

Truck fuel consumption

Lesson plan for teachers



Funded by the
Erasmus+ Programme
of the European Union



STEP AHEAD II

The support of Professional development of VET teachers and
trainers in following of New trends in Automotive Industry
Automotive Innovation & Teacher training Academy
2018-1-SK01-KA202-046334



Truck fuel consumption

Lesson 2x 45 minutes

The aim of the lesson: Students will know the main important factors influencing fuel consumption

Activity No.1

Part of the lesson: **EVOICATION**

The aim of the lesson: Finding out what students know about the topic

Step 1	Brief description of the activity	<p>"Free typing" method - students have the task to write down everything that comes to mind in connection with fuel consumption. If they are not sure how to proceed with the "Free typing" method, we will remind them of the basic rules:</p> <ul style="list-style-type: none">- Students have 3 minutes to write They should write down everything that comes to mind in connection with the topic, although they may not be sure whether the information entered is correct or not.- There is no "wrong answer" or information, everything is OK- They should use all the time for writing and continue it even when they think they have nothing to write - they can also write anything that interests them in relation to the topic
--------	-----------------------------------	--

		<ul style="list-style-type: none"> - In case they don't start writing on their own, ask them a question that could guide them...eg. What factors do you think impact fuel consumption, when it comes to trucks?
	Instruction (what you need to tell the students)	<p>Write down everything you can think of in terms of fuel consumption and try to focus on trucks.</p> <p>Try to write everything you know about this topic. Write everything you can think of, use all the time you have for it and don't stop writing even when you think you've already written everything. If you think so, write what you would like to know about the topic, what would interest you, just keep writing.</p> <p>You have 3 minutes to do it</p>
Step 2	Brief description of the activity	Let students be active and present their opinion, in case of inactivity, gradually invoke them. The time of presentation of their opinions, which they wrote on paper, should not exceed 12 minutes. Gradually write the words they come up with on the board / projection.
	Instruction (what you need to tell the students)	Now tell everyone what you have noted, and if someone before you has already told a part, add what has not been said yet.
Step 3	Brief description of the activity	Addition of key terms that were not heard from students. Eg: driving resistance, vehicle weight, incline, driving style,....
	Instruction (what you need to tell the students)	We will now add key terms that were not mentioned.
Tools for the activity (everything you need to take to the classroom)		Paper, pencil, whiteboard / projection

Estimated time (max. 40 min.)	20 minutes
Notes	

Activity No. 2

Part of the lesson: **APPRECIATION**

The aim of the activity: Deepening students' knowledge about the truck fuel consumption and factors that influence it

Step 1	Brief description of the activity	Students will receive a link / location of the presentation + other materials on the topic of fuel consumption / driving economics. As an example, see Annex No 1 (Graphs)
	Instruction (what you need to tell the students)	You have 15 minutes to self-study from the materials - see the link / location of materials you see on the board / projection
Step 2	Brief description of the activity	Place a "blind map" on the board / projection, see the Annex to topic no. 2. Give the blind map from Annex 2 to the students and let them fill it in for about 5 minutes.
	Instruction (what you need to tell the students)	Based on the information you obtained by self-study in the previous activity, fill in the blind map that you'll receive now, you have 5 minutes + you can add time, if necessary, on the next lesson.
		End of the 1st lesson

Step 3	Brief description of the activity	Random check of the completion of the blind map. Joint evaluation of the blind map in the class. The added map is also placed as an Annex 2. Time estimated is about 10 minutes.
	Instruction (what you need to tell the students)	Together we will gradually complete the blind map. (Students are activated by the teacher, especially those who do not report much by themselves otherwise).
Tools for the activity (everything you need to take to the classroom)		PC / Notebook / tablet / mobile, pencil, whiteboard / projection. Annex 1 and Annex 2
Estimated time (max. 40 min.)		40 minutes
Notes		

Activity No. 3

Part of the lesson: **REFLECTION**

The aim of the activity: Evaluation of acquired knowledge

Step 1	Brief description of the activity	<p>Divide the students into two groups. One pencil and one paper are enough for their work in each group.</p> <p>Group a) writes together on paper as many factors as possible to achieve the highest possible fuel consumption.</p> <p>Group b) writes together on paper as many factors as possible to achieve the lowest possible fuel consumption.</p> <p>Writing time is 5 minutes.</p>
--------	-----------------------------------	--

	Instruction (what you need to tell the students)	<p>Divide into 2 groups.</p> <p>Group a) write together on paper as many factors as possible to achieve the highest possible fuel consumption.</p> <p>Group b) write together on paper as many factors as possible to achieve the lowest possible fuel consumption.</p> <p>You have 5 minutes to do it.</p>
Step 2	Brief description of the activity	<p>Presentation of factors of individual groups.</p> <p>Examples of factors, for teacher only, can be found in Annex No. 3 (Pyramid)</p>
	Instruction (what you need to tell the students)	<p>The representative of each group has 3 minutes to present the factors that you wrote down together, the representatives of the other group can join the discussion and reflect on the correct or wrong opinions.</p>
Tools for the activity (everything you need to take to the classroom)		<p>2 papers and 2 pencils, one for each group/or flip papers & markers</p> <p>Annex No, 3 for teachers only</p>
Estimated time (max. 40 min.)		11 minutes
Notes		

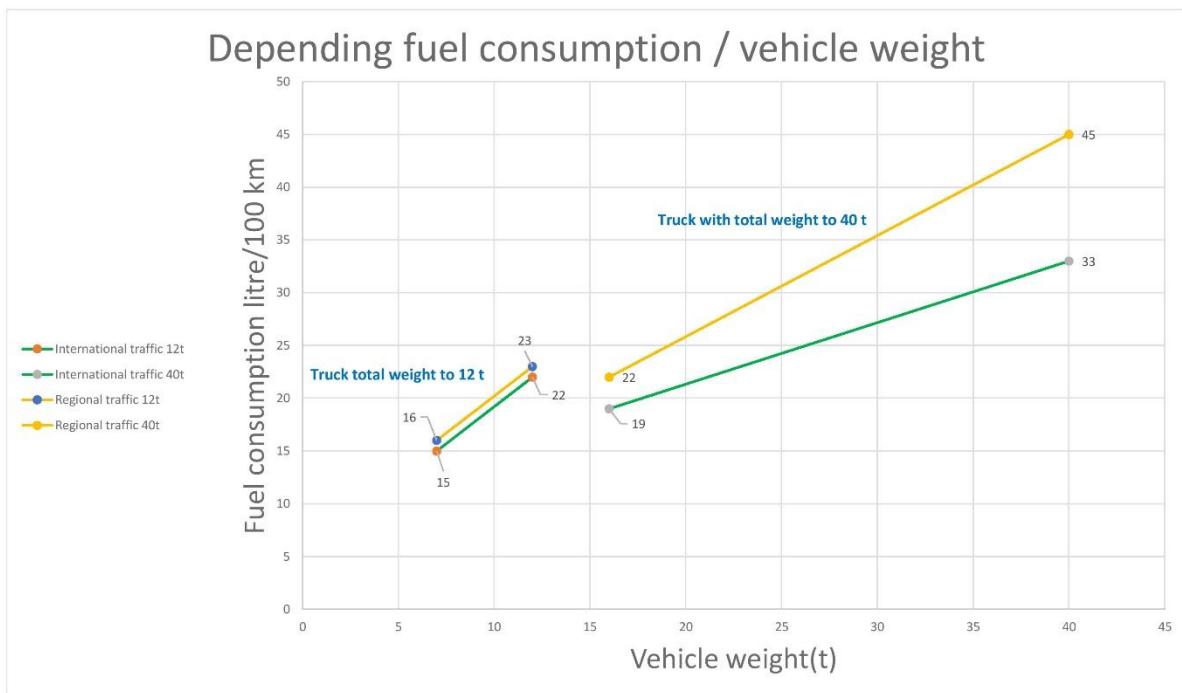
Activity No. 4

Part of the lesson: **CONCLUSION**

The aim of the activity: Sorting of individual influences on fuel consumption according to their importance (Pyramid)

Step 1	Brief description of the activity	<p>Write 8 factors influencing fuel consumption in a scattered order on the board / projection.</p> <p>Students work in two groups, each writing on paper and then on the board / projection factors their correct order.</p> <p>The pyramid of factors listed in correct order is in Annex no. 3 (for teacher only).</p>
	Instruction (what you need to tell the students)	<p>Create a pyramid of factors influencing fuel consumption in groups, ordering them according to their importance for, or impact on the fuel consumption.</p> <p>Each group please write your pyramid on a board / projection. You have 3 minutes to do it.</p>
Step 2	Brief description of the activity	Write the right/correct pyramid on the board.
	Instruction (what you need to tell the students)	<p>Explain to the students that the pyramid is built exactly in the order as it is written on the board, but it is possible that in certain parts of the pyramid, the individual floors may overlap for various reasons, and try to invent these reasons together with the students.</p> <p>Eg: the vehicle runs off-road, etc.</p> <p>At the same time, it is not a mistake for the order to differ one rung up or down. The cornerstone of the pyramid should remain the only one in place and cannot be rolled over.</p>
Tools for the activity (everything you need to take to the classroom)		<p>Paper, pencil, whiteboard / projection.</p> <p>Annex No. 3 only for teachers</p>
Estimated time (max. 40 min.)		15 minutes

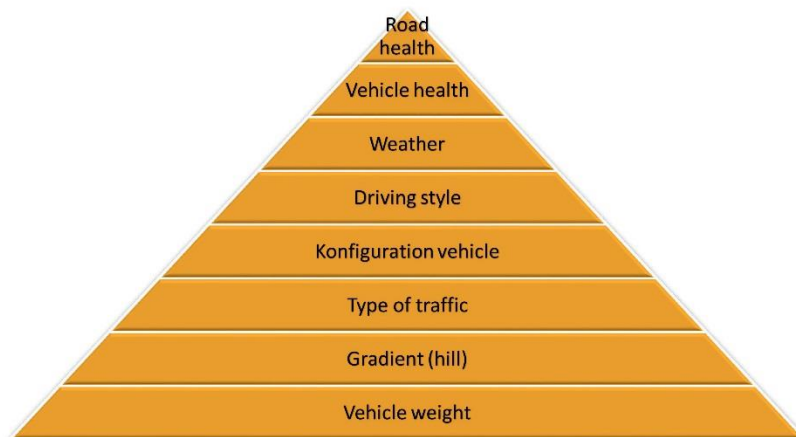
ANNEX 1



ANNEX 2



ANNEX 3



NOTES:



The opinions presented in this document are the views of the STEP AHEAD II project partnership and do not have to express the opinions of the EU.