

# THE COMIC BOOK MOUSE

## A LUCKY MATCH (T3)

S10  
T3  
D3  
L1 P3



### In focus:

- Spatial orientation (D3)

#### Task1: How can you communicate with someone who does not understand you?

Students talk about communication and languages.

#### How do you feel when you feel excluded/have been excluded from a group?

Students talk about inclusion and exclusion and their experience about this situation (possible reasons, reactions, solutions).

They dramatize and act out the given situation.

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

#### Idea Bazaar – some ideas:

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:

#### strategies

#### In focus:

- Social skills

- Empathy

- Text comprehension

#### In addition:

- Life skills

- Inclusion strategies

- Communication



#### How to manage output:

Take a video/audio record of the dramatized situation!

#### Task2: How would you communicate in a country where you don't know the language?

Students collect what they would need in a foreign country.

They create their own sign language for these needs.

#### Every solution is good!

Any kind of tool and material can be used!

You can use the ideas and list of materials from the Idea Bazaar, come up with your own ideas or just let the children be creative.

#### Idea Bazaar – some ideas:

- Brainstorming about needs in a new environment
- Collecting types of sign languages
- Making the props

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

#### Developmental fields:

#### In addition:

#### In focus:

- All skills
- Life skills
- Algorithmic thinking
- Attention
- Creativity

- Subject concentration – Arts, IT
- Talent development

# THE COMIC BOOK MOUSE

## A LUCKY MATCH (T3)

S10  
T3  
D3  
L1 P4

**In focus:**

- Spatial orientation (D3)



### Task3: Build a maze:

**Build a maze, play an orienteering game in the maze!**

**Every solution is good!**

Any kind of tool and material can be used!

You can use the ideas and list of materials from the Idea Bazaar, come up with your own ideas or just let the children be creative.



### Idea Bazaar – some ideas:

- They can use cardboard boxes, wooden boards. Nail, spatula, yarn, rubber, glue, etc. (I2)
- They can build a maze in the classroom, e.g. using furniture, boxes, or in the yard, using branches, sand, stones

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

**Take photos of buildings while they are being built and when they are finished.**

### Developmental fields:

**In focus:**

- Spatial orientation
- Fine motor skills
- Creativity
- Social skills

**In addition:**

- Life skills
- Subject – Arts and crafts
- Talent development

### How to manage output:

Organise the completed photos either in an online repository or printed on a notice board. If the children have made notes, or have any additional ideas left over, attach them as well.



Okay



Stay there



Come here



Going down



Going up



Go that way



Which way?



Watch me



Level off



Ears won't clear



Cold



Something's wrong



Get with your buddy



Hold hands



Danger



Low on air

# THE COMIC BOOK MOUSE

## A LUCKY MATCH (T3)

S10  
T3  
D3  
L2 P5



For a while the mouse continued to chew. When he finally realized that he was alone, it was already too dark to look for the road and decided to spend the night at the mill. He was about to fall asleep, when in the darkness two yellow traffic lights came on, there was the sinister rustle of four paws of a hunter. A cat!

"Squash!" said the little mouse, with a shudder. "Gragragnau!" replied the cat. My goodness, it was a comic book cat! The real cat tribe had kicked him out because he couldn't meow properly. The two derelicts hugged each other, swearing eternal friendship and spent the whole night conversing in the strange language of comics. They understood each other wonderfully.

### In focus:

- Spatial orientation (D3)

### Goals of the lesson:

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

### Suggestions

- Discuss how movements are made. Make some movements together and the children should perceive the phases of their own movements.
- Have the children try out different ways to hug each other.
- Discuss why the mouse and the cat could understand each other. What are the basics of communication?
- Discuss what can be a good bases for a friendship.
- Discuss how one can find way in the dark
- Build a simple figure of a mouse with movable legs, arms or mouth from ArTeC Blocks

### 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!

Mouse  
Cat


Falling asleep  
Interact

Mill  
Sacks of flour  
Outdoor places

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

### Main features and interactions of the characters


Character	Features	Interactions
Mouse	eats, interacts	Talk to each other
The cat	Walks,, interacts	



Your name \_\_\_\_\_

**Build** \_\_\_\_\_


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Your name \_\_\_\_\_

**Be attentive, your robot should be able to:** \_\_\_\_\_


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Your name \_\_\_\_\_

**There also should be:** \_\_\_\_\_

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Your name \_\_\_\_\_

**Think over:** \_\_\_\_\_

# THE COMIC BOOK MOUSE

## A LUCKY MATCH (T3)

S10  
T3  
D3  
L3-4  
P6



### Suggested materials

- ArTeC Blocks (at least the 112 pcs set) and ArTeC robotics set (2 Studuino motherboards, 4 Touch Sensors, 2 LEDs, 2 Buzzer, 3 IR Photoreflectors, 3 servo motors, 4 DC motors)
- Mindmap or Chart draft, Storyline
- Character cards and Robotic task card template
- Pencil
- Video of hedgehog movements

### 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).

### In focus:

- Spatial orientation (D3)

### Goals of the lesson:

- text comprehension
- problem solving
- decision making
- expressing movement

### Suggestions

#### Walking

- Discuss how movements are made
- Make some movements together to imitate a mouse and a cat
- Show movable anatomical models to the children
- Build a simple figure with movable legs, arms or mouth from ArTeC Blocks

#### Eating

- Imitate the movements of moving the mouth so that it seems real.

Body  
Mouth

Igy hívjuk:

A robotom tudja majd mozgatni a \_\_\_\_\_

Építs bele aktuátorokat és szenzorokat:

„Érzékelés” zsidóban  
„Csokoládék” kétkben  
Válassz ki a szükséges alkatrészeket!  
Pipád ki, ami kell!



Építsd és programozd meg a robotot úgy, hogy tudjon \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Robo... segítő anyagokat a Technikai Sz... on találasz!

### Related topics in the Technical corner

- Programming DC motor (2.a, 2.b)
- Programming servo motor
  - Moving elements mounted on a servo motor to a given angle (3.a)
- Programming waving movement (3.b)
- Testing and programming Touch sensor
  - Starting and stopping DC motors by pressing the same or different buttons or Touch Sensors (4.b, 4.c)
- Using LED (5.a)
  - Flashing (5.b)
- Using Buzzer (6.a)
- Using IR Photoreflector
  - Testing IR photoreflector (7.a)
  - Detecting obstacles (7.b)
  - Avoiding obstacles, (7.c,d)
  - Moving forward until the black line is found (7.e)

The Comic Mouse is a motor-driven device. The Comic Cat can be moved by axes.

PROG1

The Comic Mouse and Comic Cat can also be controlled with Touch sensors. Both robots have a Buzzer.

PROG2

The Comic Mouse approaches the Comic Cat and they switch on each other's programmes.

PROG3

The Comic Mouse goes as far as the Comic Cat. The cat turns on the mouse button to display their hug.

PROG4



# THE COMIC BOOK MOUSE

## A LUCKY MATCH (T3)

S10  
T3  
D4  
L3-4  
P7

### Ideas for robots on different programming levels

The Comic Mouse is a motor-driven device. The Comic Cat can be moved by axes.

PROG1

The Comic Mouse and Comic Cat can also be controlled with Touch sensors. Both robots have a Buzzer.

PROG2

The Comic Mouse approaches the Comic Cat and they switch on each other's programmes.

PROG3

The Comic Mouse goes as far as the Comic Cat. The cat turns on the mouse button to display their hug.

PROG4



### The coming together

#### P1 Puppeteering

- a.) The directly driven, DC motor-driven Comic Mouse rolls to the Comic Cat.  
b) Build a Comic Book Mouse mounted on a robot trolley.

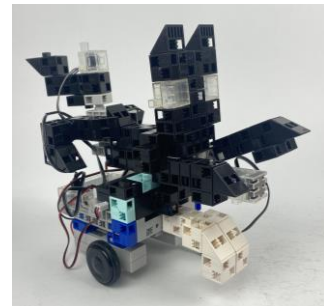
- The programmed Cartoon Mouse starts automatically on switch-on and moves forward for 5 seconds until it reaches the Comic Cat.

#### P2 Characters controlled by Touch sensors

- Build the Comic Mouse as in P1 b), 2 Touch sensors, 1 Buzzer attached.
- The Comic Mouse starts when one Touch sensor is pressed and stops when the other Touch sensor is pressed, and the Buzzer sounds a high-pitched tone.
- Build a Comic Cat mounted on a robot trolley, 1 push button, 1 servo motor, 2 LEDs and 1 Buzzer attached.
- The Comic Cat starts when you press the push button and moves forward for a fixed time.
- Then it stops and the servo motor mounted in its neck moves its head left and right, while the 2 LEDs in its eyes light up and the Buzzer sounds briefly.

#### P3 Infrared Sensor Guided Robot

- Build the comic mouse as in P1 b), 2 IR photoreflectors, 1 push button, 1 servo motor, 1 Buzzer are attached.
- The IR Photoreflector is placed on both sides of the mouse to guide it to the Comic Cat.
- The robot will stop when the Touch sensor is pressed, then the servo motor in the tail and the Buzzer will turn on.
- Build the Comic Cat according to P2. 1 IR photoreflector, 1 push button, 1 servo motor, 2 LEDs and 1 Buzzer are connected.
- The Comic Cat detects the Comic Mouse with an IR sensor. When this happens, it turns on the servo motor built into the cat's tail, the 2 LEDs in its eyes, which start flashing, and the Buzzer.



#### P4 Comic Cat slapping with paws

- The Comic Mouse has the same structure and function as the one in P3, but its Touch sensor is pressed by the Comic Cat.
- Build the Comic Cat mounted on a carriage. The foreleg and tail are mounted on a servo motor, 1 IR Photoreflector, 2 LEDs, 1 Buzzer are attached.
- When the IR photoreflector mounted on the Comic Cat detects the Comic Mouse, it turns on the servo motor built into its front leg and can then tap the mouse button.
- Meanwhile, the servo motor in its tail, the 2 LEDs in its eyes and the Buzzer are activated.

