

Lesson Plan

NEUROHEADWAY

Neuroscience Into Education

TRANSPORT ENGINEERING

Lesson nr. 1

Module for pupils on the age group: 7-11 (Primary level)

Learning Goals:

- The pupil will be able to explain how transport evolved through the ages mainly through the different vehicles;
- The pupil will be able to explain what is Transport Engineering;
- The pupil will be able to explain what is the importance of having good transport engineers in our everyday life, namely regarding traffic management;
- The pupil will know several possible careers to develop in the area

1	Introduction and registration of pupils	5m
2	This section is supported by a PowerPoint: • The importance of transport in the development of civilization (you can use some slides in the presentation) • What is Transport Engineering and its purpose • The studies you must pursue and improve to follow this	15m
3	• Career point of view. Indication of careers that can come out of this type of engineering, for instance, transport, traffic, cities organization and others.	5m
4	• General review of what has been told above and open a discussion about.	5m
5	• Activity focused on traffic management Use the simple model available online of a traffic intersection. Student will be placed the challenge of managing that intersection by decreasing the average time that vehicles are in the system: https://cloud.anylogic.com/#/model/2302ab3d-bec8-4389-92ad-a6b5e594b3ad;mode=SETTINGS The student who gets the lowest average can get a symbolic prize. This assignment has its main purpose to show how difficult is to manage traffic. This demands for good transport engineers.	15m
6	• At the end pupils should be able to comment about their own lives. What they experience in the transport system how they would solve certain problems.	10m

Power point Example

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BRIEF HISTORY OF TRANSPORT



The Invention of the Wheel

Soon humans found out that it was too much of an effort to transport the large animals they were hunting, sometimes for large distances so they decided and worked together to find an easier way to do it.

The Bright idea came with the 🧠
invention of the wheel. This happened around 3.500 years BCE.



Early experiments in transportation

Transportation became of the utmost importance for all the major civilizations on earth, but the Fenicien, the Egyptians and the Romans were the ones that developed this in a larger scale in order to expand their territories and the trade.



TRANSPORTS AND WARS

- In spite of the great improvement transport had with these ancient civilizations and after the invention of the wheel the major part of the soldiers in an army had to walk large distances. Only the highly graduated soldiers travelled on horseback. It is important to say that this form of displacement of soldiers continued for centuries, during the great wars we had in Europe. All through Crusades, Moyen Age, Napoleon invasions and even during the first and 2nd world wars in Europe the majority of the soldiers still had to walk.



Although the invention of steam engine was of extreme importance for the development of transports, in some cases was not practical at all because of the size and weight of the engines so cars and motorcycles could not attain a convenient speed. It was only in the beginning of 20th century that a French invented the gasoline engine.



A New Era in Transport begun with the gasoline engine

This opened the way to a series of new transports that so far were only in the mind of scientists but impossible to materialize just like Da Vinci with his futurist (but not insane) machines. The dream of certain people all through ages was the important step to move forward and fortunately still is.

