



Concepts for teaching units

Title	<i>Environmental concerns</i>
Age of students/grade	<i>This depends on the lesson plan developed based on this teaching unit.</i>
Length of the unit	<i>Approximately 2 lessons (2 x 45-50 minutes)</i>
Materials needed	<i>If possible, articles about a real environmental issue that students are concerned about. It is also possible to ask students to bring such materials.</i>
Objectives	<p><i>Improving text understanding.</i></p> <p><i>Applying mathematics in real-world problems.</i></p> <p><i>Strengthening the ability of students to collaborate with each other to tackle complex tasks.</i></p>
Content related anchor points	<p><i>Analyse the question(s) from a content point-of-view: Which mathematical tools will be needed to answer the question(s)? Is additional (mathematical content) input by the teacher needed before the students can start working on the questions(s).</i></p> <p><i>Teacher is to support students in the group work phase and see whether all mathematical content that is needed for the question(s) is also available in each group. This may also be taken into consideration when composing the groups.</i></p>
Methodology related anchor points	<p><i>Start with article about environmental issue (e.g. fossil fuels for powering airplanes). Alternatively, start with brainstorming activity about environmental issue. Eventually involve debate about which countries or which parts of the world are particularly vulnerable to the environmental issue that is discussed.</i></p> <p><i>Formulate concrete question(s) that can be answered using mathematics. It is important that the mathematics is within the ability of the students. E.g.: How much fossil fuels is used per year for aviation in a certain country or region? If 30% of it is to be replaced with bio fuels (SAF – sustainable aviation fuels), how much agricultural area would that require to grow the plants required to produce the bio fuels?</i></p> <p><i>Let students work on the question(s), best in groups. If there is more than one question, different groups can work on different issues.</i></p> <p><i>Groups should prepare concrete output, e.g. poster or article draft.</i></p> <p><i>Lesson(s) should end with all groups presenting their results to the whole class. Concrete output should be displayed either in the classroom or in other public space in the school.</i></p>

Language related anchor points	<p><i>Many articles about environmental issues might be written in fairly complex language, using a number of words and expressions that students whose first language is not the one in which the articles are written might find hard to understand. It might be good to include a phase during article reading where all students can come out and write any word, expression, or term on the blackboard that they are not sure understanding. This is of course not limited to non-first-language students – many articles contain expressions that school students would not use in their everyday life language use.</i></p>
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Appendixes

Sample activity: See ready-to-use teaching unit “Unit Description_Final_AT07.docx” (Electric percentages)