

THE CAT WHO CAME IN OFF THE ROOF A CAT AGAIN? (T4)

S19
T4
D3
L1 P3

In focus:

- Spatial orientation (D3)



Task 1: Cat memory with Beebots

The pupils play with Beebots individually or in small groups. The larger cat cards are placed under a transparent Beebot mat, the smaller cards are used to form a pile. The players draw a card from the pile, observe the picture and direct the Beebot to the matching pair.

Every solution is correct!

Correct the Beebot's path together if necessary! You can use the pictures from the ideas bazaar or print out your own pictures.



Idea bazaar – some ideas:

- Ready-to-use pictures for the Beebot-MemoryCat cards

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

TIPS!

1. Place several mats next to each other to enlarge the field
2. The transparent BeeBot mat can be replaced with a clear table film. Draw a grid with 15x15cm squares on it with a waterproof pen!

Developmental fields:

In Focus:

- Orientation
- Analytical thinking
- Creativity

In addition:

- Attention, memory
- Subject concentration – visual education
- Talent development

Task 2: Cat origami

The pupils watch the video and fold the cat figures. The video can be played slowly or stopped repeatedly so that the children can keep up with the process.

The task can be made more complex for older pupils or for talented children if the video is first played at normal speed and the folding is only started afterwards.

For language development, the pupils should also verbally formulate the necessary steps before starting with the folding work.

Idea bazaar – some ideas:

- Different cat figures to fold
- Of course you can invent your own designs!

Developmental fields:

In Focus:

- Fine motor skills
- Creativity
- Orientation
- Memory

In addition:

- Attention
- Subject concentration – Technical handicrafts
- Talent development



How to manage output:

Take photos of the finished paper figures and scan the BeeBot cards you have made yourself. Organise an exhibition in the classroom or test the playing cards with other groups!

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Task5: Cat names

The pupils invent funny cat names. Linguistic awareness is encouraged. Alliterative names, names as examples of different grammatical phenomena are asked.

Every solution is good!

Use the ideas from the ideas bazaar or let the children's creativity run wild!

Idea bazaar – some ideas:

- Worksheet with cat pictures

You can find details about the different solutions in the idea sheets!

Developmental fields:

In Focus:

- Language development
- Vocabulary, grammar
- Creativity

In addition:

- Subject concentration – Mother tongue
- Talent development



Task 6: Making cat toys

The pupils plan and design toys for cats or other hobby animals. Research together on the Internet what needs the selected animals have.

Every solution is good!

Use the ideas from the ideas bazaar or let the children's creativity run wild!

Idea bazaar – some ideas:

- Different cat toys
- Of course you can invent your own designs!

You can find details about the different solutions in the idea sheets!

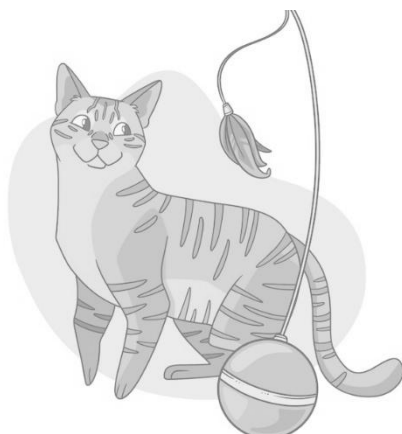
Developmental fields:

In Focus:

- Fine motor skills
- Creativity
- Text comprehension

In addition:

- Attention
- Subject concentration – Technical handicrafts
- Talent development



How to manage the output:

Take photos of the finished workpieces.
 Organise an exhibition or a pet supplies shop in the classroom!

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S19
T4
D3
L1 P6

In focus:

- Spatial orientation (D3)



Task 7: Cat tangram

The pupils get to know the tangram game. A square is cut into seven different plane figures. Figures can be constructed from the five triangles of different sizes, the square and the parallelogram. This time only cat figures are formed.

The cards are printed out, wrapped in foil and cut open, then the game of re-placement begins. The game can be made more complex if the pupils observe the picture for a while and then have to place it from memory.

If the cards are printed out in black and white, or only the silhouettes are shown, other cognitive functions can be encouraged.

Every solution is good!

Use the ideas from the ideas bazaar, or invent new figures!

Idea bazaar – some ideas:

- Tangram figures with cat pictures
- Tangram square to cut open (if no tangram game made of wood, plastic, ... is available)

You can find details about the different solutions in the idea sheets!

Developmental fields:

In Focus:

- Orientation
- Memory
- Analysis-Synthesis
- Creativity

In addition:

- Subject concentration
– Crafts, visual education
- Talent development



Task 8: Making a bookmark

The pupils design a bookmark in the shape of a cat.

Every solution is good!

Use the templates from the ideas bazaar or let the children's creativity run wild!

Idea bazaar – some ideas:

- Different bookmarks
- Of course you can invent your own designs!

Developmental fields:

In focus:

- Fine motor skills
- Creativity
- Text comprehension

In addition:

- Attention
- Subject concentration
– visual education
- Talent development



How to manage the output:

Take photos of the finished workpieces.
Organise an exhibition or a pet supplies shop in the classroom!

THE CAT WHO CAME IN OFF THE ROOF A CAT AGAIN? (T4)

S19
T4
D3
L2 P3



Focus on:

- Spatial orientation (D3)

Goals of the lesson:

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

The ginger cat was standing in the front garden. Under a lilac bush. She turned her head to look at Tibble and Bibi, staring straight at them. And again they both saw Minou's eyes. But the most horrifying thing of all was, that the cat had a thrush in her jaws. A freshly caught, live, fluttering thrush. Bibi yelled and waved her arms and in a flash the cat ran off through the bushes at the side of the house with the bird in her mouth. „I'm going after her!“ Bibi cried, but Tibble stopped her. „Don't,“ he said. That bird's probably wounded and half dead... it's best to just leave it.“ They stood there at the hedge. Minou had disappeared round the back of the house with her prey and Bibi started to cry. „Don't cry,“ Tibble said. „It's just the way things are. You can't stop a cat from being a cat. And cats catch birds.“ „I saw that expression on Minou's face a lot,“ said Bibi. „When we were in the park and a bird landed near us. I thought it was creepy. I'd shout out, 'It's not allowed.' And then she was always so ashamed of herself. But now she's not ashamed anymore. And that's why I'm crying.“

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 the cats' movements work, look at pictures and videos together so that the children can observe the phases of their movements
- Build simple figures with movable legs and arms from ArTeC blocks

Main features and interactions of the characters

Charakter	Features	Interactions
Ginger cat	Cautious, freezes when she feels insecure	Runs, holds prey in the mouth, chases birds
Bibi	Little girl, she loves Minou very much, afraid of losing Minou, disappointed	Waves her arms, cries, talks to Tibble
Tibble	Young journalist, clever, has experience with cats, can calm Bibi down	Talks, holds back Bibi

A ginger cat

Tibble

Bibi

move, talk, hold the prey in the mouth, wave the arms

Garden with shrubs

Garden fence

House wall

Prey

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

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Suggested materials

- ArTeC Blocks (at least the 112 pcs set) and ArTeC robotics set (1 Studuino motherboard, 2 DC motors, wheels, 2-3 servo motors, 1 Touchsensor, 1 or 2 IR-Photoreflektors, 1 or 2 Buzzers)
- Mindmap or Chart draft, Storyline
- Character cards and Robotic task card template
- Pencil

Suggestions

- Think about what gestures cats make when they are cautious or when they are hunting and following a prey.
- Collect ways in which robots could be used to illustrate a cat catching prey and carrying it in its mouth.
- Collect the ways in which robots could be used to represent a fluttering bird.

moving around, talking
waving the arm to scare
something away, carrying the
bird in the mouth, flapping
the wings

Focus on:

- Spatial orientation (D3)

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.

Related topics in the Technical corner

- Programming DC motor
 - Winding the motor until the sensor detects change (4.b, 4.c)
- Programming servo motor
 - Moving the arm or tail to up and down (3.b)
- Testing and programming Touch sensor (4.a, 4.b, 4.c)
- Testing and programming IR Photoreflexor (7.a, 7.c, 7.e)
 - Using an IR Photoreflexor for detecting an object (7.d, 7.e)
 - Line tracing robots using 1 IR Photoreflexor
 - Labyrinth-traversing robots
- Using Buzzer (6.a, 6.b)
- Using random numbers (10.a)

Robotic task card

The name of my robot: _____

The parts I need for my robot:

Part	Quantity	Notes
DC motor	1	
Servo motor	1	
Touch sensor	1	
IR Photoreflexor	1	
Buzzer	1	
Random number generator	1	

Choose the parts you need (check you need all the parts) and write them in the table. You can use the support materials in the Technical corner!

This is how I build and program my robot:

What do I want?	What do I need?	What do I do?	What do I see?	What do I hear?	What do I feel?	What do I think?

This is how my robot will work: (Write it in complete sentences using the table above!)

Build Bibi, Tibble, or a cat with movable arms, legs and tail

PROG1

The ginger cat moves around the garden. It suddenly stops and its eyes start to sparkle

PROG2

Bibi and Tibble talk behind the fence, then Bibi gets up and starts waving her arms around

PROG3

The ginger cat comes into the garden, Bibi tries to scare it away. The cat freezes, its eyes sparkle as it looks at Bibi, then it walks on and Bibi cries

PROG4

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Ideas for robots on different programming levels

Build Bibi, Tibble, or
a cat with movable
arms, legs and tail

PROG1

The ginger cat moves
around the garden. It
suddenly stops and its
eyes start to sparkle

PROG2

Bibi and Tibble talk
behind the fence,
then Bibi gets up
and starts waving
her arms around

PROG3

The ginger cat comes into the
garden, Bibi tries to scare it
away. The cat freezes, its eyes
sparkle as it looks at Bibi, then
it walks on and Bibi cries

PROG4

Minou and the ginger cat

P1 Bibi, Tibble or a ginger cat

- Static figures
- Their limbs and the cat's tail can move on axes

P2 A ginger cat in the garden

- Build the ginger cat
- It moves on wheels, driven by 2 DC motors
- Set the operating time of the motors so, that the figure stops briefly when it is opposite the fence
- After 'freezing', it turns round and runs away.

P3 Bibi and Tibble

- Build Bibi and Tibble
- The two figures are programmed using the same Studuino motherboard
- They have a conversation: they turn their heads towards each other, the talking can be represented by buzzers.
- After three 'sentences' Bibi starts to scream and swings her arms: set the buzzer to a different frequency and switch on the servo motor in the arm

P4 The ginger cat and Bibi

- Build the figures
- The red cat is equipped with a touch sensor or an IR photoreflector
- When the touch sensor is pressed, it stops and its eyes (LEDs) start to light up
- After a certain time, she turns away, her eyes light no longer up and runs away
- Bibi is equipped with two touch sensors
- When the cat appears in the garden, Bibi swings her arm at the touch of a button, she stops at the second touch of a button
- When the cat turns around, Bibi starts to cry. This happens with the help of a buzzer and a second touch sensor.

OR

- Build the ginger cat
- Programme it as in P3
- It should also hold a bird in its mouth, which flutters with its wings

