




Learning scenario about **environmental awareness**

Title: **Air Pollution and Human Health– Real World Simulation**



General information

Topic(s)	Goals	Activity description
<input type="checkbox"/> Climate change <input type="checkbox"/> Biodiversity and conservation <input type="checkbox"/> Waste management and recycling <input type="checkbox"/> Water resources and quality <input type="checkbox"/> Sustainable agriculture and food security <input type="checkbox"/> Environmental health and justice <input type="checkbox"/> Energy use and transportation 	<p style="text-align: center;">Objectives</p> <ul style="list-style-type: none"> For the students to understand how air pollution can harm the human health Discuss how different groups are affected unequally due to location, income , race etc. and work on thinking about solutions <p style="text-align: center;">Learning outcomes</p> <p>By the end of this learning scenario, students will be able to:</p> <ul style="list-style-type: none"> Identify what causes air pollution and what are the related health issues. Understand why wind affects a lot more that they thought How human actions are related to pollution and what they can do 	<p style="text-align: center;">Student's profile (age): 14-18</p> <hr/> <p style="text-align: center;">Number of participants: 20-30</p> <hr/> <p style="text-align: center;">Duration: ≈90 min</p> <hr/> <p style="text-align: center;">Related subject of the school curriculum/Skill/Content: Physics – Social</p> <hr/> <p style="text-align: center;">Material needed: Polluting sources cards (Factory, wildfire , city , village, vehicles, houses, restaurants, Farms, Zero Air Pollutants Factory, Volcano) Residential cards Red (Polluted territories) ,Yellow(Semi polluted territories) , Green (Almost no polluted territories) Environmental protector Cards Forests, Wind!</p>





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Introduction



Start by explaining to the students that they will be participating in a real world simulation activity. Emphasize that this activity helps them understand air pollution and why it can affect people differently. Briefly introduce the concepts of environmental health and justice in simple terms suitable for their age group. Use examples they can relate to, like why clean air to breathe is vital, the condition that their country is and mention other countries with huge problems like India –and how Western consumerism and drive for cheap prices contribute sot that.





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Kolb's cycle steps

1



FEELING

Engage students in hands-on activities and real-life examples related to the environmental topics.

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Take the students to a safe outdoor area and share the cards.

Divide them into teams:

1. Polluting sources (2 members one student will be the base for example the factory and the other will spread its pollutants cards),
2. Residents and environmental protectors.

Instruct them to go and stand wherever their logic indicates. During the setup encourage discussions about why each student picked their spot, why it's essential to keep the environment clean and how pollution can harm people and animals.





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2



WATCHING

Encourage students to reflect on their experiences, observations, and emotions during the activities.

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Gather the students after they picked a spot and ask them to remember where they stood or take a photo and sit in a circle.

They share a relevant story. For instance, if no residents stood nearby the factory tell a story about a factory that needed working hands so it offered houses to the poorest people nearby in order to work there. (share stories of mining and industry) Ask who has the option to stay away from polluted areas.

Show paintings by L.S. Lowry of the industrial cities of northern England and encourage discussion about what life was like for the people living there.

Have them look at a map of a big town and ask what are the differences in the areas? Parks or not, industry or not etc.. Which are the most expensive houses do you think? Where do workers live ? etc..

Another possible discussion could be about the students with the forest cards standing nearby the city. You could explain that this is a good action because it cleans the air of the city but at the same time, explain the dangers. For example: forest fires that could spread to the city. Highlight the importance of everyone having access to clean air and a healthy environment.





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3



THINKING

Guide students to analyze and conceptualize the information gathered, connecting it to broader concepts and theories

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Ask the students, to think what they could have done differently, ask them what measures they could have taken at personal level or state level.

Then depending on the measures they thought of (cleaner factories, planting trees, using public transport, public transport upgrade by the state, protect the wild forest,) ask them to remove as many relevant pollution cards as they believe would be impacted by the measures.

E.g. of the 10 industry pollution cards, perhaps 4 can be removed

What actions could add to the protection cards? E.g. to the clean forest cards.

Discuss how such changes could affect differently the population and the environment of your city or your country or a poorer country.





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4



DOING

Provide opportunities for students to apply their knowledge and actively experiment with sustainable practices in their daily lives.

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Now that the students have their first hand on learning experience through the first positioning, have learned some new things for air pollution and they have done critical thinking through searching for ways to improve the situation.

They can rearrange themselves and try to find an ideal positioning of the different aspects on the card. They should be able to justify their choices. E.g. should the forest be near an industrial site for example? Why?

Encourage them to observe and discuss what they did differently, how the removal of cards served them during their new positioning in this better world scenario and if they think that such reductions is a realistic scenario for the future .





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Evaluation



Create a Kahoot Quiz around the scientific aspect of the issue . e.g. what are the sources of pollution and what can counteract them.

Give small groups of students a map (preferably of their own village or town or a famous town). Have them look at the map and analyse:

1. Potentially polluted areas/sources of pollution.
2. Positive impacts on the environment

Then they should put their findings into a small presentation with whatever means they are familiar with or the school provides. PPT would be a nice choice.

Evaluate the accuracy of the analysis based on the input and discussions above. Assess the quality of the presentation based on visuals, voice and success in conveying the information clearly and in an interesting way. They might also be assessed on their ability to answer questions.

Assess how well students worked together within their groups and gave and received feedback. Use self-assessment, peer assessment, or observation to evaluate teamwork, communication, quality of work delivered and time management.





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Additional resources – Tips and tricks










<https://education.nationalgeographic.org/resource/air-pollution/>

<https://www.youtube.com/watch?v=e6rglsLyIYs>

[Air Pollution for Kids | Learn about the Causes and Effects of Air Pollution](#)

<https://www.apha.org/Topics-and-Issues/Environmental-Health/Environmental-Justice>

P A R T N E R S							
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