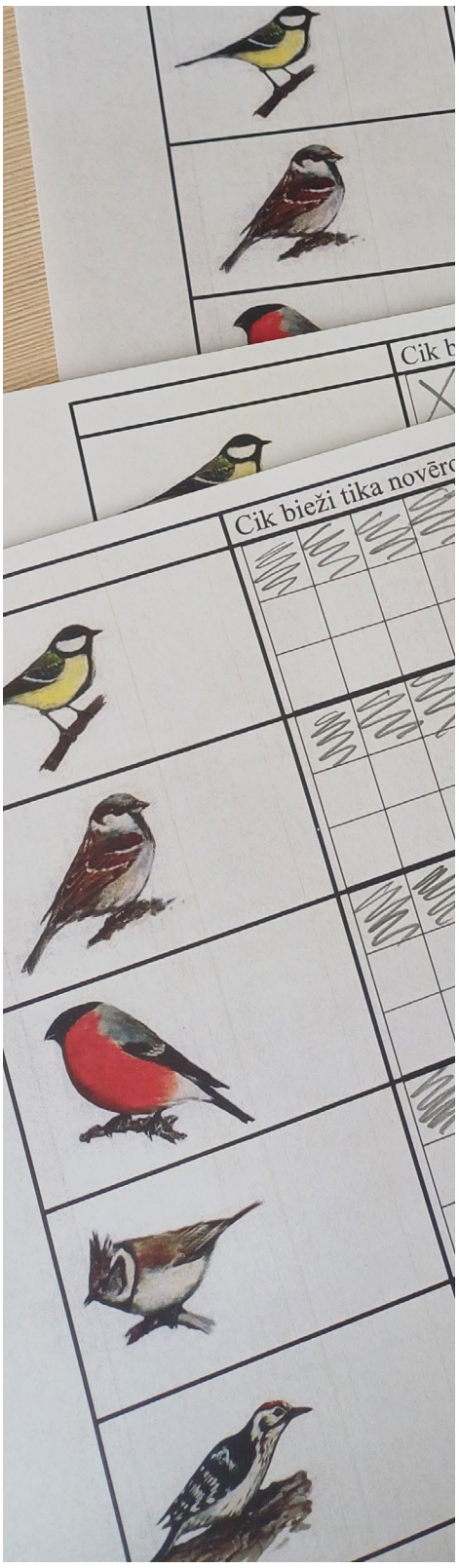
Lesson Plan

BIRDWATCHING



Subjects: Science, Mathematics, Design and Technology
Age Range: 4th - 6th Grade
Lesson Duration: 120 min

Objective / Competence development:

- To promote students' interest in nature and birds in Latvia.
- To develop observation, logical thinking and collaboration skills.
- To integrate science, mathematics, technology, engineering and art in one lesson.
- To improve the ability to analyze, compare, visualize and present information.

Planned activities:

- Research about birds - in digital information sources, books and other visual materials, grouping prepared images, bird names.
- Construction and installation of a bird feeder in the school territory, in cooperation with the local community.
- Research and discovery with the diversity of birds in the school territory.
- Creation of worksheets, obtaining statistical data, analysis, etc., quizzes, make a memory game.

Resources needed:

- Bird feeder (untreated wooden boards, fasteners, screws, logs, etc. suitable natural materials, assembly tools).
- Visual materials about birds (printed pictures, bird names, books, internet resources).
- Tablets, phones, worksheets.
- Paper, laminator, scissors.

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Introduction	**Achievable outcomes:** • Explores nature and studies birds in their surroundings using observational skills. • Uses digital tools consciously. • Analyzes and summarizes data mathematically. • Collaborates in a group. **Update:** The lesson discusses birds, their diversity and importance in nature. Children express their ideas in a brainstorming session, and they are written down, taking into account the opinion of the entire group. The teacher complements what the children say, explaining the importance of birds in the ecosystem, highlighting their special role - regulating the number of pests in nature, preventing their excessive reproduction.
Research **''The Importance of Birds?''** **(1 lesson)**	**Assumptions and table creation:** Students make assumptions about what birds they know and what they might encounter in the school area. A table "Birds" is created, which summarizes the students' assumptions in a structured way. Using prepared, colorful, printed pictures and names of birds, students make comparisons by studying books and other materials. **Student's activity:** 1. Studies materials about birds and makes an assumption about which birds they know (choose at least 3). 2. Fills in the table by gluing pictures of birds and the corresponding names, using the available materials. **Comparison and evaluation:** Students present the created table and express their assumptions about which birds they know and which ones they might encounter in the school area.
Part 2 **Outdoor activity: "Bird Detective"** **(1 lesson)**	**Achievable result:** • By observing and comparing, they name and describe birds found in the immediate vicinity. • They learn to collect, analyze and structure the data obtained. **Update:** The task is to test your assumptions about the diversity of birds in the school area. Birds can be observed outside the window. **Practical part – expedition:** • The obtained data is summarized in a table. • The data is analyzed, calculations are performed and conclusions are drawn. • The summarized results are recorded on worksheets. **What can be calculated in a bird watching study?** 1. Total number of birds • How many birds were observed in total in the entire study (in all locations, on all days). 2. Proportion of each species • Calculates what percentage of all observed birds are, for example, tits, crows, pigeons, etc. • Formula: (Number of a specific species ÷ total number of birds) × 100% 3. Number of birds at different times or locations • Compares the number of birds, for example, in the morning and afternoon hours. • Compares observations in different locations (schoolyard, near the forest, near the feeder, etc.). 4. Average daily number of birds • Calculates how many birds were observed on average each day. • Formula: total number of birds ÷ number of observation days.

	5. Determination of the most common bird (mode) • Determines which bird species was observed most often. 6. Dynamics of bird numbers by week • Creates graphs that show how the number of birds changes over time. 7. Distance to birds or between feeders • If measurement or coordinate data is available, calculate distances.
Part 3 **QUIZ - "Bird detective", memory game** **(1 lesson)** **Reflection**	**Achievable result:** To strengthen knowledge about birds in nature and the frequency of their occurrence in the school area. To develop children's decision-making and thinking skills. **Practical part:** A quiz is created on the Quizizz platform from the obtained data, which can be used repeatedly to test and consolidate knowledge. Quiz in English - • https://wayground.com/admin/quiz/69e4db3be5d92511baa7117c Quiz in Latvian - • https://wayground.com/admin/quiz/69d60924a0e5614fc9ea4c89 From the resulting images, a memory game is created together to be played at the end. This game later can be reused in other school activities and events. **Feedback:** Students participate in a quiz game, thus reinforcing the material learned and testing their knowledge. Training their memory by playing a memory game.

Worksheet “Bird Detective”

	How often was this bird observed?											Average frequency/ Percentage	
													
													
													
													
													

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Memory game

Lielā zīlīte / Great tit

Lielā zīlīte / Great tit

Meža zīlīte / Wood tit

Meža zīlīte / Wood tit

Zilzīlīte / Blue Tit

Zilzīlīte / Blue Tit

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Cekulzīlīte / Crested tit

Cekulzīlīte / Crested tit

Gaišzilā zīlīte / Light blue tit

Gaišzilā zīlīte / Light blue tit

Pelēkā zīlīte / Willow tit

Pelēkā zīlīte / Willow tit

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Dižraibais dzenis / Great spotted woodpecker

Dižraibais dzenis / Great spotted woodpecker

Mazais dzenis / Lesser spotted woodpecker

Mazais dzenis / Lesser spotted woodpecker

Vidējais dzenis / Middle spotted woodpecker

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Baltmuguras dzenis / White-backed woodpecker

Baltmuguras dzenis / White-backed woodpecker

Mājas zvirbulis / Tree sparrow

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Lauku zvirbulis / Eurasian tree sparrow

Lauku zvirbulis / Eurasian tree sparrow

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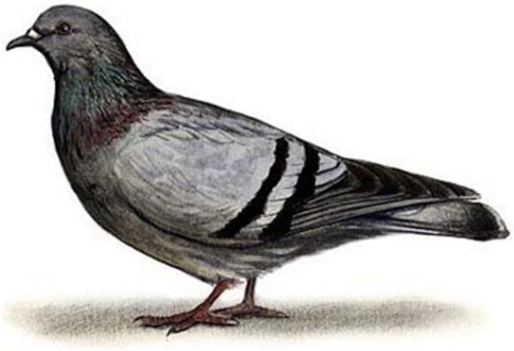
Sarkankrūtītis / Robin

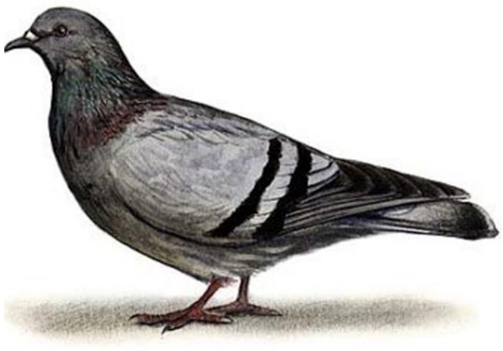
Sarkankrūtītis / Robin

Baltais stārķis / White stork

Baltais stārķis / White stork



Mājas balodis / Feral pigeon



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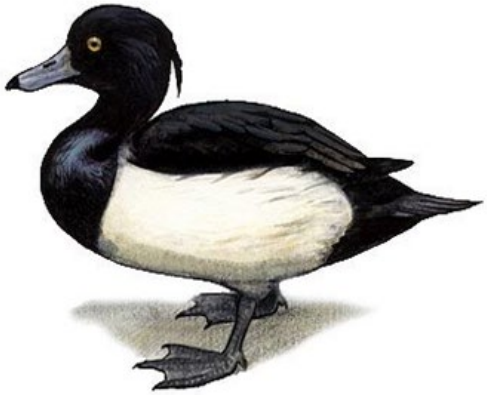
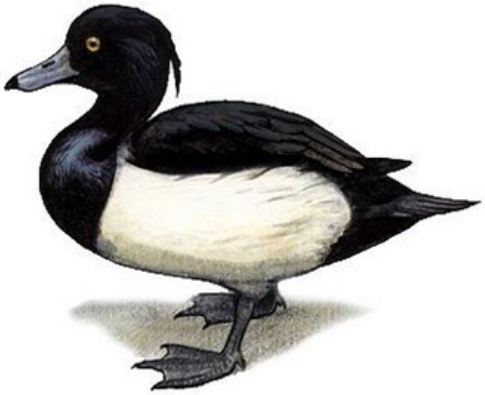


Cekulpīle / Tufted duck



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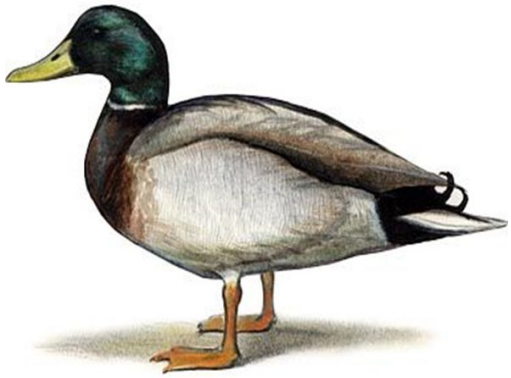
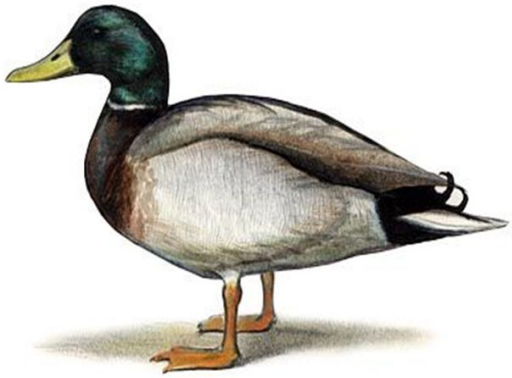


Meža pīle / Mallard



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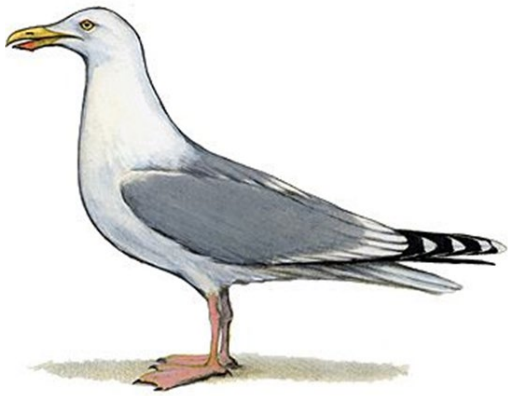
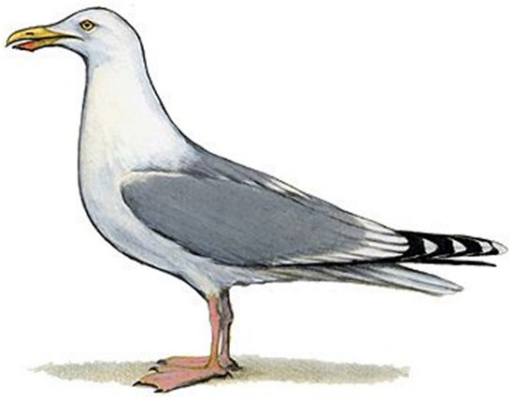


Sudrabkaija / Herring gull



Sudrabkaija / Herring gull

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Mājas strazds / Common starling

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Pelēkā vārna / Hooded crow

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Sīlis / Eurasian jay

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Dzilnītis / Nuthatch

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Dzērve / Common crane

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Meža stērste / Rustic bunting

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