

# Chemistry

## Delprov A2

engelsk version

Årskurs

9

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Elevens namn och klass/grupp

## 11. Natural materials or synthetic materials in school jerseys

Your school is buying school jerseys for all students. The members of the student council are discussing which material to choose, and ask all students to give their opinion before the council makes a decision.



Your task is to write a proposal for which material to choose for the school jerseys. You will recommend either a natural material or a synthetic material. The purpose of your proposal is that the student council will be able to make a decision based on scientific arguments.

In your proposal, you will:

- **Use information from the fact sheet**

Compare **both** materials from the aspects: production of raw materials, production of fabric, use and waste. Write down the advantages **and** disadvantages of the materials from **all aspects**.


- **Make a decision**

Recommend **one** of the materials.


- **Use knowledge of chemistry**

Give arguments in several steps about three advantages **and** one disadvantage with the material that you recommend.


- **Adapt your text**

Be objective and give reasons that are based on scientific arguments when you write your proposal.


Fact sheet		Natural material (1 kg cotton fabric)	Synthetic material (1 kg polyester fabric)
Aspects	<b>Production of raw materials</b>		
	Raw material	Plant fibres	Crude oil
	Process	To grow and harvest the cotton: 0.43 kg of chemicals, including fertilizers and pesticides.	To extract and refine the crude oil: 2 kg of chemicals, including glycol.
	Use of water	29 000 litres for irrigation.	0 litres
	Transport	Fossil fuel is used.	Fossil fuel is used.
	Use of energy	50 MJ	100 MJ
	<b>Production of fabric</b>		
	Spinning thread	70 g crude oil	140 g crude oil
	Pre-processing	55 g sodium hydroxide	2.6 g sodium hydroxide
	Dyeing the fabric	2 kg chemicals	0.2 kg chemicals
	<b>Use</b>		
	Laundry	Washing temperature: 60°C	Washing temperature: 40°C
	Durability	100 washes	200 washes
	Moisture absorption	High	Low
	<b>Waste</b>		
		Is biodegradable.  Can be burnt forming carbon dioxide and water.	Is not biodegradable.  Can be burnt forming carbon dioxide and water.

[illegible]

[illegible]



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