about: what tools, objects, and clothes are the most characteristic of a robber figure. The figures on the page (small squares) should be cut out and glued to the appropriate place on the table to solve the Sudoku table according to the classic rules. (Each figure can appear only once in each row, each column and each 3x3 square).

Talented students should make their own sudoku, based on the pattern. In the case of talent development, let's study the mathematics of sudoku.

Idea bazaar – some ideas:

- Solve the sudoku table
- Create sudoku yourself, in 4x4, 6x6, or 9x9 formats

Developmental fields:

In Focus:

- Fine motor skills
- Creativity
- Orientation
- Logic thinking

In addition:

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



How to manage output:

Take some photo or scan the solved Sudoku-mazes. Save the own Sudoku-mazes on your computer. You can give these as a task for other pupils or show them as examples.

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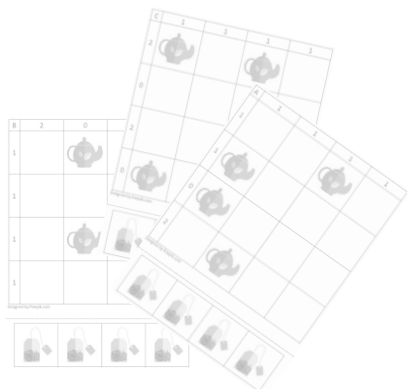
Focus on:

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Task 3: What do you need for having a tea?

Of course, a tea filter and a nice pot. Students may place only one filter next to each teapot, and the corners of the filters must not come into contact with each other. As a help, we have specified the number of filters in the given row and column at the edge of the grid.

The student may complete our logic games, but they may also create similar ones themselves.



Idea bazaar – some ideas:

- Complete the logic game
- Create similar games yourself

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

Developmental fields:

In Focus:

- Orientation
- Attention
- Logical thinking
- Text comprehension

In addition:

- Concentration
- Subject concentration
- Mathematics, IT
- Talent development

How to manage output:

Take some photo or scan the solved Sudoku-mazes. Save the own Sudoku-mazes on your computer. You can give these as a task for other pupils or show them as examples.

Task 4: How do old coffee grinders work?

How does the crank arm move? Think about what parts you can drive with it. Create simple animated images using Canva, Pivot animator or Scratch.

- How does a traditional coffee grinder move?
- How does the hammer move during hammering?
- How does the handcart wheel move?



Idea bazaar – some ideas:

- Creating animated images
- Creating presentations about how simple mechanical designs work.

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

Developmental fields:

In Focus:

- Physics, robotics, engineering
- Creativity
- Presentation skills

In addition:

- Subject concentration
- Physics, IT, Arts
- Creativity
- Talent development

How to manage the output:

Create video recordings or screenshots of the animations.

THE ROBBER HOTZENPLOTZ POOR SEPPEL! (T4)



**S12
T4
D7
L2 P3**

Focus on:

- Robotics, engineering (D7)

Goals of the lesson:

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

Seppel suffers a lot in the cave of Hotzenplotz, he is made to work as a slave. He has to clean and cook, he barely gets to eat, he is kept in chains. The worst thing is that he has to grind coffee with Grandmother's musical coffee grinder, it really wears him out. Hotzenplotz burns Kasperl's cap, which he rips off Seppel's head. Later, Seppel must turn the grinder on which Hotzenplotz sharpens his knives and sword.

Main features and interactions of the characters

Charakter	Features	Interactions
Seppel	Sad, wearing Kasperl's pointed red hat	Can cry, turns the skewer with the goose, turns the grindstone
Hotzenplotz	Robber with seven knives	Can talk, eat, move around, closes the door, sharpen knives, take the hat off Seppel's head
Coffee grinder	unique	Plays Grandmother's favorite song while grinding

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!

Suggestions

- Discuss, how people move, do some leg and arm movements together and have the children notice the phases of their own movements
- Build simple figures with movable legs and arms from ArTec blocks
- Research on the internet, what Grandmother's song sounds like. Look for notes and discuss with the students how the individual tones can be played with the buzzer

Build

 Your name _____

Seppel
Hotzenplotz
the coffee grinder

Be attentive, your robot should be able to:

 Your name _____

Move, talk, eat, raise hand(s), turn the grinder, play music

There also should be:

 Your name _____

The robber's cave (with door)
Trees
Skewer with goose
Grindstone

Think over:

 Your name _____

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

Suggested materials

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

THE ROBBER HOTZENPLOTZ POOR SEPPEL! (T4)



S12
T4
D7
L3-4
P4

Suggested materials

- ArTeC Blocks (at least the 112 pcs set) and ArTeC robotics set (1 Studuino motherboard, 2 DC motors, 1-2 servo motors, 4 LED-s, 1-2 Buzzer)
- Mindmap or Chart draft, Storyline
- Character cards and Robotic task card template
- Pencil

Suggestions

- Think about what gestures people use when they are afraid or when they threaten others
- Collect possibilities for how the robot could be controlled to move along a specific route
- Collect possibilities for represent a door that opens

Focus on:

- Robotics, engineering (D7)

Goal of the lesson:

- Fine motor skills
- Problem solving
- Decision making
- Life skills

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
Move ahead
Detect obstacle

Robotic task card

The name of my robot: _____

The parts I need for my robot:

Part	Quantity	Notes
DC motor	2	
Servo motor	1	
LED	4	
Buzzer	1	
IR Photoreflexor	1	

This is how I build and program my robot:

Step	What to do	What to see	What to hear	What to feel	What to think
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

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)
 - Winding the motor until the sensor detects change (2.b, 2.c)
- Programming servo motor (3.a)
 - Moving the arm or tail to up and down (3.b)
- Testing and programming Touch sensor (4.a, 4.b, 4.c)
- Programming LED (5.a)
 - Blinking (5.b)
- Using 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)

Static figure
Seppel and
Hotzenplotz
With arms that can
be moved on axles,
with rotating handle

PROG1

Seppel is standing
next to the spit, a
goose is on the
skewer and roasting

PROG2

The spit with the goose
on the skewer and the
goose roasting at
variable speed

PROG3

The spit with the goose
on the skewer and the
goose roasting at
variable speed

PROG4

THE ROBBER HOTZENPLOTZ POOR SEPPEL! (T4)



S12
T4
D7
L3-4
P5

Ideas for robots on different programming levels

Static figure
Seppel and
Hotzenplotz
With arms that can be
moved on axles, with
rotating handle

PROG1

Seppel is standing next
to the spit, a goose is on
the skewer and roasting

PROG2

The spit with the
goose on the skewer
and the goose
roasting at variable
speed

PROG3

The spit with the
goose on the skewer
and the goose
roasting at variable
speed

PROG4

Seppel roasts the goose on a spit

P1 Geared structure

- Static figures
 - Build Seppel, his arms move on axes
- OR
- The goose rotates on a shafted skewer
 - one end of the skewer has a cog connected to another cog that can be turned by a lever

P2 Seppel with the skewer

- The goose rotates on a skewer mounted on a DC motor.
- Below it, a red LED flashes - this is the fire.
- Seppel is standing in front of it and its arm rotates around a shaft in the shoulder and is eccentrically attached to the spit

P3 Variable speed rotating skewer

- Seppel and the goose on the skewer are constructed in the same way as in P2
- The goose is roasted on a variable speed rotating skewer, illuminated by a red LED at the bottom.
- The speed of the skewer can be continuously varied by means of an IR Photoreflexor and a slider in front of it

P4 Variable speed rotating skewer

- The scene is constructed in a similar way to P3, but with 4 red LEDs illuminating the goose
- The faster the skewer rotates, the more LEDs are lit
- The speed of the skewer can be changed in the same way as P3

