

Lesson plan

Me and nature

The air we breathe

1. **Theme:** Me and nature: The air we breathe
2. **Grade:** 5th
3. **Lesson type:** for acquiring new knowledge
4. **Duration:** 45 min.
5. **Basic terms:** nature, environment, ecology, air pollution, contamination, nitrogen, oxygen, carbon dioxide, substances, climate change
6. **Pedagogical methods:** storytelling, presentation, discussion, dialog, reflection, group work, brainstorming
7. **Means:** board (interactive or otherwise), markers, laptop/computer, multimedia (screen/projector), ppt presentation, flipchart (optional), cards with air pollution challenges, cards with solutions

8. Goals:

○ Educational:

The students

- ✓ Recall the main components of air
- ✓ Describe how air pollution affects human health, animals, plants, and climate
- ✓ Propose everyday actions to reduce air pollution
- ✓ Analyse how religious rituals involving air highlight respect for air
- ✓ Discuss which solutions to air pollution are most effective at personal, community, and global levels
- ✓ Evaluate how religious teachings about nature encourage responsibility for reducing air pollution
- ✓ Create ideas for maintaining the quality of the air we breathe

○ Formational:

The students

- ✓ Listen attentively to examples of how different religions view air and breath as sacred
- ✓ Recognize air as essential for all living beings
- ✓ Participate in reflective discussions about why respecting air is important in daily life and in religion
- ✓ Express appreciation for religious and cultural rituals that show respect for air

- ✓ Value actions that contribute to keeping the air clean as a moral and spiritual responsibility
- ✓ Compare different religious perspectives on air and integrate them into their worldview

9. Cross-curricular connections: Biology, Religious studies, Chemistry, Physics

10. Intra-subject connections: with the lesson plans on the themes: I support others, Me and my environment, Me and health, and the other modules from the Me and nature theme

11. Expected results:

- ✓ Students explain in their own words how breathing works and why oxygen is essential
- ✓ Students describe at least three types of air pollution and their harmful effects on humans and nature
- ✓ Students can propose solutions to the main air pollution challenges
- ✓ Students organize their personal beliefs and knowledge into a statement of why clean air matters
- ✓ Students express appreciation for the role of air in religious rituals (incense, wind, breath, prayer) and see them as reminders of respect for nature
- ✓ Students show willingness to adopt at least one new habit that protects air
- ✓ Students develop a long-term attitude of reducing air pollution

12. Preparation

○ For the teacher: Reading the theoretical base, downloading the presentation, downloading the cards with challenges and solutions

13. Structure of the lesson:

Me and nature: The air we breathe

1. What is air?

- What does air consist of?
- How do we breathe?
- Why is air important?

2. Saving air from pollution

- What are the current challenges
- How are different religions using air in their rituals and helping to keep it clean
- How can we help

3. Activity – problem-solving task
 4. Reflection and discussion
- The students are prompted to answer several questions on the subject, reflecting on their thoughts and feelings and engaging in a discussion.

14. Structure, content and timeline

1. Introduction (5 min.)

- Teacher activity:

- Actualization of prior knowledge on the subject: What do you already know about air? Can you see it, touch it, or feel it?; Can you think of times when the air around us feels “different”? For example, after being near a busy road, in the forest, or after it rains?; Why do you think air is important for people, animals, and plants? (2 min.)

- Introduction of new information and terms: (3 min.)

Air is all around us, filling every space, even though we cannot see it with our eyes. It is not just “empty” but made up of a mixture of gases. The largest part of air is nitrogen (about 78%), which our bodies do not use directly, but which is important for plants and the soil. The next largest part is oxygen (about 21%), the gas we need in order to live. Without oxygen, humans, animals, and even tiny living things would not survive. Air also contains small amounts of carbon dioxide, which plants need to make their own food, and gases like argon, as well as water vapor that affects weather and clouds. Even though these gases are present in much smaller amounts, they are still important for keeping the Earth balanced.

When we breathe, air enters our nose or mouth and goes down into our lungs. Inside the lungs are millions of tiny air sacs called alveoli, where oxygen from the air moves into our blood. The blood carries oxygen all around our body to give us energy. At the same time, the blood brings back carbon dioxide, which is a waste gas made by our cells. This carbon dioxide travels back to our lungs and leaves our body when we breathe out. Breathing is something we do without thinking about it, but it is one of the most important processes for life. Every breath connects us to the air around us and reminds us how much we depend on it.

Air is important not only for breathing but also for many other reasons. It helps control the Earth’s temperature, keeping our planet warm enough for life but not too hot. Air also protects us by blocking dangerous radiation from the sun. It carries clouds and rain, which bring water to plants, animals, and people. Without air, birds and airplanes would not be able to fly, and sound could not travel, meaning we would not hear music, voices, or even the wind blowing. Clean air is part of what makes Earth a safe and comfortable home.

- Student activity:

- Participation in the dialog, asking questions, active listening

- Methods and tools:

- Methods: dialog, storytelling

- Tools: board, marker or an interactive whiteboard (for outlining the theme and the terms; optional, for writing down student's ideas, thoughts)
- 2. Stating the theme of the lesson: Me and nature: The air we breathe (35 min.)
 - Teacher activity:
 - Short presentation, focused on the essence of air, air pollution, religious practices, related to air and wind, and actions to prevent air pollution (10 min.)
 - Theoretical overview, performed with the presentation:

The problem is that the air does not always stay clean. Air pollution happens when harmful substances are released into the atmosphere. One common type of pollution comes from cars, trucks, and factories, which release gases like carbon monoxide and nitrogen oxides. Another type comes from tiny particles of dust, smoke, or soot, which can enter our lungs and make breathing difficult. Burning fuels such as coal, oil, or wood produces large amounts of carbon dioxide and other harmful gases that make the Earth warmer. Dust and small particles from construction, demolition, and incorrect waste disposal also harm the air. Sometimes nature also pollutes the air – volcanoes release ash and gases, and forest fires send huge amounts of smoke into the sky.

Air pollution is dangerous for both people and nature. For humans, breathing polluted air can cause coughing, asthma, allergies, and even serious lung and heart diseases over time. Children and older people are especially sensitive to dirty air. For nature, pollution can damage forests by harming leaves and soil, and it can make rivers and lakes too acidic for fish to survive. Polluted air also contributes to climate change, which causes glaciers to melt, sea levels to rise, and weather to become more extreme. Protecting the air means protecting the health of both humans and the entire environment.

Different religions also recognize air as a very important element and include it in their rituals and teachings. Ritual blowing, or insufflation, is a historical Christian practice involving blowing or breathing during rites such as baptism and initiation. It symbolizes expulsion of evil spirits and the infusion of the Holy Spirit or grace. Though largely phased out in today's world, insufflation persists in some Eastern Orthodox and Catholic rites as a sacred act of blessing and protection. Early Church Fathers referenced breathing as a form of spiritual power against evil. Air is also symbolically linked to the Holy Spirit and divine breath, representing God's life-giving presence that animates creation. Prayer practices encourage gratitude for God's gift of air and being "driven by the Holy Spirit like wind".

While Islamic tradition does not have explicit air-blowing rituals, the Prophet Muhammad forbade blowing air from the mouth onto food and drink to prevent contamination or unpleasant odours. This respect for air cleanliness extends to prohibitions against breathing directly into vessels. The concept of purity and pure things includes avoiding pollution or tainting air in relation to food. This reflects broader Islamic principles of cleanliness (taharah) and care in everyday acts as forms of worship and health preservation.

In Jewish rituals, the spirit of God (Ruach Elohim) is associated with divine breath and wind active at creation. Some rituals invoke holy air or breath symbolically to bless and renew life, such as in mikveh-related ceremonies where the breath of God is called upon as a renewing spiritual force. The wrapping in the prayer shawl (tallit) after blessing the breath symbolizes

being enveloped by God's covenant and life-giving spirit, tying air and breath to spiritual identity and renewal.

The concept of “Air-world” (Vayu) is crucial to Hindu religion and ritual practice. Vayu, the wind god, symbolizes the divine breath of life and vital energy (prana) flowing through all beings. Air connects earthly and celestial realms and participates in life and spiritual transformation. Rituals include indirect inhalation of Vayu through incense, bells, and mantras, and breath-centric practices such as pranayama (controlled breathing) in yoga to harmonize life's vital air. Seasonal festivals honour air and monsoon winds as essential life forces.

In Buddhism, Air (Vayo) is one of the classical elements, characterized by movement, essential for supporting life and connected to sound and perception. It is part of yogic practices, including breath control exercises in meditation aimed at spiritual insight and wisdom development. Air is seen in ritual and philosophical contexts as a subtle phenomenon supporting the body and mind, with a symbolic role in elements like sound (shabda).

The traditions also include behavioural guidelines respecting the cleanliness and sanctity of air, all emphasizing air's profound spiritual and ritual importance. Christianity, Islam, and Judaism emphasize stewardship of creation, linking care for air quality to religious duties to protect the environment and all creatures. They teach people to keep the air clean, promote sustainable habits, and encourage followers to adopt responsible environmental behaviours.

There are a few things that everyone can do to help keep the air clean. Choosing to walk, ride a bike, or use public transportation instead of driving a car reduces harmful gases. Saving electricity at home, such as turning off lights, computers, and TVs when we do not need them, also reduces pollution because less fuel is burned to produce energy. Planting trees is another excellent way to help, since trees clean the air by absorbing carbon dioxide and producing oxygen. Avoiding activities like burning trash or plastic prevents poisonous smoke from entering the air. Even recycling and reusing materials can reduce pollution because it means fewer factories have to produce new items.

Clean air is one of Earth's most precious resources, and it belongs to everyone. By taking care of it, we are not only protecting our own health but also helping animals, plants, and future generations.

3. Activity: Problem-solving task (25 min.)

- ✓ The teacher divides the class into small groups (2-3 students)
- ✓ The teacher gives each group 2 cards) with a brief description of a situation where the air gets polluted
- ✓ The teacher gives each group 2 cards with solutions to the problems mentioned the in first set of cards
- ✓ The students should match the 2 problem cards with the corresponding solutions and think of a way to expand the solution (add more details, create a scenario) and propose another idea to resolve the issues, presented in the cards
- ✓ Each group presents their solutions to the class
- ✓ The teacher initiates a discussion on the most helpful ways to prevent air pollution, summarising students' ideas

- Student activity:

- Participation in the dialog, taking notice of the presentation, asking questions, active listening, participation in the activity and in the follow-up discussion
- Methods and tools:
 - Methods: dialog, presentation, storytelling, group work, discussion, brainstorming
 - Tools: interactive board or a screen, laptop/computer, board, marker, flipchart (optional, for writing down students' ideas), cards with air pollution challenges, cards with solutions
- 4. Reflection and discussion (5 min.)
- Teacher activity:
 - Posing questions for a discussion:
 - ✓ Why do you think clean air is important for our health and for the world around us?
 - ✓ What kinds of air pollution have you seen in your daily life?
 - ✓ What do you think the similarities are between the religious rituals that we talked about today?
 - ✓ What is one thing that you could start doing today to prevent air pollution?
 - ✓ If you could create a new tradition in your family or community to protect clean air, what would it be?
 - ✓ How do you think we can help more people understand how important clean air is?
 - Engaging the students with prompts:
 - ✓ "For me, I notice how much better I feel when I'm in the forest or mountains, breathing fresh air. Where do you feel the air is clean and fresh"?
 - ✓ "I sometimes notice car exhaust when I'm walking near a busy street, and it makes the air smell bad. Have you ever noticed smoke, dust, or smells that made the air feel dirty"?
 - ✓ "I think that all of the rituals are interesting and help us understand the importance of clean air".
 - ✓ "I can start using public transportation more".
 - ✓ "I think I'd create a 'Clean Air Day' where everyone plants a tree or spends time outside, cleaning their surroundings".
 - ✓ "My idea would be to talk with friends and family about it and try to set an example with my actions".
 - Answering questions and clarifying information
- Student activity:
 - Engaging in the discussion
 - Reflection on their ideas and emotions on the subject

- Methods:

- Methods: reflection, discussion, active listening
- Tools: flipchart or a board and a marker to write down some of the students' ideas

15. Variations:

- The “Balloon experiment”: The teacher inflates a balloon and then lets the air out slowly in front of a candle flame; The teacher initiates a discussion about the experiment and the composition of air; The students observe and participate in the discussion, prompted to also recall why clean air is important and how we can help protect it.
- The “Pollution in a jar” activity: The class, with teacher supervision, places two jars in particular places: one is left open near a road (the street besides the school, in front of someone's home) and the other one is positioned in the classroom, sealed; after a short while (preferable a couple of days), the class compare them by wiping the inside with a tissue to see the dust and dirt collected; meanwhile and after the experiment, the students discuss the dangers of air pollution.
- The “Clean air” poster: The teacher divides the class into groups; each group creates a poster showing ways children and families can help keep the air clean (walking or biking, planting trees, saving energy, recycling, etc.); each group presents their posters to the class, reinforcing the idea that everyone can contribute to protecting air quality.
- The “Air quality detective” activity: The teacher takes the class on a short walk around the schoolyard or nearby area; the students look for signs of clean air (trees, fresh smells, clear sky) and polluted air (car exhaust, litter, smoke, unpleasant smells); The class returns to the classroom and students share their observations and suggest ways the school or community could improve air quality.
- Cleaning the school yard activity: The teacher organises a cleaning hour, when the class is given the task to collect as much litter as possible from the school yard (or, if possible, a nearby littered area); the waste is then recycled and the students share their observations and ideas on how to keep the environment (and air) clean.

16. Interesting facts (from Serebrjakova, A., 2024: <https://airvalent.com/blogs/news/10-interesting-facts-about-the-air-you-might-not-know?srsltid=AfmBOop8tb0OqA2UofG7hbQW8QXA2m-wuBOB1NvZX-D2gRmzGriv5dfV>; <https://kids.kiddle.co/Air>; <https://heartlandairmonitoring.org/wp-content/uploads/2016/05/Interesting-Air-Facts.pdf>; <https://www.volunteerfdip.org/interesting-facts-about-air>; and <https://education.nationalgeographic.org/resource/air/>)

- ✓ Hot air is lighter than cold air! This fact helps hot air balloons fly. When you heat up the air inside a balloon, it becomes lighter than the cold air outside, so the balloon floats up into the sky.
- ✓ Two French brothers, Joseph-Michel and Jacques-Étienne Montgolfier, invented the hot air balloon in the 1700s. On June 4, 1783, they made the first hot air balloon that actually worked and flew!
- ✓ The trees are considered to be “the lungs” of Earth, as they help maintain air quality by absorbing carbon dioxide during photosynthesis and releasing oxygen. They also decrease air temperature.
- ✓ Wind is simply air that is moving. Moving air helps create our weather.
- ✓ For a long time, people have used air to create technology: Ships used sails to move with the wind, windmills used the power of moving air to do work, Aircraft use propellers to push air over their wings, which helps them fly. Since the late 1900s, air power has also been used to make electricity.
- ✓ Wind is useful in other ways, one of which is for sports – sailing, windsurfing, and paragliders for example.
- ✓ In ancient Greece, air was one of the four classical elements, believed to make up everything in the universe.
- ✓ A person breathes about 16 kg of air every day.
- ✓ The idea that polluted air can be harmful to us dates back to the Middle Ages. Direct evidence of bad effects from polluted air began to accumulate after the first use of coal around the beginning of the fourteenth century.
- ✓ Nine out of ten people in the world inhale polluted air.
- ✓ The air is different as you move higher and higher into the atmosphere. The air gets “thinner” as elevation climbs because there are fewer air molecules up there. Mountain climbers often have to use canisters of oxygen as they climb above 3,800 meters (12,500 feet) because there is not enough oxygen in the atmosphere for most people to breathe.
- ✓ High mountains such as Mount Everest (8,848 meters, or 29,035 feet), in Nepal and China, are littered with empty oxygen canisters that climbers discard when they are used up.
- ✓ People can breathe without oxygen canisters in airplanes, because airplanes are pressurised at ground level.