

Wood as a renewable and energy efficient resource

Questions and Answers for Video Lesson



Activity information

- Level:** Junior secondary school Years 7 – 10
- Duration:** 1 lesson
- Preparation:** Watch the video lesson titled “Wood as a renewable and energy efficient resource” and answer the following questions.
- Summary:** Students will learn about renewable and non-renewable resources and the energy used to produce various every day materials and products.

Questions

- 1. Explain the difference between renewable and non-renewable resources and provide an example for each.

2. Why is it important that we replant trees after harvesting?

- 3. What are some every-day goods produced from processing non-renewable fossil fuels?

4. What is the name of the energy intensive process that is used to refine iron from iron ore in steel making?

5. Explain how burning fossil fuels creates greenhouse gas emissions? Do you think this contributes to global warming?

6. Name some products made from wood?

○ 7. What is embodied energy?

8. Explain why wood is an energy efficient product.

9. What are some things you can do to contribute to a more sustainable future for our planet?

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Class Challenge

In class groups, draw up a table with three columns and in the first column make a list of the various structures found in and around your classroom. In the second column identify and list all the building materials that have been used to make each structure.

In your group, discuss alternative building materials and construction methods that could have made the structures more environmentally friendly and sustainable. Note these down in the third column. Discuss your findings with the class.

ANSWERS to Questions

1. Renewable resources are natural resources that can be used and replenished within a reasonable period of time such as our life time. Wood is an example, obtained from the harvesting of trees. It is renewable because trees can be planted and regrown within our life time. Once non-renewable resources are used, they cannot be replenished within our life time. Examples include fossil fuels such as coal, natural gas and crude oil (petroleum) that take millions of years to form from decomposing animal and plant material beneath the earth's surface.
2. If we didn't replenish tree stocks through replanting, wood would not be renewable and the resource would become depleted.
3. Plastics – used to make many things including drink bottles, grocery bags, and major components of mobile phones, iPods, TVs and computers.
4. Smelting in furnaces.
5. Carbon dioxide is a byproduct of the smelting process where fossil fuels are burnt when refining metals such as iron and copper. Carbon dioxide is a major greenhouse gas that contributes to global warming.
6. Timber floors, frames for houses and buildings, electricity poles, paper, furniture, wooden rulers and bowls.
7. Embodied energy is the total sum of energy used in the various stages of producing a good. For example, to produce a wooden chair, energy is used to harvest trees, transport logs, process timber in mills, run lathes, and wood turning and sanding equipment.
8. Wood requires less energy in construction than alternative building products such as concrete and steel.
9.
 - Reduce your level of waste, including food.
 - Recycle goods such as timber and paper.
 - Walk or ride your bike instead of getting a lift.
 - Use public transport for longer distances.
 - Substitute non-renewable products with renewable products. Choose wooden products where possible.
 - Choose locally produced goods that minimise transport miles from producer to consumer.