



Bioethical Education and Attitude Guidance for Living Environment

EDUCATIONAL MATERIALS



Erasmus+

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Cover photo: Pixabay

Acknowledgements

We would like to thank all students, teachers, educators, researchers, and all others that have participated in the project and that have, with their ideas, feedback, and encouragement contributed to the development of this document.

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This project has been funded with support from the European Commission, Erasmus+ programme and Croatian national agency for Erasmus+ *Agencija za mobilnost i programe Europske unije*. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



Co-funded by the
Erasmus+ Programme
of the European Union



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beagle
Bioethical Education
and Attitude Guidance
for Living Environment

1. HOW TO USE EDUCATIONAL MATERIALS

In your hands you're holding the result of the second intellectual output of the project BEAGLE – Bioethical Education and Attitude Guidance for Living Environment. Project gathers partners from Croatia, Slovenia, Italy, and Greece, under the umbrella of Erasmus+ platform, with a common goal of promoting bioethical education, developing critical thinking, and overall changing of attitude towards better understanding of our environment.



In this document, you will find the division of educational materials according to age groups of children and young people, and according to the educational methods used in materials. All materials are described in detail "step by step" and created in a way to promote interactive discussion and critical thinking among young people on bioethical topics.



The materials have an indicated age group of children, duration and number of participants, and are designed as independent educational aids with specific methodological guidelines. **This does not mean that you have to strictly stick to what is written, but you can adapt the materials, activities and offered questions to the needs and possibilities of the group.**

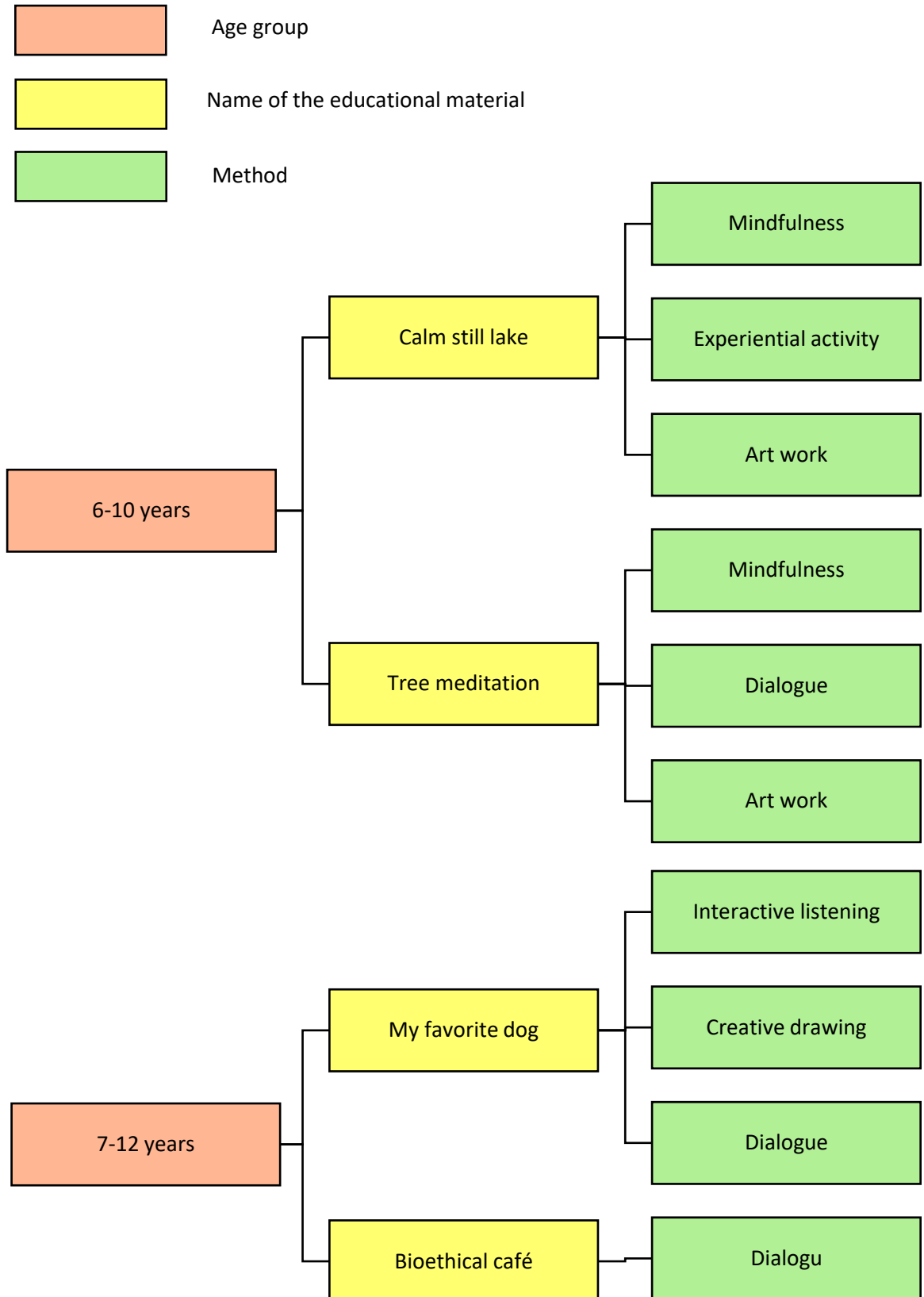


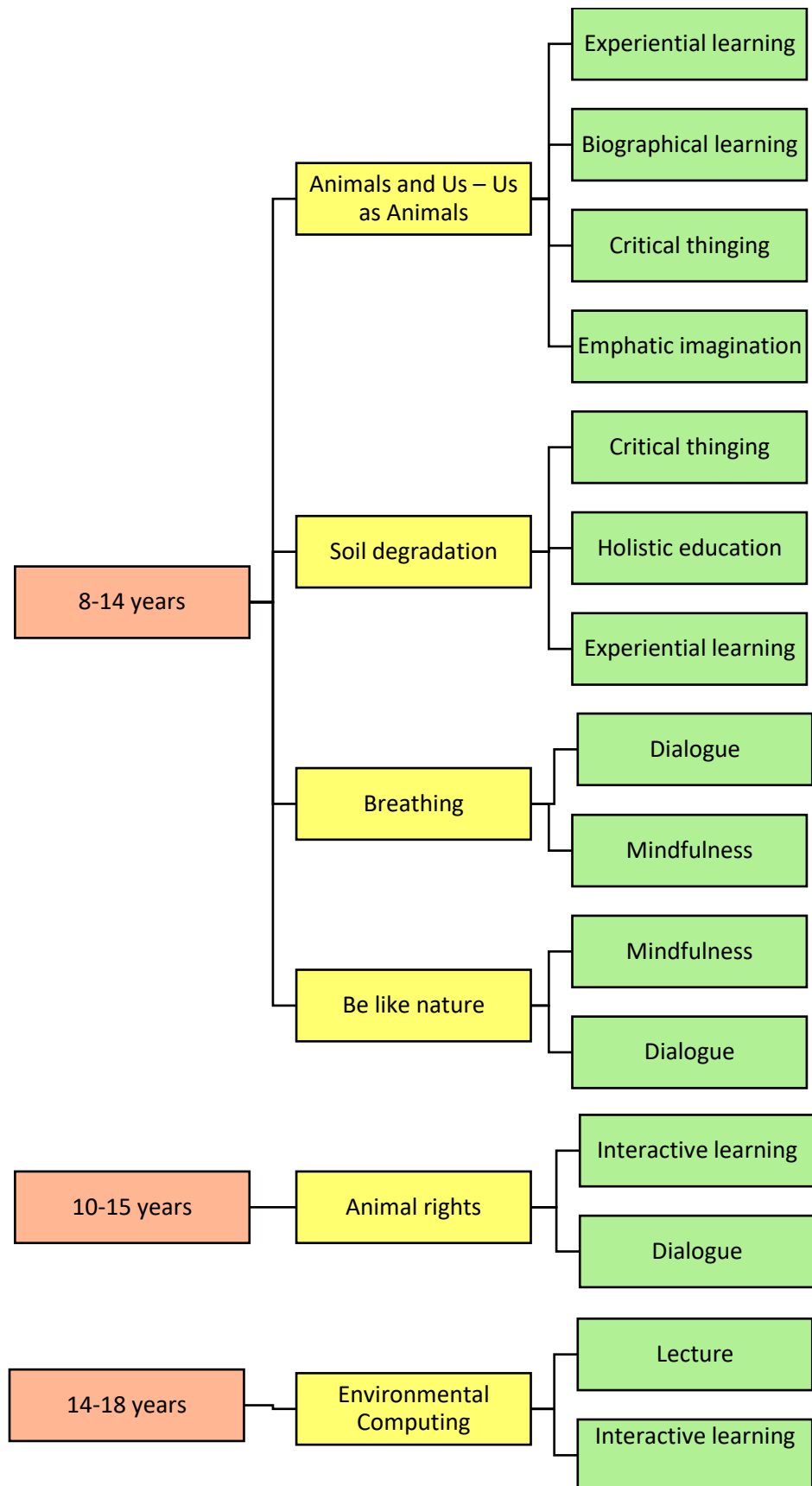
The materials can be used in different educational circumstances and contexts as well as in different national curricula because they deal with issues that have no boundaries, but are universal.



We hope that these educational materials will encourage you to be creative and give you a dimension in working and teaching bioethical topics in a simple, creative and fun way.

2. DIVISION OF EDUCATIONAL MATERIALS







Calm still lake

Environmental issue: Human activities are a major cause of water pollution. Pollution affects any kind of water: rivers, lakes, ponds, oceans, groundwater. Polluted water impacts the environment (soil, animals, plants, human beings) producing consequences on human health, on biodiversity (harm and extinction of plants and animals), interruption of food chain, etc. As human activities are the main source of water pollution, **how shall we find a balance between humans' needs and water pollution prevention and conservation?** Workshop can be held indoor or outdoor.

Age range: 6 to 10 years

Time: 85-140 minutes

Group: 4-20 participants

Materials and tools:

- for the experiential activity: 1 used plastic bottle every two/three children (capacity 1,5 litres or 2 litres), watercolours, tempera colours, sugar, coffee powder, chocolate powder, milk, pebbles, nuts, topsoil, clean water from the tap
- for the art activity: pencils, coloured pencils, crayons, markers (enough for all the students), watercolours, tempera colours, brushes, glue, tape, magazines with pictures, scissors, paper sheets (A1 format, one sheet of paper every two/tree students).


Educational methods: mindfulness + experiential activity + art work

Key learning points: The workshop aims at rising students' consciousness about:

- the major causes of water pollution
- effects of water pollution on the environment
- how to prevent water pollution
- ecological implications of human activities
- how to find a balance between human's needs and the necessity of water conservation
- facilitating clarification of personal goals and values
- the interconnection between all natural elements (human beings, non-human beings, environment itself)
- rise empathy and compassionate attitudes and conducts towards the non-human world
- the workshop is also intended to develop critical thinking in children.

Keywords:

- water (rivers, lakes, oceans, groundwater)
- polluting human activities

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- interconnection, empathy, compassion, kindness,—caring, non-dualistic consciousness

Notes: Be sure that number of participants, time and level of discussion are adapted to the group age.



Workshop step by step - How to do it?

This workshop is composed by 4 parts:

1. a mindfulness practice
2. proposition of an environmental ethical issue and discussion through an experiential activity
3. art activity aimed to reflect upon the issue proposed and aimed to consolidate the new concepts learnt
4. conclusion

NOTES:

- Workshop can be held indoor or outdoor in a green area or park (if held outdoor, the seminar will be more effective because it will develop a deeper sense of unity between children and nature).
- Depending on the time available, the workshop can be held in one session in the same day, or in two sessions split in two different days. In the latter case, the mindfulness practice must be repeated at the beginning of each session.

Part 1 – Mindfulness practice - “Calm still lake”ⁱ

Students are invited, through a mindfulness practice, to prepare their senses, body and mind to get in contact with the natural world.

The natural world can be a great source of beauty and inspiration. The lake meditation will allow students to connect to the natural world, to feel at ease, to still the mind and ground the body and to stimulate attention through guided imagery.

This mindfulness practice can be experienced either indoor or outdoor, in a park/green area if possible.

Activity 1: Depending if they are indoor or outdoor, educator invites students to lay down on the ground or to take a seat on a chair, bench, trunk, so that they'll have the soles of their feet on the ground. Be careful to seat comfortably. Then educator will continue:

“Begin by closing your eyes and letting your body relax. Let go of your toes ... your feet ... your ankles ... your calves ... legs ... relaxing your stomach ... your chest ... both arms ... all the way relaxing down to your fingertips.


Now relax your head and neck... let your whole body feel peaceful and floaty.

Let your body feel safe, and secure, all is okay for right now, everything in the world is peaceful, at safe and at peace.

As you are feeling calm and more calm, breathing in and out, in and out, allow yourself to imagine a still calm lake. This could be a mountain lake, or a lake in the woods, it could be big or small.

Notice if there are stones around your lake or maybe there are trees.

This lake is filled with fresh, still water.



As you are watching the still, quiet lake, you see that the surface of the lake is so calm it is like a mirror, a smooth sheet of glass, completely calm and completely still.

You are like that lake.

Allow the events of the day, the events of the classroom and the noise and busyness to fade from your thoughts as you gaze at this calm, still lake.

Now as you are feeling that calmness in your mind and body, imagine that you drop a pebble into the water and feel the gentle ripples of peace spreading slowly and smoothly from the centre of the water to fill all of you with calmness, with stillness, with peace, flowing throughout your body and mind.

Know you can return to the edge of this lake in your imagination whenever you need to reconnect with that peace and that stillness inside of you.

Now begin to wiggle your toes and fingers and gently return your attention to what is surrounding you. You are relaxed and focused. You can open your eyes when you are ready.”ⁱⁱ


Total time for Activity 1: 10-20 minutes

Tips:

1. Educator: use your intuition to figure out how long to spend on each part. The whole exercise can last between 10 and 20 minutes depending on your students. Do not rush, allow students enough time for their bodies to accommodate, for perceiving their breath and to visualize the images you are evoking.
2. Educator will talk with a very natural, smooth, calm, soothing voice; the tone will be gentle and inviting.
3. Before teaching this, it is good if you have time to practice the exercise yourself.
4. “Since mindfulness is not a religious or spiritual practice, when teaching mindfulness sessions it’s important to avoid using terms or materials or developing rituals that might have spiritual connotations. None of these are relevant to the practice of mindfulness and may present an obstacle to students from certain groups. Because mindfulness is an evidence based attention training and awareness technique that is not intended to explore religious beliefs or attitudes, it neither conflicts nor overlaps with any spiritual practice or religion”ⁱⁱⁱ.

Part 2 – Educator proposes a specific environmental ethical issue – Experiential activity

Before the second part of the workshop begins, educator shall display materials and tools to be used for this experience/activity: used plastic bottles (capacity 1,5 litres or 2 litres), watercolours, tempera colours, sugar, coffee powder, chocolate powder, milk, pebbles, nuts, topsoil, clean water from the tap. Make sure they are placed on a flat



surface and there is enough room for all the students to work with such tools and enough room for them to observe what is happening.

Ask students to fill in the plastic bottle with water from the tap. Be sure they only half fill them in (they will be asked to introduce more liquid later).

Activity 2.1 – Educator will propose an environmental ethical issue related to water, which is finding a **balance between humans’ needs and the necessity of water pollution prevention and conservation**. Educator shall propose students the issue in terms such as:

“Human beings need clean water to survive. Clean water supplies on Earth are decreasing due to its pollution caused by human activities. Some people argue that if we want to live in cities, if we want to work, travel, produce goods and services, have food, schools, hospitals, trains, cars, etc., we must accept some degree of pollution as a consequence of progress. Nevertheless, water pollution brings costs of its own that undermine any economic benefits that come about by polluting. So, **how shall we find a balance between humans’ needs and water pollution prevention and conservation?**”

Total time for Activity 2.1: 5 minutes to introduce the issue by the educator.

Activity 2.2 – Then educator will ask students to name human activities that produce water pollution, e.g.:

- ✓ industries (chemical pollution)
- ✓ urban development
- ✓ agriculture (pesticides and herbicides)
- ✓ animal waste
- ✓ leakage from the landfills
- ✓ litter
- ✓ throwing of plastics in the oceans (any kind of plastic, including plastic derived from fishery such as fishing nets)
- ✓ untreated sewage
- ✓ urban storm water runoff
- ✓ debris blown into waterways from land
- ✓ marine dumping (garbage produced by each household in the form of paper, aluminium, rubber, glass, plastic, food is collected and deposited into the sea in some countries)
- ✓ mining
- ✓ damming of rivers
- ✓ accidental oil leakage
- ✓ radioactive waste
- ✓ pathogens
- ✓ salt water intrusion (saline water from sea enters into ground water near coastal areas. It occurs naturally but some human activities like pumping of fresh groundwater also increases salt water intrusion. Navigation channels, drainage

channels and agriculture channels also play important role in salt water intrusion)

iv

Students take turns to propose their answers.

Tips:

- The issue and its related implications will be formulated in a form adequate to students' age.

Once students begin naming polluting human activities, educator will ask them to introduce/to pour in the bottles something that recalls the cause of pollution they have just named. E.g.:

- ✓ industries (chemical pollution)
- ✓ animal waste
- ✓ untreated sewage

→ watercolours or tempera colours

- ✓ throwing of plastics in the oceans
- ✓ litter
- ✓ debris blown into waterways from land
- ✓ marine dumping

→ pebbles, nuts, topsoil

- ✓ urban development
- ✓ agriculture (pesticides and herbicides)
- ✓ leakage from the landfills

→ watercolours, tempera colours, milk


- ✓ mining
- ✓ damming of rivers
- ✓ salt water intrusion

→ sugar, coffee powder, chocolate powder

Caution!!!

- The workshop is on water pollution! So be careful not to introduce/pour anything into the bottles that might cause real water pollution, as once workshop is ended the water contained into the bottles will be thrown away!
- Once workshop is over, be sure to dispose correctly of the water contained into the bottles used during the workshop
- For students and operators' safety, do not use any dangerous goods or hazardous chemicals for this experiment

Once they have ended, educator will then ask students to remain silent and to observe what the water into the bottles looks like after they have introduced/poured the



various materials in it, and how they feel about that.

Give them some moments to reflect in silence, then educator will ask students what the effects of water pollution are, e.g.:

- ✓ eutrophication (= chemicals in a water body, encourage the growth of algae. These algae form a layer on top of the pond, lake, river banks, shores.... Bacteria feed on this algae and this decreases the amount of oxygen in the water body, severely affecting the aquatic life there) ^v
- ✓ human and animal diseases
- ✓ death of aquatic animals
- ✓ impaired aquatic habitat and destruction of ecosystem
- ✓ effects on food chain (disruption in food chains happens when toxins and pollutants in the water are consumed by aquatic animals - fish, shellfish etc. -which are then consumed by humans) ^{vi}

Students take turns to propose their answers.

Total time for Activity 2.2: 20-30 minutes according to age and number of participants.

Tips:


- The issue and its related implications will be formulated in a form adequate to students' age.

Activity 2.3 – Then educator will stimulate children to discuss about the following points (possible answers):

1. Some people believe pollution is an inescapable result of human activity: they argue that if we want to live in cities, have factories, cars, trains, ships, oil, food to eat, services and goods of various kind, some degree of pollution (and water pollution in this case) is almost certain to result. In other words, pollution is a necessary if we want to make progress. But not everyone agrees with this view. One reason is that pollution brings costs of its own that undermine any economic benefits that come about by polluting.

2. What can I as a person do to prevent water pollution? (Ethical values)

- ✓ use water carefully and not waste it
- ✓ reduce plastic consumption and reuse or recycle plastic
- ✓ do not to put oil or any type of chemicals in the toilet or sink
- ✓ when cooking your food, do not throw excess fat or oil down in the drain
- ✓ maintain your car so it doesn't leak oil, antifreeze or coolant
- ✓ in maintaining your lawn/garden/balcony, do not use chemical pesticides or fertilizers
- ✓ use environmentally safe cleaning liquids (e,g for dish washing or clothes whashing)
- ✓ do not flush the unused pharmaceutical drugs down the drains nor throw them in the rubbish
- ✓ do your part by picking up some litter that you see in the environment

- 
- ✓ speak out in support of water pollution prevention

3. What can we as a society do to prevent water pollution? (Democratic values)

- ✓ do not pollute rivers with liquid and solid waste
- ✓ toxic fumes created from industrial zones should be filtered, rerouted and cleaned before making their way to the atmosphere
- ✓ companies that develop products and goods should focus on developing materials that are eco-friendly and recyclable
- ✓ take action to solve water problems
- ✓ enhance national and international laws that protect the oceans, rivers and lakes from water pollution
- ✓ speak out in support of water pollution prevention

4. How to live in harmony with the nature? (Environmental values)

- ✓ have respect for water and life
- ✓ conserve water and conserve the natural environment
- ✓ minimize storm water runoff: with advanced planning, we can minimize water pollution from storm water runoff

Students take turns to propose their answers.

Total time for Activity 2.3: 15-20 minutes according to age and number of participants

Tips:

- The issue and related implications will be formulated in a form adequate to students' age.
- Educator shall adapt the level of discussion to the group age. In case children in the group have different ages, educator shall involve the youngest children into the most simple questions and shall ask the eldest children to develop the answers or topics proposed by the youngest.

Part 3 – Art work

Children are now invited to play with what they have observed, talked about, guessed, learnt, discussed. This part of the workshop can be held either outdoor or indoor.


Activity 3 – Divide the group of children in smaller groups of 3 students, and give each group an A1 (or larger) white paper sheet.

Each group of three students will draw:

- a source of water (lake, river, ocean, sea, pond, clouds, etc...)
- an element of the ecosystem connected to water (fishes, aquatic mammals, trees, vegetables and fruits, human beings, animals, food,)
- a cause of water pollution.

For example, a group might want to draw the sea, a whale and a factory; another might prefer to represent a river, fishes and plastic bottles; etc..

Students will use pencils, coloured pencils, crayons, markers, watercolours, tempera colours, and brushes to paint their images. They shall also cut pictures off the



magazines given to them, if images are related to the topic, and will glue or tape them on the big sheet of paper they're working on.

Students within the same group will cooperate and help each other in the drawing.

Total time for Activity 3: 30-45 minutes

Part 4 – Conclusion: express gratitude and describe your feelings

Activity 4 - Now invite children to stand up and stretch their backs, arms, legs. Then invite them to keep standing and to close their eyes, and to think about a beautiful source of water they like (it might be imaginary or a place where they've been), to cup their hands next to their chest, to smile, and to bow at the source of water they are visualizing. Breathing in, they will say "I see a beautiful (sea, lake, river, whatever they're visualizing)", and breathing out they will say: "thank you, (sea, lake, river, whatever they're visualizing)".

At last, educator and students have a brief exchange about what they just experienced together. Discussion topics might include:

- Does anyone feel more like part of the Earth?
- Which one of the elements did the students connect with the best?
- What did this feel like?

Students take turns to propose their answers.

Total time for Activity 4: 10-15 minutes

ⁱ Acknowledges: the form and steps of this exercise have been developed by: Kids' relaxation website, <http://kidsrelaxation.com/uncategorized/calm-still-lake/>

ⁱⁱ Source: Kids' relaxation website, <http://kidsrelaxation.com/uncategorized/calm-still-lake/>

ⁱⁱⁱ Smiling Mind. (2018). *Evidence based guidelines for mindfulness in schools - A guide for teachers and school leaders*. Australia.

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^v <https://www.toppr.com/guides/biology/natural-resources/water-and-water-pollution/>

^{vi} <https://www.toppr.com/guides/biology/natural-resources/water-and-water-pollution/>