LESSON PLAN

BUILDING BIRD FEEDERS



Subjects: Science, Mathematics, Design and Technology, Environmental Education
Age Range: Preschool (5-6 years)
Lesson Duration: 7-8 lessons (including seasonal outdoor observations)

Actuality/ problem to be solved: Children spend less time outdoors and are increasingly disconnected from nature. There is a growing need to develop ecological awareness, responsibility, and empathy towards living beings through real-life, hands-on activities.

Message for the Child: "When we take care of birds, we take care of nature - and nature takes care of us!"

Planned Activities:
Planned Activities (main blocks):
Part 1 - Getting to know birds using books, pictures, videos and digital resources.
Part 2 - Designing a bird feeder, building it in collaboration with parents and installing it in the preschool area.
Part 3 - Observing birds in different seasons.
Part 4 - Creating a memory/cognition game about the observed birds.
Part 5 - Conclusions

Knowledge and skills to be acquired:
- Understanding bird life and basic needs;
- Learning how seasons affect wildlife;
- Measuring, counting, and comparing (math skills);
- Creativity and design skills;
- Responsibility, empathy, and cooperation;
- Observation and recording skills;
- Bird viewing materials;
- A device for taking photos and videos.

Required Resources/equipment:
- Wooden boards or planks;
- Screws, screwdriver, hammer;
- Birdseed (different varieties);
- Rope or hooks for hanging feeders;
- Outdoor installation area.

Follow up plans
- Regular bird-watching activities;
- Recording and identifying bird species;
- Seasonal maintenance and refilling with food the feeders;
- Integration with language, art, and science lessons.

STEAM outdoor activity centre - Outdoor Construction and Observation Centre for Bird Feeders

Part 1 - Exploration | 3 lessons

Expected Learning Outcome	Children understand why birds need help, especially during winter.
Engagement:	**Lesson 1** The teacher stimulates children's interest in birds and their lives through conversation, visual materials, and the children's prior experiences. The conversation takes place in a circle, creating a safe and supportive environment for expressing opinions. Using the "KWL" method in a table format, children identify what they know, what they want to find out, and what they have learned. (See the attached 1) They explore video materials and images (see attached 2) about birds and their life in winter. https://www.youtube.com/watch?v=WcbZgEVXtQk **Teacher's questions:** • What is a bird? How can we tell that it is a bird? • What birds do you think live in our kindergarten? • Where do birds live? Do they have homes? **The teacher encourages the children to watch a video about birds in winter.** **Teacher's action:** • Leads the conversation, asks open-ended questions. • Encourages children to justify their answers. • Writes down children's ideas or summarizes them orally. • Supplements children's statements with explanations about the basic needs of birds. • The teacher discusses with the children which birds are shown on the cards and what they eat in winter. **Child's Activity:** • Listens to questions and answers them. • Shares experiences about birds. • Expresses assumptions and ideas. • Engages in conversation and brainstorming. • Children look at the picture cards and, together with the teacher, discuss what is shown on them (bird names). • Watch a video about birds in winter and recognize them from images. • Children ask themselves questions that interest them.
	Lesson 2 To explore what birds eat, what they should not eat, and what they need in winter and summer. **Teacher's questions:** • What do birds eat in the summer? Is it easy for birds to find food in the winter? • Why do birds need human help in the winter? • What would happen if birds had nothing to eat? • How can we - children and adults - help birds? • When do you think it's best to feed birds? **Teacher's action:** • The teacher discusses with the children what birds eat and what they should not eat and how much food should be given. • The teacher offers the children to complete a task. "Let's Feed the Birds." (See attached 3)

	Child's Activity: • Listens to questions and answers them. • Shares experiences about birds. • The children complete the task. "Let's Feed the Birds." (See attachced 3)
	Lesson 3 Explores different types of bird feeders and different materials (wood, plastic, cardboard), identify their properties, and understand which material is most suitable for making a bird feeder. **Teacher's questions:** • Where do birds live in winter? • Do birds need help? • What is a bird feeder? • What materials can be used to make a bird feeder? **Teacher's action:** • The teacher shows the children pictures of bird feeders and discusses which one would be most suitable for the birds. • The teacher discusses with the children different materials and their properties that can be used to make bird feeders. Demonstrates wood, plastic, and cardboard. • The teacher organizes experiment by soaking the materials (wood, plastic, cardboard) so that children can observe how they react to moisture. **Child's Activity:** • Children look at pictures of bird feeders and discuss which feeder would be most suitable for birds in winter. • Participates in the experiment and observes what happens to the materials when they are soaked in water.
Making assumptions	**Teacher's action:** • Introduces the task and the table of "Bird Explorer". • Divides children into subgroups. • Provides visual materials (video, pictures, books) and drawing supplies. **Child's Activity:** • Make assumptions and draw possible birds that might fly to the feeder and what food they would choose. • Complete the table with drawings. **Teacher's questions:** • Will birds visit the feeder? • Which birds might visit the feeder? • Which food do you think birds would prefer? **Child's Activity:** • Makes assumptions about whether and which birds will visit the feeder. • Which food they would prefer, and draw the possible birds that might fly to the feeder, as well as the food they would choose.
Comparison and evaluation	The children present their drawings and make assumptions about which birds they might encounter in the kindergarten area and what food they would choose. Together with the group of children, conduct a "brainstorming session," discussing the most important and relevant things about bird feeders in winter and what birds eat during the winter.

Part 2 - Implementation of the Plan | 1 - 2 lessons

Expected Learning Outcome	Implement your plan, following safety rules and cooperating with others.
Engagement:	The teacher encourages the children to move from research to practical activity, updating previously acquired knowledge about the needs of birds and making a bird feeder. **Teacher's questions:** • What did we learn about birds in previous lessons? • Why do birds need a feeder in winter? • What kind of feeder would be comfortable and safe for birds? • What should be considered so that birds can feed without disturbance? • What materials can a feeder be made of? • How should we behave and what should we observe when working with tools? **Teacher's action:** • Leads the conversation and asks open-ended questions. • Helps children connect theoretical knowledge with practical tasks. • Updates safety rules. • Encourages children to express ideas about the appearance and functionality of the feeder. (See attached 4) **Child's Activity:** • Recalls previously acquired knowledge. • Answers questions and expresses own thoughts. • Offers ideas for creating a feeding station.
Choosing the design of the plan	Each child draws their own bird feeder design. The children review all the designs and evaluate which ones would be the best based on size, materials, and suitability. **Teacher's action:** • Offers to look at different examples of bird feeders. • Encourages children to think about the functionality of the feeder. • Encourages children to draw their own bird feeder design. • Together with the children, review all the designs and evaluate which one would be the best **Child's Activity:** • Draw your own feeder idea • Tell us about your chosen design • Participate in a discussion about which bird feeder designs would be the best.
Developing / constructing the plan	**Bird feeders in cooperation with parents.** • In cooperation with parents, the necessary materials for making the bird feeders are provided (wooden boards, nails, hammers, screws, recyclable materials, etc.). • Parents are involved in the process of creating the bird feeders, following safety rules, measuring the length of the boards, and counting the boards. As a result, two large bird feeders are created. • The feeders are placed on both sides of the kindergarten so that it can later be observed which feeder attracts more birds. **Bird feeders made by children.** • The children are divided into 5 groups. Each group: Bird feeder creation: • Agrees on their bird feeder idea. • Chooses materials from recycled resources (milk cartons, cardboard boxes). • The children work together to create a bird feeder from the chosen materials.

	• The children follow safety rules. • Each group agrees on where to place their feeder within the kindergarten area. • The children decide what food to put in the feeder (e.g., seeds, grains). • The children agree within the group where to place the created bird feeder (in a shaded place, under a shelter, near a tree). **Bird feeder care:** • The children regularly refill the food. • Observe birds and make simple notes or marks (e.g., how many birds were seen). • Take care of the cleanliness and safety of the feeder. • Each group of children talks about their work. **Reflection:** • What went well? • What was difficult to do?
Evaluating the work	Discussing stability, usability, and appearance of the feeders. The teacher encourages them to share what worked, what was difficult, and what they would like to do differently next time.

Part 3 - Practical / Outdoor Lesson (in autum-winter) | 1 lesson

Expected Learning Outcome	Children can distinguish bird footprints, their direction, and learn the cardinal directions (North, East, South, West).
Engagement	The children look at pictures and a short video about bird footprints in the snow and how it is possible to determine the cardinal directions in nature. The teacher encourages the children to share their knowledge and experiences about birds in winter, as well as whether they have seen footprints in the snow. **Teacher's questions:** • "How can we understand where the bird has gone?" **Teacher's action:** • The teacher explains and shows what bird footprints look like in the snow. The teacher also explains the cardinal directions. • The teacher offers the children to examine bird tracks using a magnifying glass. (Attached 5) **Child's Activity:** Children make predictions and share their ideas about the meaning of the footprints and how to determine the direction by drawing and exploring using a magnifying glass.
Practical part (hands-on activity)	The children go outside to the bird feeders and observe bird footprints left in the snow. First, they discuss to whom these footprints belong. Then they investigate in which direction the birds have gone by identifying the cardinal directions (North, East, South, West). After studying bird footprints, the children create their own trail of footprints and observe how it is possible to determine the direction a person has gone. **Teacher's action:** • Goes to the feeder with the children. • Offers children the opportunity to explore different bird footprints in images. • Introduces the children to the cardinal directions and explains how to determine them.

	Child's Activity: • Examines bird footprints in the snow. • Determines the direction the birds have gone using cardinal directions. • Leaves their own footprints in the snow. • Explores how to determine the direction a person has gone.
"Circle" - reflection and discussion	The children discuss their experience during the lesson together. They share their observations about bird footprints in the snow. They talk about what was most interesting and what was most difficult. **Teacher's questions:** • What new things did you learn today? • What did you find most interesting in this lesson?

Part 4 - Practical / Outdoor Lesson (in spring-summer)

Expected Learning Outcome	The child is able to distinguish and classify birds by season (winter, summer, and year-round birds) based on observations and gathered information.
Engagement	The children look at and learn about materials about birds found in summer and winter, and compare them. They investigate which birds return from warm regions. **Teacher's action:** • Tells the children about birds that return from warm regions. • Shows pictures of birds that are found in summer. • Creates the game "Summer and Winter Birds" (picture cards of summer and winter birds and 3 boxes labeled: Summer Birds, Winter Birds, and Both Summer and Winter Birds). • Creates QR codes about birds found in the local area and describes their appearance and characteristics. **Child's Activity:** • The children look at the pictures and learn about summer birds. • Share their experiences about birds returning from warm countries.
Practical part (hands-on activity)	Children play the game "Summer and Winter Birds" by independently reading the cards, observing the birds, and sorting them into the appropriate boxes. Participates in the movement game "The Hawk and the Sparrows." The rules of the game can be found in the appendix. (Attached 6) **Teacher's action:** • Monitors the progress of the game and provides support if necessary. **Child's Activity:** • Plays the game "Summer and Winter Birds." • Participates in the movement game "The Hawk and the Sparrows.
"Circle" - reflection and discussion	**Teacher's action:** • Provides positive and supportive feedback. • Encourages children to evaluate what they have learned.

	Teacher's questions: • What birds can you name? • Which birds live here all year round? • Which activity did you like the most? **Child's Activity:** • Answers questions. • Expresses emotions and reflections.

Part 5 - Conclusions

Feedback	Teacher notes children's engagement, problem-solving skills, and responsibility.
Observation and improvement	**Feedback:** The teacher observes children's engagement, problem-solving skills, and sense of responsibility. **Observation and improvement:** Improving the design of the bird feeders if necessary and adjusting their placement based on observations. **Teacher's action:** • Creates QR codes with descriptions and images of birds that have visited the feeders in our preschool area in winter and summer, as well as birds that are present throughout the year. • The QR codes are placed near the feeders. The teacher uses a smart device to scan the QR codes and access digital content (images, and short descriptions of birds). This helps children connect their observations with the acquired information and develops their digital skills. **Child's Activity:** • Together with the teacher, the children read bird descriptions using QR codes and try to guess what kind of bird it is, then look at the image. • If a new bird is observed at the feeder, the children observe the bird and create a QR code. • QR codes can also be used by other groups when learning about birds. Children have made observations of the bird feeders and, together with the teacher, discuss whether improvements are needed, whether the food was falling out, whether it was easy for the birds to reach the feeder, and whether the feeder is placed in a good location. If necessary, make improvements (change the location or repair the construction).

Attachment 1 - KWL Table

ES ZINU I know	ES GRIBU ZINĀT I would like to know	ES UZZINĀJU What I have learned

Attachment 2 - Bird Picture Cards



BAROTAVA



SĒKLAS



ZĪLĪTE



ZVIRBULIS



GRAUDI



RIEKSTI



SĪLIS



DZENIS



PUTRAIMI



SPEĶIS



MĀJAS
BALODIS



ŽAGATA

CONNECT - What birds are eating in the winter?

SAVIENO - KO DOT PUTNIEM ZIEMĀ ĒST?





CHOCOLATE

ŠOKOLĀDE



SUNFLOWER SEEDS

SAULESPUĶU SĒKLAS

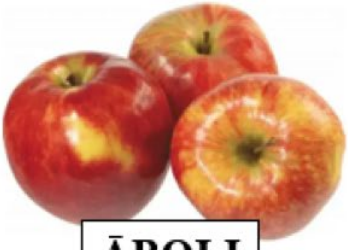


SPEĶIS BACON



BREAD

MAIZE



ĀBOLI APPLES

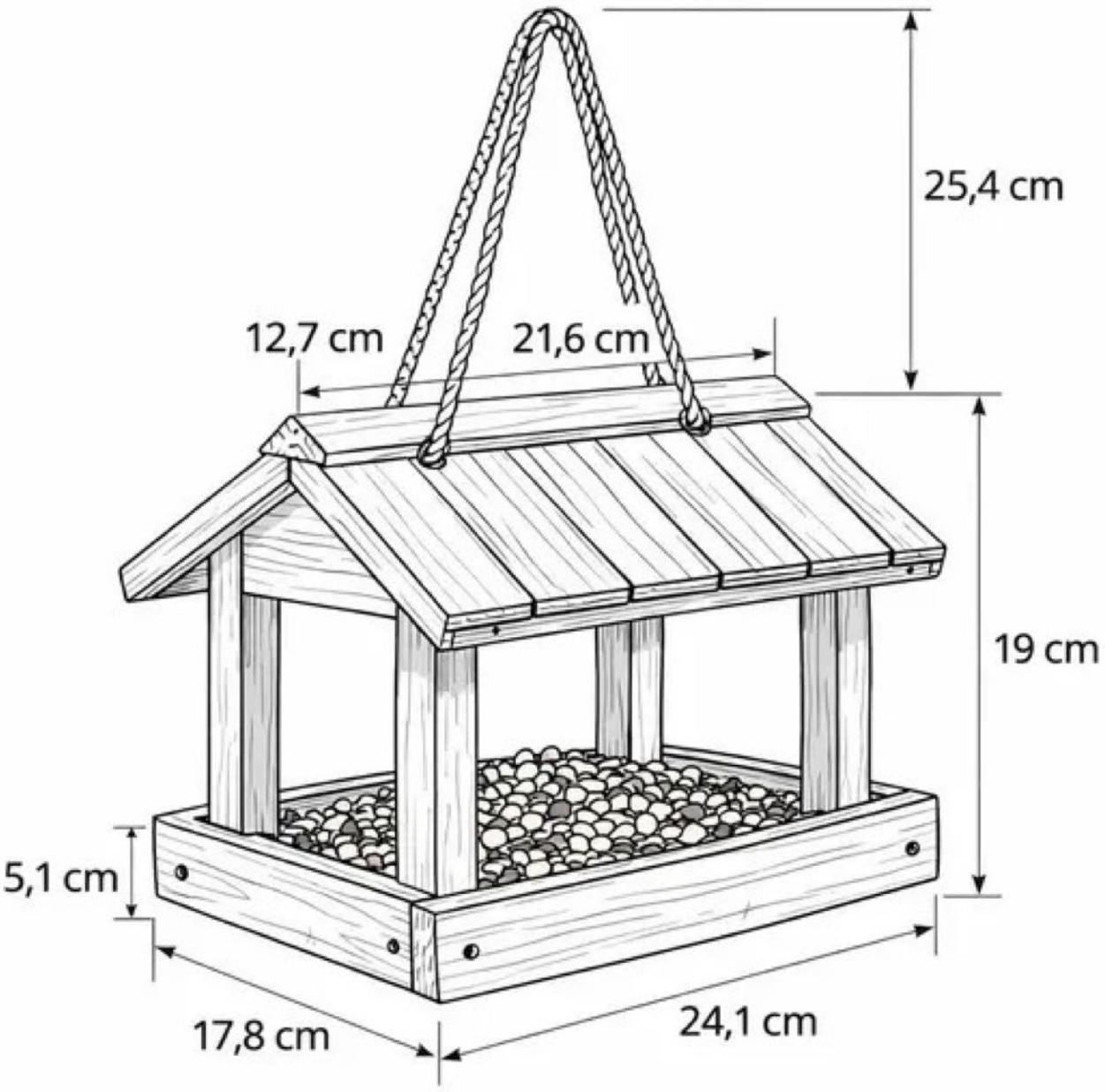


GROATS

PUTRAIMI

Attachment 4 - "Bird Feeder Design" Worksheet

OPTIMĀLIE IZMĒRI PUTNU BAROTAVAI
Optimal measurements for a bird feeder



Attachment 5 - “Bird Footprints” - Worksheet

IDENTIFY BIRD TRACKS IN THE SNOW

Look at the bird tracks in the snow and match them to the bird that made them!

1. SPARROW



Sparrows leave tracks with three toes pointing forward and one pointing backward.
The tracks are small and close together.

2. DUCK



Ducks leave tracks with webbing between the toes.
The tracks are larger and the webbing is clearly visible.

3. CROW



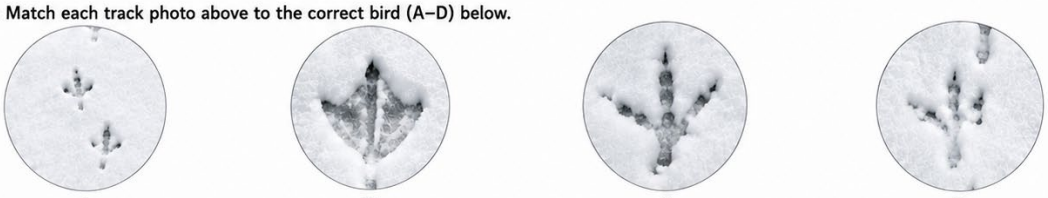
Crows leave large tracks with three toes pointing forward and one pointing backward.
The tracks are big and the gaps between them are larger.

4. WOODPECKER



Woodpeckers leave tracks with two toes pointing forward and two pointing backward.
The tracks often appear in pairs, one on each side.

Task: Match each track photo above to the correct bird (A–D) below.



A B C D

PUTNU PĒDU ATPAZĪŠANA ZIEMĀ

Aplūko pēdu nospiedumus sniegā un mēģini noteikt, kurš putns tos atstājis!

1. ZVIRBULIS



Nelielas pēdas ar trim priekšējiem pirkstiem un vienu aizmugurē.
Soļi mazi un cieši.

2. PĪLE



Platas pēdas ar peldplēvēm starp pirkstiem.
Soļi atstāti ar nelieliem sānu atstatumiem.

3. VĀRNA



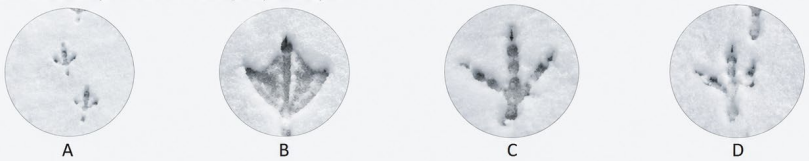
Lielas pēdas ar trim bieziem pirkstiem priekšā un vienu aizmugurē.
Soļi salīdzinoši gari.

4. DZENIS



Divi pirksti vērsti uz priekšu, divi – uz aizmuguri.
Soļi palīdz piekerties koku stumbriem.

Uzdevums: Savieno putnu ar tam raksturīgāko pēdu nospiedumu!



A B C D

(Created with the assistance of the AI tool ChatGPT).

Movement Game: "Hawk and Sparrows"

Duration: 10-15 minutes

Number of participants: 10-25 children

Game leader: 1 child - the "hawk"

Players: The remaining children are the "sparrows"

Rules: One child is chosen to be the "hawk", while the other children are the "sparrows". While the music is playing or the teacher is clapping their hands, the sparrows "fly" and "peck" at the grains. When the music or clapping stops, the sparrows must quickly fly into their "nests" (circles marked on the ground) so that the hawk does not catch them.

Attachment 7 - Table for observing summer and winter birds

Tabula vasaras un ziemas putnu vērošanai
(Table for observing summer and winter birds)

Vasarā sastopamie putni	Ziemā sastopamie putni

Attachment 8 - Rules and guidelines for feeding birds in winter

Noteikumi un kārtība, kas jāievēro barojot putnus ziemā

Kādai jābūt putnu barotavai?

Barotavai jābūt tādai, lai putni varētu viegli piekļūt barībai – lai tā neapsnigtu un ieeja barotavā netiktu aizputināta, un lai barību varētu viegli papildināt.

Tā nebaidītu putnus – bez vaļīgām, plīvojošām detaļām, stabili nostiprinātai (izņemot pakārtās barotavas).

Klasiska putnu barotava *sastāv no grīdiņas ar malām un jumtiņa. Grīdiņas malas novērš barības notraukšanu zemē, bet jumtiņš neļauj barībai apsnigt. Šīs barotavas var nostiprināt uz palodzes, kokā, uz celma vai staba. Barotavas izmēri nav stingri noteikti, tie var variēt plašās robežās. Ja negrib barotavā ielaist lielos putnus (žagatas, baložus), kuri barību ziemā spēj sameklēt paši, tad barotavas ieejas izmēriem jābūt tādiem, lai šie putni barotavā nevarētu iekļūt. Mazajiem dziedātājputniem, no kuriem lielākais putnu barotavas apmeklētājs ir melnais meža strazds, barotavas ieejas izmēriem nevajadzētu pārsniegt 6–7 cm.*

Kad labāk barot?

Barotava ir jāpiepilda agri no rīta – līdz ar gaismas uzaušanu, kad pēc garajām un aukstajām naktīm putni sāk aktīvi meklēt pārtiku.

Ja iesāc barot ziemā-pārstāt var tikai pavasarī!!!

Ar ko labāk barot?

Putniem ziemas laikā nepieciešams daudz enerģijas, tāpēc šajā laikā vispiemērotākā ir barība ar augstu tauku saturu. Svarīgi atcerēties, ka putnu barība nedrīkst būt sālīta, jo sāls kaitē putnu gremošanas sistēmai!

- *Tauki, speķis – laba barība zīlītēm, dižraibajiem dzeņiem, dzilnīšiem un strazdiem.*
- *Melnās saulespuķu sēklas*
- *Zemesriekstus iecienījuši zīlītes, zaļžubītes, lauku zvirbuļi, dzilnīši un dižraibie dzeņi. Dzilnīši un pelēkās zīlītes var riekstus glabāt slēptuvēs.*
- *Citas sēklas un graudi – kaņepes, linsēklas, kā arī miežu putraimi, grūbas, prosa, novārīti zirņi un pupas u.c.*
- *Kaltēti augļi, piemēram, rozīnes, garšos melnajiem mežastrazdiem un pelēkajiem strazdiem.*
- *Ābolus, bumbierus un citus augļus iecienījuši strazdi, zīdastes un zīlītes.*

Veselība un higiēna!

Kad liels skaits putnu sapulcējas vienā vietai, pieaug saslimšanas iespēja. Tāpēc barotava regulāri jātīra, lai tajā neuzkrājas barības atliekas vai putnu mēsli.

Rules and Guidelines for Feeding Birds in Winter

What should a bird feeder be like?

The feeder should allow birds easy access to food – it should not get covered in snow, the entrance should not be blocked by windblown snow, and it should be easy to refill. It should not scare the birds – no loose, fluttering parts, and it should be stably secured (except for hanging feeders).

A classic bird feeder consists of a tray with edges and a roof. The tray edges prevent food from falling to the ground, while the roof keeps the food from being covered in snow. These feeders can be mounted on a windowsill, a tree, a stump, or a pole. The size of the feeder is not strictly defined and can vary widely. If you do not want large birds (like starlings or pigeons), which can find food themselves in winter, to enter the feeder, the entrance should be small enough to prevent them from getting in. For small songbirds, such as the blackbird (the largest visitor to the feeder), the entrance should not exceed 6–7 cm.

When is the best time to feed?

Fill the feeder early in the morning – at sunrise, when birds start actively looking for food after long, cold nights.

If you start feeding in winter – you should continue until spring!

What to feed?

Birds need a lot of energy in winter, so high-fat food is most suitable during this period. Remember: bird food must not be salted, as salt is harmful to their digestive system!

- ***Fats, lard*** *– good food for tits, great spotted woodpeckers, nuthatches, and thrushes.*
- ***Black sunflower seeds***
- ***Peanuts*** *– loved by tits, greenfinches, tree sparrows, nuthatches, and great spotted woodpeckers. Nuthatches and blue tits can store peanuts in hiding places.*
- ***Other seeds and grains*** *– hemp seeds, flax seeds, barley groats, buckwheat, millet, boiled peas and beans, etc.*
- ***Dried fruits****, e.g., raisins – favored by blackbirds and fieldfare.*
- ***Apples, pears, and other fruits*** *– enjoyed by thrushes, waxwings, and tits.*

Health and Hygiene!

When a large number of birds gather in one place, the risk of disease increases. Therefore, the feeder should be cleaned regularly to prevent the accumulation of leftover food or bird droppings.

(Source taken from: (https://www.lob.lv/noderigi/putnu-barosana-ziema/))