

What can it cost to heat my house?

Developer: Teachers at Vikingaskolan (Contact through Johan Krantz and Per-Magnus Persson)

Institute: Vikingaskolan

Country: Sweden

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

Grade level: 9 – 12

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

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- Seek and select appropriate information related to the cost 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.
- Propose a way of calculating (in grade 12) or estimating (in grade 9) the costs of using different building and isolating materials and different heating methods, with respect to the design of the house.
- Decide, with reasons, which way of building the house, choosing building and isolating materials and methods of heating is most suitable with respect both to a household's economy and long-term environmental effects.

Curriculum content: Costs and characteristics of different building and isolating materials, heating methods, factors influencing heat losses and heating efficiency.

Kind of activity: Library search, group work to calculate/ estimate the cost of different building and isolating materials and heating methods; group discussion to make a justified socio-scientific decision

Anticipated time: 4 lessons in grade 9, 5 lessons in grade 12.

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.	Student activities	Describes the scenario in more detail and the tasks the students should perform
2.	Teaching guide	Suggests a teaching approach
3.	Assessment	Gives suggested formative assessment strategies
4.	Teacher's notes	States the chemical, physical and biological concepts.