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BIOsustainED
Teacher Capacity Building in Biodiversity

DABAS IZPĒTES UN VIDES IZGLĪTĪBAS CENTRS

MIŠKO BRIEDŽIO MOKYKLA

BioSustainED: Teacher Capacity Building in Biodiversity
Project No 2023-2-LV01-KA210-SCH-000

TRAINING MATERIAL (PART II)

Training programme for teachers in-service "Holistic approach for biodiversity teaching in general secondary education in Latvia or gymnasium in Lithuania (grades 10-12)"

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Erasmus+ Small-scale Partnerships project "BioSustainED: Teacher Capacity Building in Biodiversity"
Project No 2023-2-LV01-KA210-SCH-000170510

Partnership:
Natural Research and Environmental Education Centre (Latvia)
Miško Briedžio mokykla, MB (Lithuania)

Project activity: Development of teacher training programme and training material.

The Content
I. Stromantas story: from a holistic context for understanding life processes to a sustainable windowsill.
II. Applying STEAM for biodiversity teaching at school.
III. Wildlife in school: examples of integration in crosscurricular learning.

You can download the materials developed during project: LV LT

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Teacher Capacity Building in Biodiversity

Stromantas story: from a holistic context for understanding life processes to a sustainable windowsill.

Eridiana Oļehnoviča

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Content

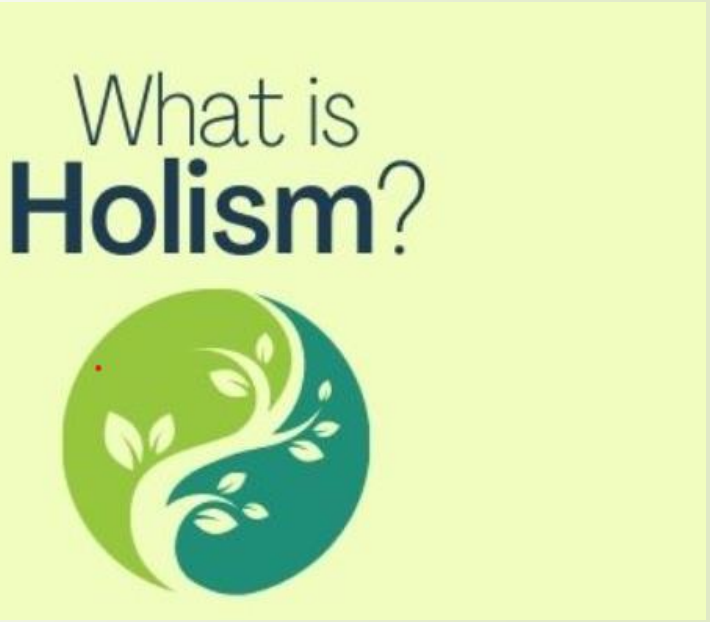
1. A holistic approach to science education, the concept of phygital learning.
2. The story of Stromanta: the holistic context of life processes. Formulation of research questions.
3. Interdisciplinary modelling of understanding life processes, ICT tools for their visualisation.
4. Learning environments for active involvement of students in the learning process. Principles of biophilic design. Sustainable windowsill.

A BRIEF OVERVIEW OF PERSONAL EXPERIENCE

- I graduated from the Faculty of Biology and Chemistry of Daugavpils Pedagogical Institute with a qualification of secondary school biology teacher
- I work as a science teacher in Daugavpils School of Design and Art "Saules School"
- I teach natural sciences at Daugavpils University to future preschool and primary education teachers

A HOLISTIC APPROACH TO SCIENCE EDUCATION

- What is holism?
- **Holism** (from Greek: ὅλος (holos) - 'whole, whole, whole') is the idea that different natural systems (physical, biological, chemical, social, economic, mental, linguistic, etc.) and the properties of these systems should be understood as a whole rather than as parts of a whole.Kas ir holisms?



A holistic approach to preserving our health – and our planet's
https://www.embl.org/news/events/one-health-science-society/

What does holistic learning mean? http://goscience.com

Holistic teachings can have different meanings:

- interdisciplinary,
- cross-curricular,
- learning with all the senses, etc.

https://naitreetgrandir.com/en/feature/everybody-outside/at-one-with-nature/

https://mfgtalkradio.com/why-stem-is-important/

Montessori, Pestalozzi, Steiner ...

https://www.lci.fr/sante/video-votre-enfant-ne-joue-pas-assez-dehors-reconciliez-le-avec-la-nature-stress-depression-obesite-famille-2092342.html
https://cursus.edu/articles/25770/a-la-decouverte-de-la-nature-avec-les-enfants

Characteristics of a holistic learning approach (by N.Orion)

- Integrating the outdoor environment as an integral part of learning
- Learning in authentic and relevant contexts as far as possible
- Organising learning in a sequence that gradually moves from the concrete to the abstract
- Addressing both the cognitive and emotional aspects of learning

- *How can this be more successfully implemented in your subject/area in the context of the competence approach?*

The concept of phygital learning

(adapted by Vate-U-Lan et al.,2016)

- Competence (learning by doing, authentic problem solving)
- Consistency (physical + digital)
- Communications (two-way)
- Content (interactive videos, games, apps)
- Context (learning materials, tools)
- Engagement (awards, badges, points, grades)
- Connectivity (augmented reality, BYOD, iBeacon)

Margeviča-Grinberga,I., Šūmane, I.(2020) Mūsdienīga mācību vide skolēnu aktīvai iesaistīšanai mācību procesā. Rīga: LU Akadēmiskais apgāds

https://www.alleducationschools.com/resources/steam-education/

2. The Stromantha story: the holistic context of a life process

Formulating the research questions

How to grow Stromanthe sanguinea Stromanthe triostar care for indoor
https://www.youtube.com/watch?v=TD7Dy6jYkww

Tips for propagating Stromanthe sanguinea (0,48 min.)
https://youtube.com/shorts/gGlqwD4cThk?si=dmUoqCkZJRIt3bfG

Research questions (1)

Biology
'Leaves in the microworld'
Activity: Students use microscopes to study the epidermal cells of stromal leaves and their structure.
Interactivity: Each group microscopes and draws what they see, then compares their results with other groups' drawings and discusses how the different structures help the plant to adapt to its environment.

Chemistry
'Pigment lab'
Task: to isolate pigments from stromantha leaves using simple chemical methods (e.g. alcohol and filter paper).
Interactivity: In groups, students compare the pigments (chlorophyll, carotenoids, anthocyanins) in the leaves of the stromantha and discuss how they help the plant to survive.

Geography
'Stromantha's journey around the world'
Activity: Students work in groups to map the natural habitat and migration routes of the stromantha when it began to be cultivated outside the tropics.
Interactivity: Create a story about the stromantha as a 'world traveller', discussing the role of the tropical forest ecosystem and climate in its spread.

Research questions (2)

Art
'Artistic portrait of a Stromanta'
Task: to create a work of art using a Stromanta leaf to inspire patterns and colours.
Interactivity: students can experiment with different techniques (drawing, collage, watercolour), then create a class exhibition and discuss how nature inspires the artists' work.

Social studies
'Tropical Forest Survival Plan'
Activity: students create a short presentation on how humans can sustainably use tropical forest resources while preserving plants such as the stromanta.
Interactivity: each student plays a 'role' (e.g. biology researcher, entrepreneur, ecosystem defender) and participates in a simulated class discussion to agree on a plan to protect tropical forests.

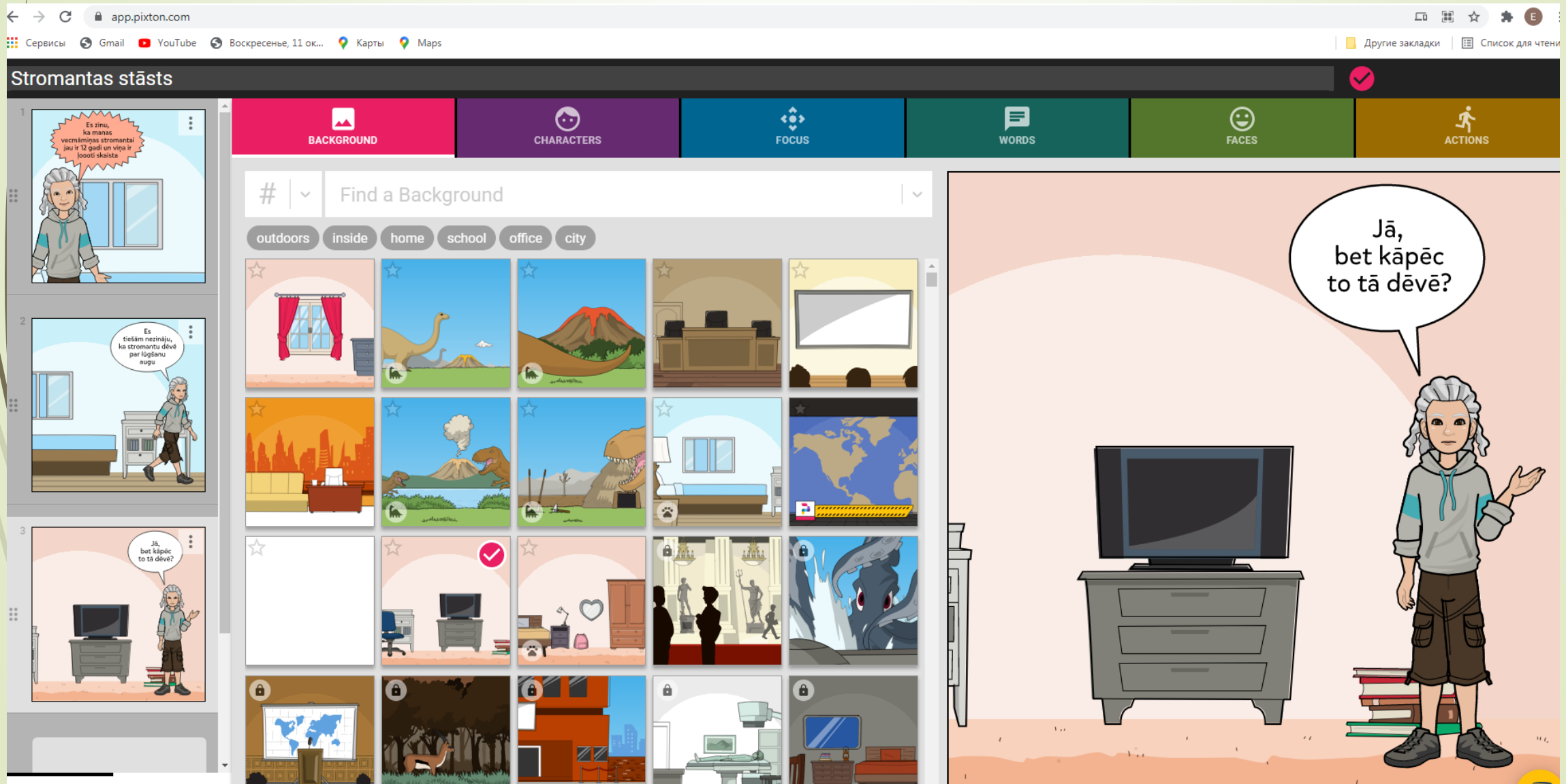
Mathematics
'Symmetry Calculator'
Task: students measure the length, width and symmetrical patterns of stromantha leaves, then calculate the degree of symmetry (e.g. using proportions).
Interactivity: groups compete to find the leaf with the most accurate symmetry and create a graph to analyse the results.

3. Interdisciplinary modelling for understanding of life processes, ICT tools for visualisation

https://app.pixton.com/

! Register as a "Student" to use the free version

Students telling a stromanta story as a comic in a group https://app.pixton.com/



AI comics, ChatGPT said (1):
"The Adventures of Stromante"

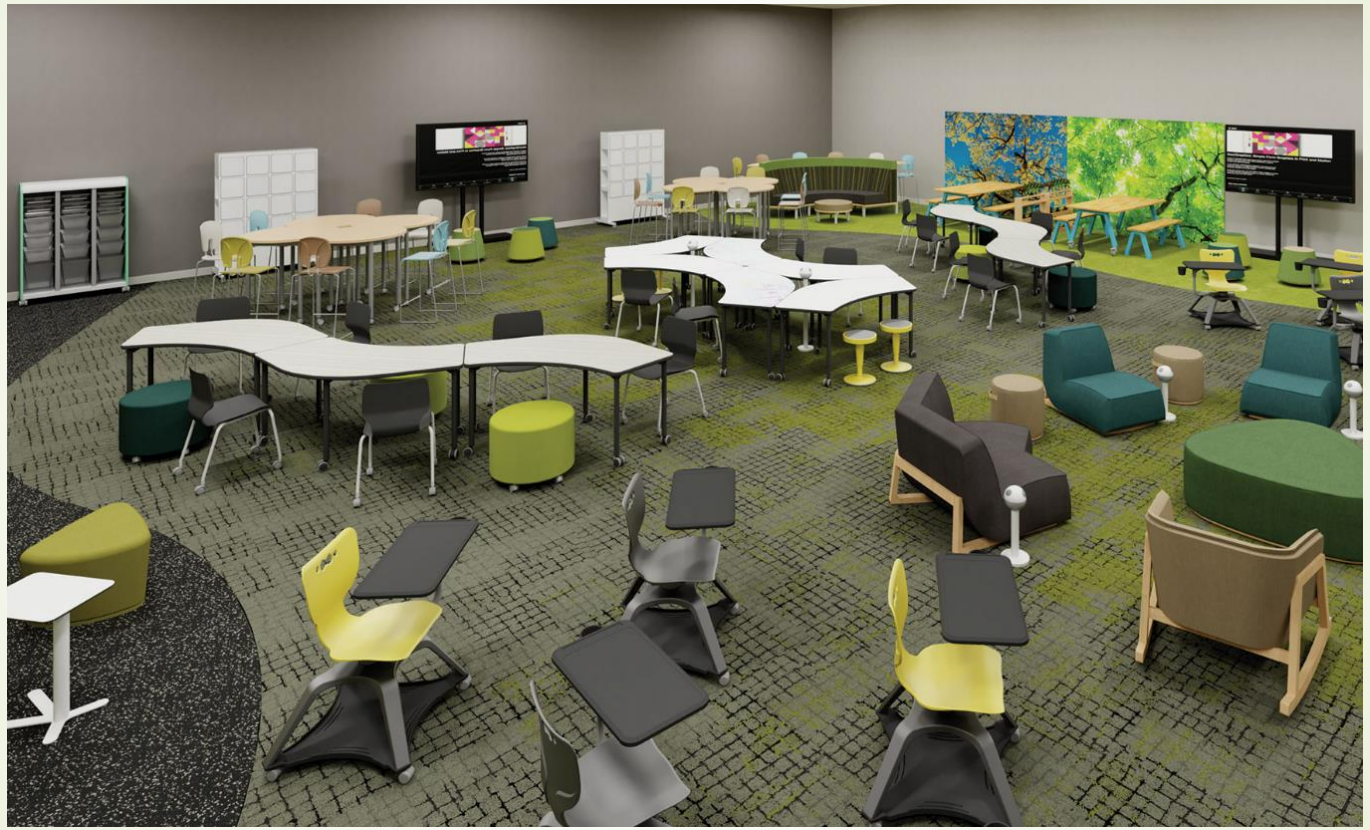
Scene 1:
Tropical jungle setting.
Stromante is sitting on the ground with a friendly expression.
Text: "I'm Stromante, tropical jungle inhabitant"
"My greatest gift to the world?
I'm a real artist with my gorgeous leaves!«

Scene 2:
Stromante lifts her leaves to show the bright pattern.
"Did you know that my leaves change pose throughout the day? "
Text: (background showing the flow of time - morning, day, night)
Morning: Leaves are bent down.
Day: Leaves are spread out.
Night: Leaves are rising up.
"I dance to the rhythm of the sun - isn't it cool? "

Scene 3:
Stromantha is worried because the humidity is low.
The leaves start to dry.
"Oh no!
Dry air... my biggest problem!"
Text: "Thank you! Now I can breathe again!"

Comics created by artificial intelligence, ChatGPT said (2):

4. Learning environment for active involvement of students in the learning process. Biophilic design principles, sustainable windowsill.



- Biophilia in classroom design
- How Biophilic Learning Environments Boost Student Achievement (2019)
- https://www.demcointeriors.com/blog/biophilic-learning-environments/#

https://nacarchitecture.com/NACLab/biophilia.aspx

Biophilic design in the environment

https://robinpowered.com/blog/10-coolest-biophilic-design-offices

https://www.siemens-stiftung.org/en/projects/national-stem-forum-germany/

A sustainable windowsill created by the hands of preservice teachers,2020 (1)

A sustainable windowsill created by the hands of preservice teachers, 2020(2)

A sustainable windowsill created by the hands of preservice teachers, 2024(3)

Sustainable window sill handmade by students of the School of Arts, 2023(1)

Sustainable window sill handmade by students of the School of Arts, 2023(2)

Sustainable window sill handmade by students of the School of Arts, 2023(3)

Sustainable window sill made by kindergarten pupils

Materials from Daugavpils Innovation Centre activity "Succulent superbingo", author's work by E. Oļehnoviča, 2023

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Thank you for your cooperation!

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tel. +371 29130310

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BIOsustainED
Teacher Capacity Building in Biodiversity

Applying STEAM for biodiversity teaching at school.

Vesta Vančugovienė

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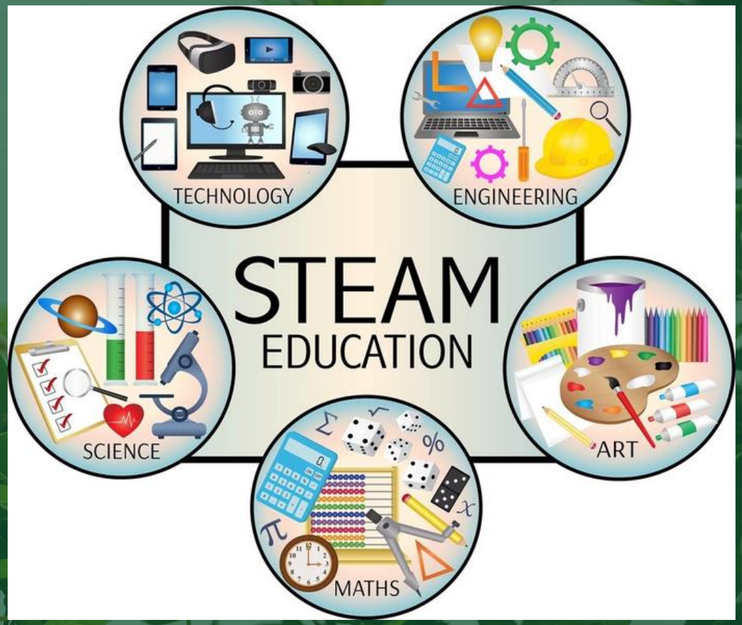
Įvadas į STEAM ir biologinę įvairovę/Introduction to STEAM and biodiversity

STEAM kaip tarpdisciplininis požiūris:

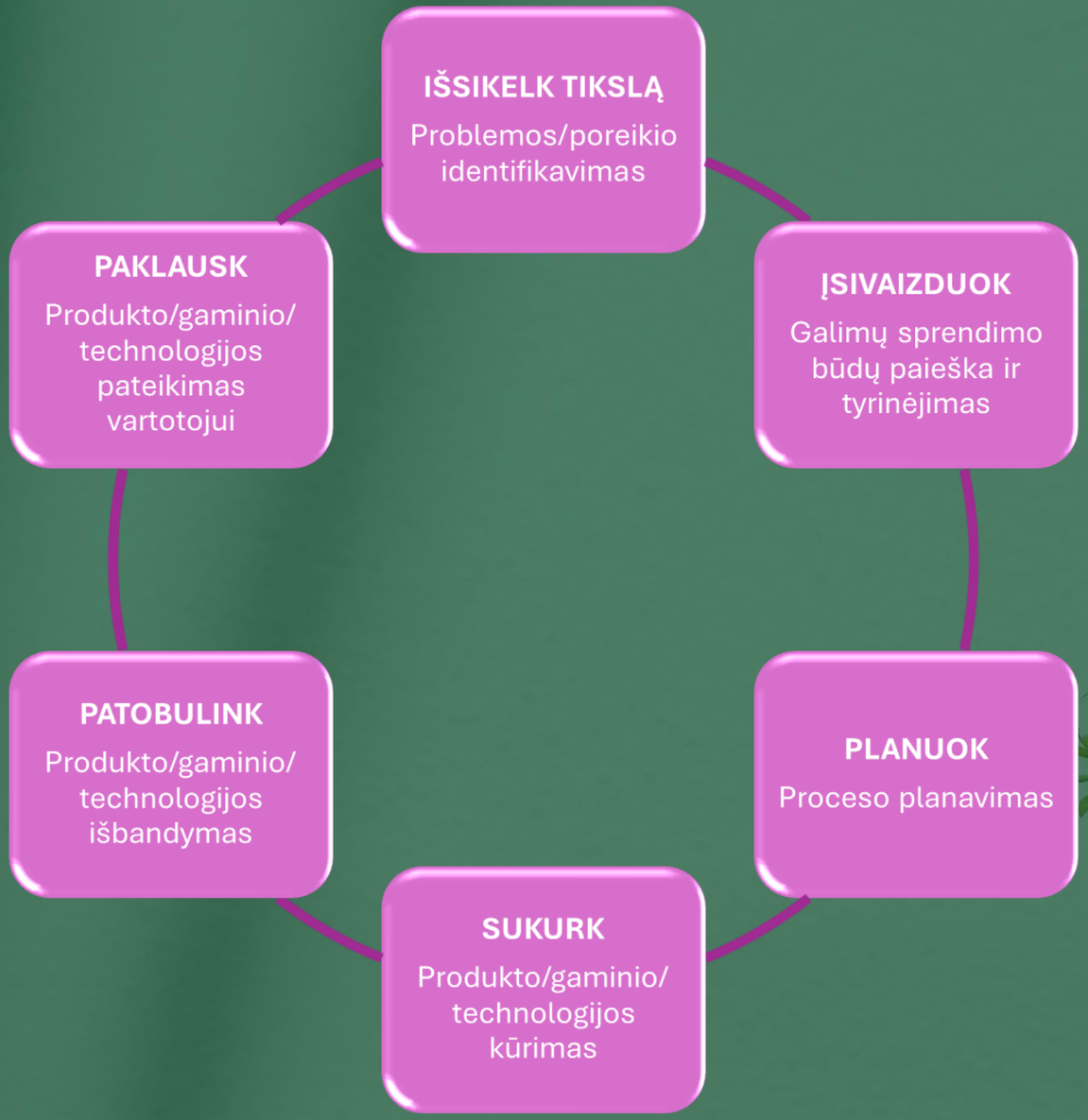
- STEAM jungia skirtingas sritis (gamtos mokslus, technologijas, inžineriją, meną ir matematiką);
- leidžia spręsti realias problemas, tokias kaip biologinės įvairovės nykimas.

STEAM as an interdisciplinary approach:

- STEAM brings together different fields (science, technology, engineering, arts and mathematics);
- Allow to solve real-world problems such as biodiversity loss.



Įvadas į STEAM ir biologinę įvairovę/Introduction to STEAM and biodiversity



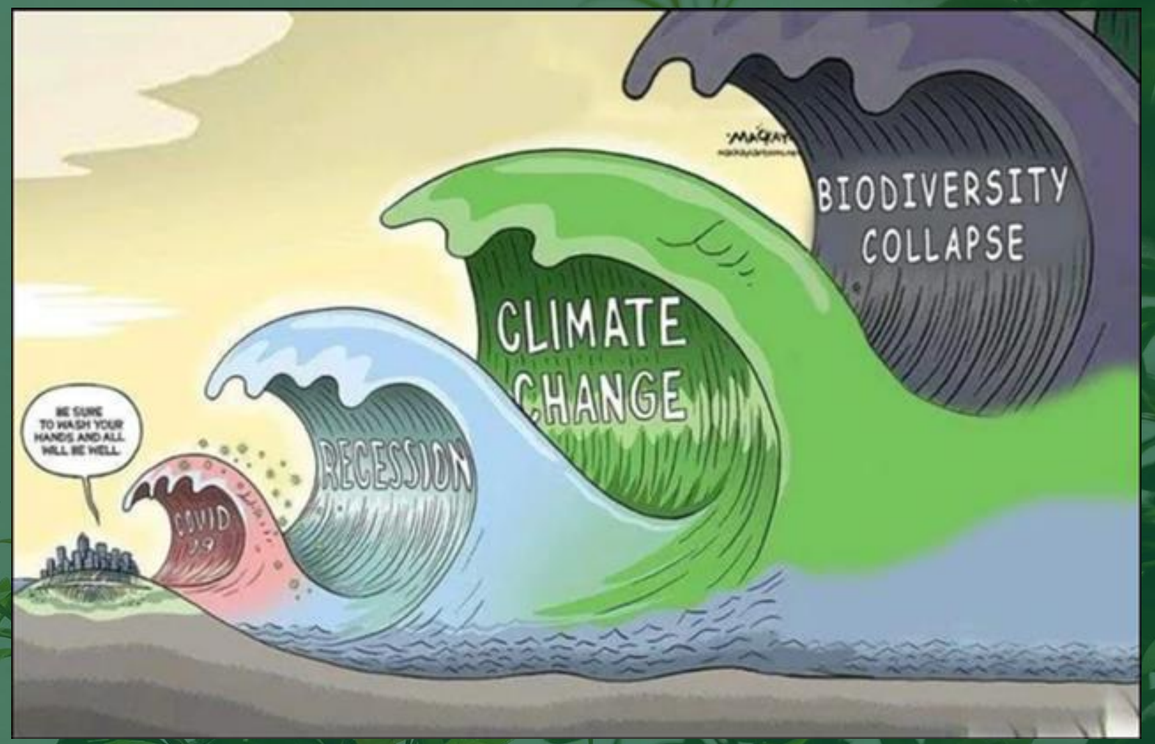
Įvadas į STEAM ir biologinę įvairovę/Introduction to STEAM and biodiversity

Biologinė įvairovė yra kritiškai svarbi šiandienos pasaulyje – su tokiomis problemomis kaip:

- klimato kaita;
- miškų kirtimas;
- tarša;
- rūšių nykimas (Kahn Jr ir kt., 2009).

Biodiversity is critical in today's world – with problems such as:

- Climate change;
- deforestation;
- pollution;
- species loss (Kahn Jr et al., 2009).



Įvadas į STEAM ir biologinę įvairovę/Introduction to STEAM and biodiversity

STEAM nauda mokant apie biologinę įvairovę:

- STEAM integravimas gali padėti mokiniams geriau suprasti biologinę įvairovę per praktinius pavyzdžius ir paskatinti juos kurti kūrybiškus sprendimus.

The benefits of STEAM for biodiversity education:

- Integrating STEAM can help students better understand biodiversity through practical examples and encourage them to develop creative solutions.

Kaip STEAM padeda mokyti biologinės įvairovės?/How does STEAM help teach biodiversity?

Gamtos mokslai:

- Mokslinio tyrimo metodas gali būti naudojamas ekosistemų, rūšių tarpusavio sąveikos ir gamtos apsaugos tyrimams.
- Pavyzdžiai gali apimti lauko tyrimus, eksperimentus ar vietinės aplinkos stebėjimą.

Natural sciences:

- The scientific method of inquiry can be used to study ecosystems, species interactions and nature conservation.
- Examples may include field studies, experiments or observation of the local environment.

Kaip STEAM padeda mokyti biologinės įvairovės?/How does STEAM help teach biodiversity?

Technologijos:

- Įrankiai, tokie kaip geografinių informacijų sistemos (GIS), papildytoji realybė, dronai ar piliečių mokslo programėlės gali būti naudojamos biologinei įvairovei stebėti, rūšims sekti ar dalyvauti gamtos apsaugos iniciatyvose.

Technology:

- Tools such as geographic information systems (GIS), augmented reality, drones or citizen science apps can be used to monitor biodiversity, track species or take part in conservation initiatives.

Kaip STEAM padeda mokyti biologinės įvairovės?/How does STEAM help teach biodiversity?

Inžinerija:

- Inžinerijos principai gali būti taikomi kuriant sprendimus aplinkos problemoms, pavyzdžiui, kuriant tvarias gyvenamąsias vietas, ekologiškas technologijas ar atsinaujinančių energijos šaltinių sistemas.

Engineering:

- Engineering principles can be applied to develop solutions to environmental problems, such as sustainable housing, green technologies or renewable energy systems.

Kaip STEAM padeda mokyti biologinės įvairovės?/How does STEAM help teach biodiversity?

Menai:

- Menų svarba skatinant žmonių susidomėjimą biologine įvairove per vizualinius menus, muziką ar pasakojimus.
- Mokiniai gali kurti meno projektus, kurie atspindi aplinkosaugos temas, rašyti esė ar net kurti vaizdo įrašus apie biologinės įvairovės svarbą.

Arts:

- The importance of the arts in stimulating people's interest in biodiversity through visual arts, music or storytelling.
- Students can create art projects that reflect environmental themes, write essays or even make videos about the importance of biodiversity.

Kaip STEAM padeda mokyti biologinės įvairovės?/How does STEAM help teach biodiversity?

Matematika:

- Matematika gali būti naudojama analizuojant biologinės įvairovės duomenis, pavyzdžiui, skaičiuojant rūšių populiacijų pokyčius, apskaičiuojant biologinės įvairovės indeksus arba interpretuojant ekologinius duomenis.

Mathematics:

- Mathematics can be used to analyse biodiversity data, for example to calculate changes in species populations, calculate biodiversity indices or interpret ecological data.

STEAM veiklų pavyzdžiai biologinei įvairovei/Examples of STEAM activities for biodiversity

Ekologija veiksme:

- Mokiniai gali kurti ir atlikti eksperimentus ar lauko tyrimus, tokius kaip taršos poveikio vietinėms rūšims tyrimai arba ekosistemos sveikatos stebėjimas.

Ecology in action:

- Students can design and carry out experiments or field studies, such as investigating the effects of pollution on native species or monitoring ecosystem health.

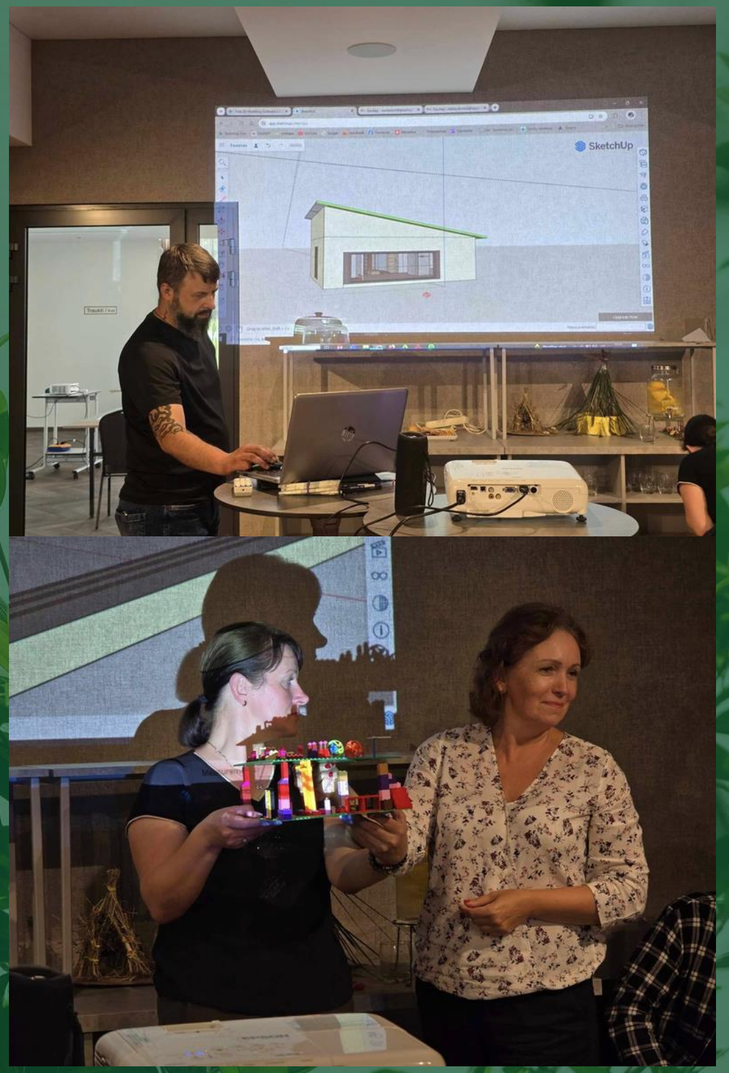
STEAM veiklų pavyzdžiai biologinei įvairoveiExamples of STEAM activities for biodiversity

Gyvenamųjų vietų modelių kūrimas:

- Mokiniai gali dirbti komandomis, projektuodami tvarias gyvenamąsias vietas, kurios remiasi biologine įvairove, naudojant inžinerijos ir biologijos principus.

Creating models of habitable places:

- Students can work in teams to design sustainable habitats that build on biodiversity using engineering and biological principles.



STEAM veiklų pavyzdžiai biologinei įvairovei/Examples of STEAM activities for biodiversity

Menas ir gamtos apsauga:

- Mokiniai gali kurti informavimo kampanijas per meną, pavyzdžiui, piešti viešąsias freskas, atspindinčias nykstančias rūšis, arba kurti interaktyvias skaitmenines prezentacijas apie biologinės įvairovės svarbą.

Art and nature conservation:

- Students can create awareness campaigns through art, for example by painting public murals reflecting endangered species or creating interactive digital presentations on the importance of biodiversity.

STEAM veiklų pavyzdžiai biologinei įvairoveiExamples of STEAM activities for biodiversity

Technologijos ir piliečių mokslas:

- Skatinkite mokinius dalyvauti biologinės įvairovės stebėjimo programose, tokiose kaip iNaturalist, kurios sujungia technologijas ir biologiją duomenų rinkimui bei rūšių identifikavimui.

Technology and citizen science:

- Encourage students to participate in biodiversity monitoring programmes such as iNaturalist, which combine technology and biology to collect data and identify species.

STEAM privalumai mokant apie biologinę įvairovę/The benefits of STEAM for biodiversity education

Kritinis mąstymas ir problemų sprendimas:

- STEAM švietimas skatina mokinius spręsti problemas iš įvairių perspektyvų, padedant jiems kurti sprendimus sudėtingoms biologinės įvairovės problemoms.

Critical thinking and problem solving:

- STEAM education encourages students to problem-solve from multiple perspectives, helping them to develop solutions to complex biodiversity problems.

STEAM privalumai mokant apie biologinę įvairovę/The benefits of STEAM for biodiversity education

Įsitraukimas ir motyvacija:

- Naudojant praktines veiklas ir technologijas, galima padidinti mokinių įsitraukimą, padarant biologinės įvairovės mokymąsi dinamiškesnį ir interaktyvesnį.

Engagement and motivation:

- The use of hands-on activities and technology can increase student engagement, making biodiversity learning more dynamic and interactive.

STEAM privalumai mokant apie biologinę įvairovę/The benefits of STEAM for biodiversity education

Integruotas dalykų mokymas:

- STEAM projektai skatina bendradarbiavimą tarp skirtingų dalykų mokytojų, padedant mokiniams suprasti pasaulio tarpusavio sąsajas – nuo aplinkosaugos iki meno ir matematikos.

Integrated teaching of subjects:

- STEAM projects encourage collaboration between teachers of different subjects, helping students understand the interconnectedness of the world – from the environment to art and maths.

STEAM privalumai mokant apie biologinę įvairovę/The benefits of STEAM for biodiversity education

Realaus pasaulio situacijos:

- Naudodami STEAM, mokiniai gauna praktinės patirties su įrankiais ir metodais, kuriuos profesionalai naudoja biologinės įvairovės apsaugai, taip ruošdamiesi būsimoms karjeroms STEM srityse.

Real world situations:

- Through STEAM, students get hands-on experience with the tools and techniques that professionals use to protect biodiversity, preparing them for future careers in STEM fields.

Praktiniai patarimai/Practical tips

Bendradarbiavimo projektai:

- Skatinkite tarpdisciplininius projektus, kurie sujungia gamtos mokslų, matematikos, meno ir technologijų mokytojus.
- Pavyzdžiui, biologijos ir meno mokytojai gali sukurti bendrą projektą, kuriame mokiniai studijuoja vietines rūšis ir tada iliustruoja savo atradimus.

Cooperation projects:

- Encourage interdisciplinary projects that bring together science, maths, art and technology teachers.
- For example, biology and art teachers can create a collaborative project in which students study local species and then illustrate their findings.

Praktiniai patarimai/Practical tips

Vietinių išteklių naudojimas:

- Naudokite vietines ekosistemas lauko ekskursijoms ir realaus gyvenimo tyrimams.
- Tai gali būti vietinės gamtos apsaugos teritorijos, pelkės ar miesto sodai ar mokyklos kiemas.

Using local resources:

- Use local ecosystems for field trips and real-life research.
- This could be local nature conservation areas, wetlands or urban gardens or schoolyards.

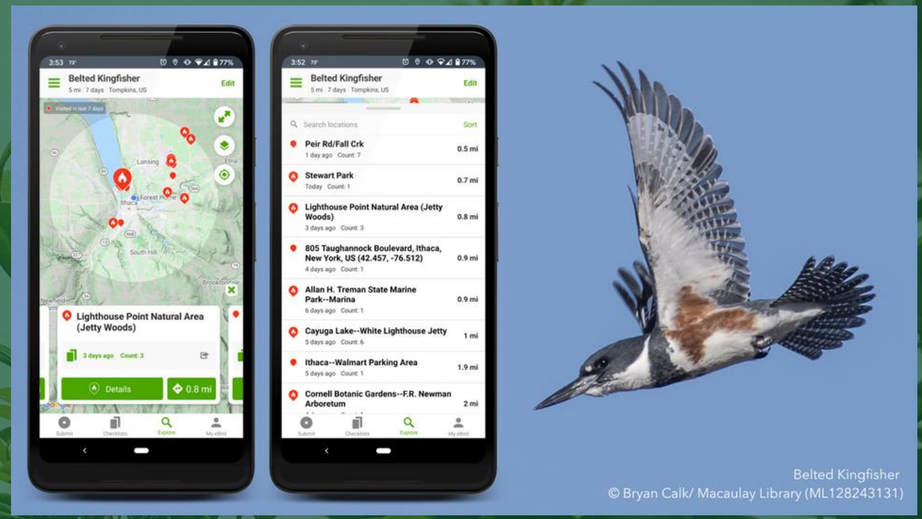
Praktiniai patarimai/Practical tips

Skaitmeniniai įrankiai:

- Supažindinkite mokinius su programėlėmis ir svetainėmis, leidžiančiomis rinkti duomenis (pvz., iNaturalist, eBird) ir prisidėti prie pasaulinių biologinės įvairovės duomenų bazių.

Digital tools:

- Introduce students to apps and websites that allow them to collect data (e.g. iNaturalist, eBird) and contribute to global biodiversity databases.



Belted Kingfisher
© Bryan Calk/ Macaulay Library (ML128243131)

Praktiniai patarimai/Practical tips

Tvarumas:

- Skatinkite tvarumo iniciatyvas mokykloje, pvz., kurti mokyklos sodus, projektuoti ekologiškus produktus arba dirbti su atliekų mažinimo strategijomis, kurios sustiprina biologinės įvairovės apsaugą.

Sustainability:

- Encourage sustainability initiatives at school, such as creating school gardens, designing eco-friendly products or working on waste reduction strategies that reinforce biodiversity protection.

Pabaigai/To conclude

Skatinkite mokinius tapti aplinkosaugos ambasadoriais:

- Pabrėžkite, kad integruojant STEAM į biologinės įvairovės mokymą, ne tik praturtinamas mokymosi procesas, bet ir suteikiama galimybė mokiniams tapti aktyviais dalyviais, ginančiais ir saugančiais biologinę įvairovę.

Encourage students to become environmental ambassadors:

- Emphasise that integrating STEAM into biodiversity education not only enriches the learning process, but also gives students the opportunity to become active participants in the protection and conservation of biodiversity.

Pabaigai/To conclude

Bendradarbiaukite ir kurkite naujas idėjas:

- Skatinkite kolegas bendradarbiauti savo mokyklose, siekiant sukurti prasmingas mokymosi patirtis, taikant STEAM, kurios padeda mokiniams kūrybiškai ir aktyviai domėtis biologine įvairove.

Collaborate and develop new ideas:

- Encourage colleagues to collaborate in their schools to create meaningful learning experiences through STEAM that help students engage creatively and actively with biodiversity.

Ačiū už dėmesį!

Paldies par uzmanību!

Vesta Vančugovienė

STEAM VDU
DIDAKTIKOS CENTRAS

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BIOsustainED
Teacher Capacity Building in Biodiversity

Wildlife in school: examples of integration in crosscurricular learning.

Andrejus Gaidamavičius

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Example 1. Wildlife and acting (cinema)

TASK

Collect branches of various trees and shrubs. Write their Latin names. Note that they sound like spells.

Taking a branch, point it at another student and pronounce the Latin name as if it were a spell. If the spell is pronounced expressively and loudly, the other student turns into a tree (plays a tree).

Pay attention to how the trees whose branches you brought branch out and the person affected by the spell must also show the branches with their hands in a similar way. Oak branches are horizontal, aspen branches are straight and rise upwards, birch branches are similar to aspen branches, only the tips (palms) are bent downwards, spruce branches are all bent downwards, pine branches are curved downwards, linden branches are curved upwards, etc.

Talk about trees and shrubs from an ethnographic perspective. What powers did ancient Lithuanians attribute to them? Compare with the wands of various tree species used in the Harry Potter films.

Try out “magic wands” in nature: a student stands in front of a tree, another student points to it with a branch and says its Latin name. If they manage to play a real wizard, the student turns into a tree (hides behind its trunk). If the spell is pronounced with errors, timidly, without acting - nothing happens.

WHAT IS LEARNED?

Learn to recognize trees and bushes in winter (from the twigs and branches).

Interest in Latin arises, which is very important in life sciences, medicine.

Learn to pronounce words boldly, expressively and correctly, using body language, which is very important in acting (cinema, performance).

Example 2. Wildlife and music, language

TASK

Make a bird clock in the form of a presentation. You can also use mine, which is available at: https://we.tl/t-yFd8UTgb2Y

Write the names of birds and their chirps on pieces of paper according to the hours indicated in the presentation. If you use my presentation, these pieces will be attached to it. Distribute the pieces of paper to the students in random order.

First, show the students the presentation and let them listen to how a certain bird species actually chirps. Try to write down that chirp in letters.

Play the presentation again. The student waits for his bird, written on the piece of paper, to appear and begins to chirp in his voice until the specified hour (the presentation also shows a clock).

The chirps should be clear and with the same melody as a real bird.

At certain hours, several students will chirp at the same time. Then their chirps will sound like a chorus.

Try to imitate birds in nature: listen to birds, try to write their sounds in letters and read what you have written in the same intonation as the bird's song. Use the Merlin or Birdnet apps to identify the bird.

WHAT IS LEARNED?

Imitation of bird voices helps develop musical hearing, because you need to chirp with the same intonation and melody as a real bird.

When chirping in chorus, but with different songs, it is similar to human „sutartine“. You learn to listen only to yourself while chirping.

When imitating animal voices, you have to leave your comfort zone, which is useful when trying to overcome communication complexes.

The names of some birds are very similar to their songs. A word that imitates real sounds is called onomatopoeia. Thus, this lesson will contribute not only to music, but also to native language lessons, learning various language constructions that have an expressive purpose.

Example 3. Wildlife and art, interpretation

TASK

We will make animal footprints from plaster. Purchase quick-setting plaster. You will also need a box to store the plaster, a water bottle, a spoon, and a container to mix the plaster with water.

Look for animal footprints on a forest or field path. These can also be domestic animals. Place a mold - a ring made of cardboard or plastic - on the footprint.

Mix the plaster to the consistency of yogurt and carefully pour it into the mold. Wait until it is difficult to scratch the plaster with a fingernail (usually this takes 5-10 minutes).

Wash the resulting animal footprint with water to remove dirt and sand. Write the date, location, and name of the animal (if you know) on the back of the footprint with a marker.

Once you have a collection of different animal footprints, you can make copies of them in class: take a container with sand, press a plaster footprint into it, add plaster, and you will have a second identical print. You can color the footprints in different colors using water-based paints.

Be careful with plaster, as it is difficult to wash off clothes. Also, do not wash the footprints in the sink, as this will clog the plumbing. More: https://youtu.be/DyXmF9IKZJ0?feature=shared

WHAT IS LEARNED?

Students will become not only nature detectives, but also sculptors. They will learn to work with plaster, which is often used in art.

By coloring the footprints, they will turn them into works of art that can be displayed at a school exhibition.

Students' observation and imagination are also developed. From the footprints, as from letters and words, a story can be made about what animals do.

Example 4. Changing the school to another location.

TASK

We all know that garbage are very harmful to wildlife. But is it really? Maybe it's not the garbage that is to blame, but the person who throws it? Let's try to resolve this dispute the way adults do – in a real court.

Call your city's courthouse and ask for permission to use the courtroom for educational purposes.

Divide the roles: judges, lawyers, prosecutors, witnesses and a court clerk. In the bench will be garbage (this could be an empty bottle, can, other packaging).

Do your homework: prepare the arguments you will have to defend in court. Rehearse the trial in a school classroom.

On the day of the trial, ask a real court clerk to participate in the education to comment on the trial. Invite local media representatives to cover the event. At the end of the education, ask the real judge what challenges he faces in doing this job.

You can also choose any other environmental topic for education. You can also choose any other institution operating in your city and play representatives of different professions.

WHAT IS LEARNED?

In this particular case, you get to know the law and how it is defended. You get to know the work of the court, which is useful, because many adults encounter courts in their lives. You learn that there is no need to be afraid of the court. More: https://youtu.be/K5p8WPenl-8?feature=shared

Such role-playing games help you get to know various professions better and will help you decide when choosing subjects at school that you want to study more intensively.

Example 5. Changing the environment in the classroom.

TASK

Imagine that you are in the forest, by a campfire and at night. Create a similar environment: cover the windows, pull the tables, light candles in the middle of the classroom (this will be your campfire), and sit comfortably around it.

Talk about nocturnal animals. These can be owls, bats, or wolves. Wolves are especially suitable for getting students interested in wildlife, because they are animals that inspire both admiration and fear.

Not only the teacher can prepare a story about nocturnal animals, but also a student or group of them who are more interested in nature.

At the end of the lesson, imitate the sounds of nocturnal animals. For example, howling as a wolf.

You can use minimal means to transform your classroom into any other environment in nature (swamp, lake, meadow, ocean, mountains, etc.). You can also use a multimedia projector for this. You can also invite a naturalist living in your city to the lesson.

WHAT IS LEARNED?

Children are naturally interested in nature, but these days, their attention is taken away by smart devices and social media. By changing the learning environment, making it cozy, and starting lessons about nature with intriguing topics, we can bring back children's natural interest in the real world and real nature.

Example of a night lecture about wolves:
https://youtu.be/3d6iBd66soc?feature=shared

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