

Noise and emissions from transport, Nitrogen Oxides (NO_x)



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Activity No. 1

Part of the lesson: EVOCATION

The aim of the activity: To introduce the topic and find out what pupils know about the different means of transport.

Step 1

Brief description of the activity:

We introduce the topic and lead the discussion about the means of transport daily used by pupils.

Instruction (what you need to tell the students):

What comes to your mind first when you hear the word „transport“?

How do you travel most frequently? Why?

How do you travel on holiday?

Step 2

Brief description of the activity:

Pupils watch the pictures of the different means of transport. Together they try to think about the pros and cons of the concrete means. The opinions are written down on the blackboard in a T-graph:

the pros	the cons

Instruction (what you need to tell the students):

When is the transport by cars convenient? By Bus? Train? Ship? Airplane?

When is it better to use a bicycle?

Step 3

Brief description of the activity:

We ask questions focused on the environmental impacts of the individual means of transport.

Instruction (what you need to tell the students):

What do you think, what is the most ecological mean of transport?

Which mean od transport has the most negative impact on the environment?

Tools for the activity (everything you need to take to the classroom): Pictures of various means of transport, or images projected on the interactive board, board/flipchart, markers

Estimated time (max. 40 min.): 7 minutes

Activity No. 2

The aim of the activity: To realize the negative impact of the transport on the environment and on our health.

Step 1

Brief description of the activity:

Prepare a text for pupils on the topic of noise and emissions from transport, NO_x. (Annex 1). All the pupils read the text.

Instruction (what you need to tell the students):

Carefully read the text. What is it about?

Step 2

Brief description of the activity:

After reading the text, hand out the empty cards of identical format, size and colour. Each pupil receives one card. Pupils are asked to formulate one concrete question, based on the text, and write it down on a card. The question has to start with „W“ (Who? Which? When? Where? Why? ...)

Instruction (what you need to tell the students):

Each of you received a card. Your task is to formulate one question, based on the text you read, starting with „W“ (Who? Which? When? Where? Why? ...). The answer to this question can be found in the text. The question should focus on the information that you personally found interesting.

Step 3

Brief description of the activity:

Collect the cards, mix them and each pupil draws one, reads the question and tries to answer it, depending on what he/she remembers from the text. He/she can use the text if needed. Other pupils listen and compare the answers with the information written in the text.

Instruction (what you need to tell the students):

Each of you draws one card, reads a question and tries to answer it. All the others listen and check whether the answer is correct. If you draw the question that you wrote down, draw a different one.

Tools for the activity (everything you need to take to the classroom): Text from Annex 1, identical empty cards for everyone, pens

Estimated time (max. 40 min.): 15 minutes

Notes: Adjust Annex 1 according to your needs. Text should correspond with the age and the level of knowledge of the pupils. In the step 3, teacher can contribute with her/his own questions.

Part of the lesson:
APPRECIATION

Activity No. 3

The aim of the activity: To realize the level of noise in the environment we live in and its impact on our health.

Step 1

Brief description of the activity:

We divide pupils in the groups of 4. Each group takes a tablet and works with the application „Sound meter“, for measuring the level of noise from the surroundings.

Instruction (what you need to tell the students):

We are going to work in groups. On the tablets, open the application „Sound meter“.

Step 2

Brief description of the activity:

According to possibilities, allocate the groups different places, where they can measure the level of the noise. It can be a classroom, quiet school corridor, noisy street through opened windows, quiet street, school yards etc.

Instruction (what you need to tell the students):

Measure the level of the noise in decibels.

Step 3

Brief description of the activity:

Pupils compare the measured data with the official data declaring the impact of different noise levels on the human health. Have these data written on a board.

Instruction (what you need to tell the students):

On the board, there is an overview of data declaring the impact of different noise levels on the human health. Compare your measured data with these and think, whether they might have any impact on the human health.

Step 4

Brief description of the activity:

Each group presents the results of the measurements and compares the data with those written on a board. (Annex 2).

Instruction (what you need to tell the students):

Compare the level of the noise in the classroom, school corridors, school yard, noisy and quiet street and evaluate how concrete level of noise impacts the human´s health.

Tools for the activity (everything you need to take to the classroom): Tablet with the application “Sound meter” or similar tools or applications, table with data of impact of the noise on the human health (Annex 2)

Estimated time (max. 40 min.): 10 minutes

Notes: Application „Sound Meter“ is available in English, downloadable from the Smart Tools series. If you have no time limits, you can take pupils out to measure the level of the noise in different locations outside the classroom/school. If you have no tablets available, you can prepare the different noise levels data described on a paper and let pupils work with these data.

Part of the lesson:
APPRECIATION

Activity No. 4

Part of the lesson: REFLECTION

The aim of the activity: To sort out the information about negative impacts of the transport on the human health and to express own attitudes related to the topic.

Step 1

Brief description of the activity:

Pupils are handed out the worksheets with incomplete sentences related to the transport topic. (Annex 3) Their task is to individually complete the sentences.

Instruction (what you need to tell the students):

In the worksheets you received, complete the sentences.

Step 2

Brief description of the activity:

Volunteer pupils might read what they wrote. The class discusses the different opinions.

Instruction (what you need to tell the students):

Read to your classmates what you wrote. Answer their questions and together think about the possible ways of elimination of negative impacts of transport on our health.

Tools for the activity (everything you need to take to the classroom): Worksheets with incomplete sentences for each pupil, (Annex 3), pens

Estimated time (max. 40 min.): 8 minutes

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Annex 1

Eg:

<http://www.oecd.org/greengrowth/greening-transport/41380980.pdf>

http://ec.europa.eu/research/transport/projects/items/eu_tackles_noise_pollution_in_the_environment_en.htm

<http://www.eea.europa.eu/themes/transport>

Sources in SK language:

http://www.ssc.sk/files/documents/technicke-predpisy/rozborove_ulohy/ru_hluk_2013.pdf

<http://www.svetdopravy.sk/emisie-cestnych-vozidiel/>

Annex 2

Table - the levels of noise impacts on the human health:

Noise level	Impact on human health
Up to 65 dB	impact on sensitive people (eg. noisy street)
65 – 90 dB	narrowing of the veins, increased sweating, faster breathing (shouting, some working machines)
90 – 100 dB	possible impact on hearing ability, deafness (eg. motorcycle, disco)
100 – 200 dB	permanent damage of the hearing ability, life threat

Annex 3

Complete the sentences:

1. Our family uses most frequently for transport:

2. If we have travelled on holidays to the seaside, I would prefer:

3. Mean of transport supporting health the most is:

4. In big cities, pollution from the transport can:

5. I would not like to live near the crossroad, because:

6. Near to the roads the noise would be lower if:

7. The fruits growing along the roads would:

NOTES