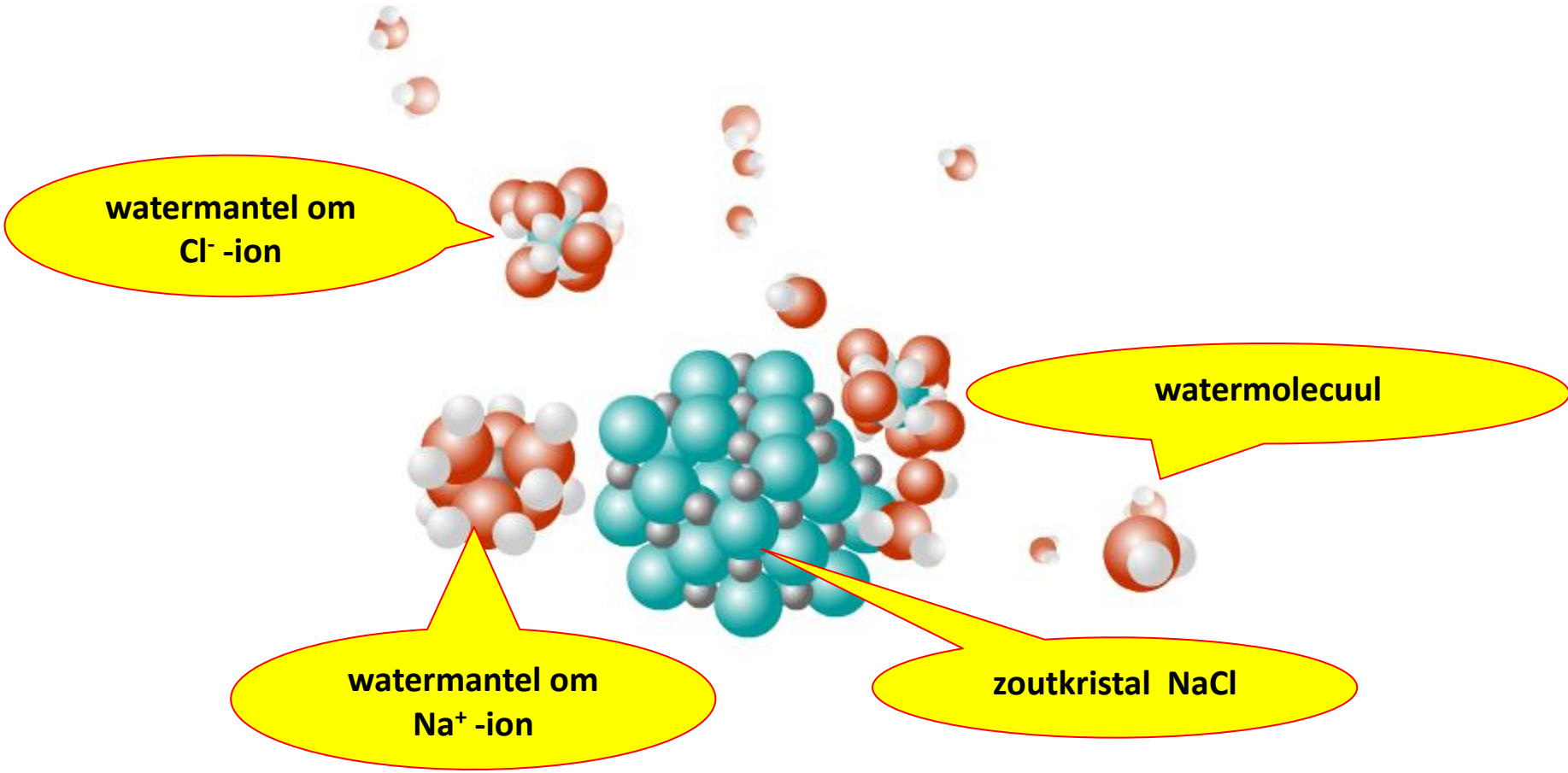
SUMMA College

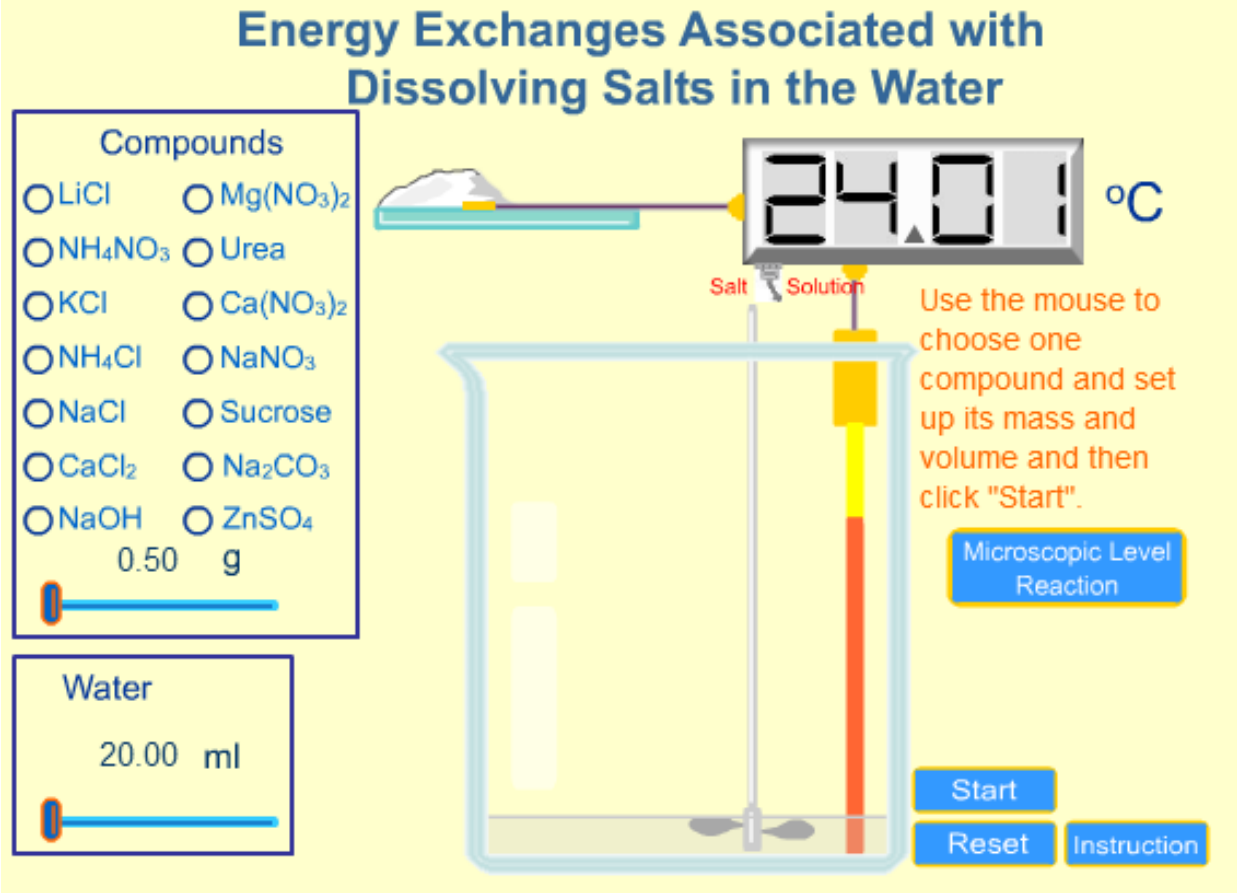
Haal het beste uit jezelf!

WINA

Oplossen


watermantel om
Cl^- -ion
watermolecuul
watermantel om
Na^+ -ion
zoutkristal NaCl

Oplossen


Energy Exchanges Associated with Dissolving Salts in the Water
Compounds
LiCl
Mg(NO3)2
NH4NO3
Urea
KCl
Ca(NO3)2
NH4Cl
NaNO3
NaCl
Sucrose
CaCl2
Na2CO3
NaOH
ZnSO4
0.50 g
Water
20.00 ml
24.01
°C
Salt
Solution
Use the mouse to choose one compound and set up its mass and volume and then click "Start".
Microscopic Level Reaction
Start
Reset
Instruction

Warmte-uitwisseling

5 g NaOH wordt opgelost in 65 g water in een joulemeter met een warmtecapaciteit van 120 J/°C

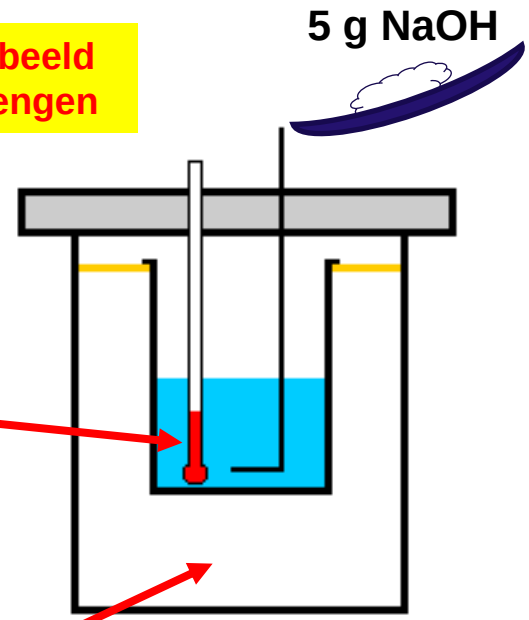
De begintemperatuur is 20 °C

Bereken de eindtemperatuur

NaOH
ℓ_{opl} = 1040 kJ/kg

$Q = m.\ell_{oplos}$

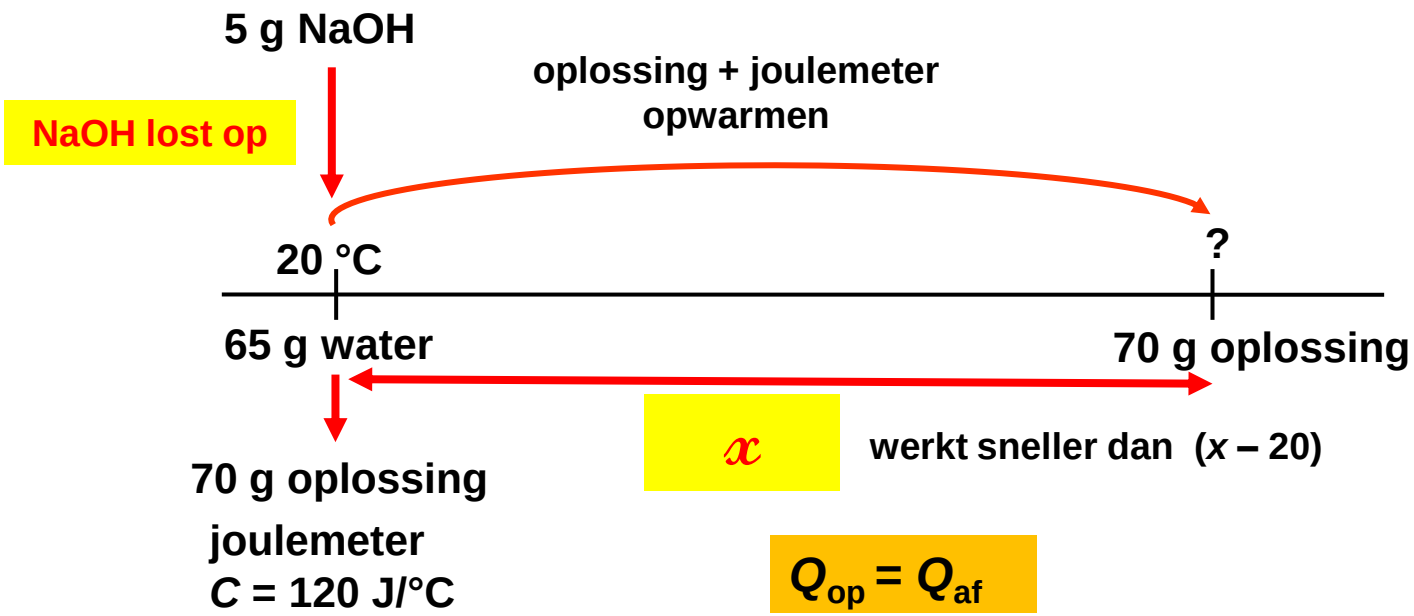
In beeld brengen



$Q = C.\Delta T$

De soortelijke warmte van de oplossing is gelijk aan die van water

Warmte-uitwisseling



$Q_{op} = Q_{af}$

$(m.c.\Delta T)_{oplossing} + (C.\Delta T)_{joulemete} = m.\ell_{oplos}$

$$0{,}07 \times 4180 \times x + 120x = 0{,}005 \times 1040.10^3$$

$$292{,}6x + 120x = 5200$$

$$412{,}6x = 5200$$

$$x = 12{,}6\ °C$$

$$T_{eind} = 20 + 12{,}6 = 32{,}6\ °C$$