Ämnesprov, läsår 2015/2016



Årskurs

Delprov A2

engelsk version

Elevens namn och klass/grupp

Prov som återanvänds av Skolverket omfattas av sekretess enligt **17 kap. 4 § offentlighets- och sekretesslagen**. Detta prov återanvänds av Skolverket t.o.m. **2022-06-30**.



12. Choice of energy source

A tomato grower wants to extend the growth season in their greenhouse to be able to grow tomatoes early in the spring and late in the fall. To extend the growth season, the greenhouse has to be heated. As energy source, one of the natural resources available at the tomato grower has to be used. The natural resources that are available are wind, running water and heat in the ground.



Your task is to write a proposal where you recommend which of the energy sources wind power, water power or geothermal energy. The purpose with the proposal is that the tomato grower should be able to make a decision based on scientific arguments.

You will in the proposal:

• Use information from the fact sheet

Compare the three energy sources regarding the aspects energy, environment and general features. State the advantages and the disadvantages of the energy sources based on the three aspects.

- Take a view Recommend one of the energy sources.
- Use knowledge of physics Reason in two steps regarding three of the advantages and one of the disadvantages with the energy resource you recommend.
- Adjust your text Be objective and reason based on scientific arguments.





Fact sheet		Energy sources			
		Wind power	Water power	Geothermal energy	
	Energy	Produces 25 000 kWh/year	Produces 100 000 kWh/year	Produces 50 000 kWh/year	
Aspects		1 kWh of kinetic energy gives 0,4 kWh heat to the greenhouse.	1 kWh of kinetic energy gives 0,8 kWh heat to the greenhouse.	1 kWh of electric energy gives 3 kWh heat to the greenhouse.	
		Highest energy supply during fall and winter.	Highest energy supply during spring.	Highest energy supply during summer and fall.	
	Environment	The noise from the rotor blades is approximately 35 dB.	The noise from the turbines is approximately 30 dB.	The noise from the heat pump is approximately 40-55 dB.	
		The living conditions of air living species are affected.	The living conditions for aquatic species are affected.	The living conditions for soil dwelling species are affected.	
	General features	Produces approximately 20 times the amount of energy needed to build the facility.	Produces approximately 25 times the amount of energy needed to build the facility.	Produces approximately 15 times the amount of energy needed to build the facility.	
		Durability 20-25 years.	Durability 40-50 years.	Durability 15 years.	







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