

# How to heat my house?

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Institute: Vikingaskolan

Country: Sweden

**Subject:** Science, Biology, Chemistry, Domestic Science, Physics.

**Grade level:** 9 – 12

**Objectives/competencies:** Students are expected to be able to:

- Seek and select appropriate information related to the study of different methods of heating from books, computers networks and web pages.
- Explain the advantages and disadvantages of different methods of heating, relating the explanation to the impact these methods have on climate, quality of air in the vicinity and economy.
- Explain the role of combustion of fossil fuels in the greenhouse effect. Explain the part these fuels play in the production of electric power.
- Explain the difference between using fossil fuels for heating and power production and using renewable fuels and renewable sources of electric power.
- Explain the advantages and disadvantages of different methods of different methods of building, the use of different building materials and isolation and relate this to the need of heating the house.
- Propose a way of testing the heat conductance of different building and isolating materials.
- To cooperate with partners in the group in planning and performing the measurements of the heat conductance of different building and isolating materials.

[Alternative for grade 12, physics/ chemistry:

- Propose a way of testing the heat production of different fuels
- Propose a way of testing the efficiency of different methods of power production.]
- Decide, with reasons, what is a good way of building the house, choosing the right building and isolating materials and the right methods of heating.

**Curriculum content:** Characteristics of different building and isolating materials, fuels and methods to produce electric power.

**Kind of activity:** Library search, laboratory investigation, group discussion to make a justified socio-scientific decision

**Anticipated time:** 6 lessons.

## Abstract:

Heating is a problem in both temperate climate and the subtropics, in the cold season. The method of heating is important for both the well-being and economy of the inhabitants, and the global climate. The role played by the use of fossil or renewable fuels and different methods of producing electric power is important. The way to build and isolate the house has bearing on the need of heating. Students should attain the knowledge permitting them to lead informed discussion of which sort of building methods and heating should be chosen.

Attached files		
1.	<a href="#">Student activities</a>	Describes the scenario in more detail and the tasks the students should perform
2.	<a href="#">Teaching guide</a>	Suggests a teaching approach
3.	<a href="#">Assessment</a>	Gives suggested formative assessment strategies
4.	<a href="#">Teacher's notes</a>	States the chemical, physical and biological concepts.