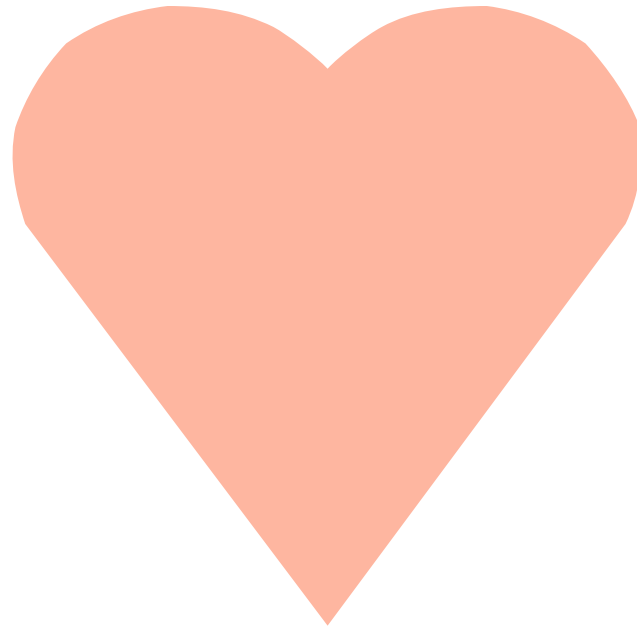


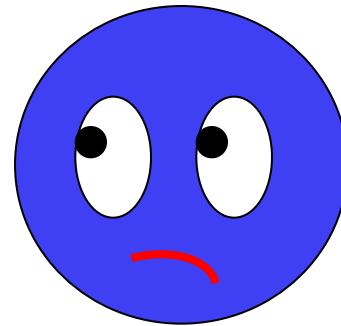
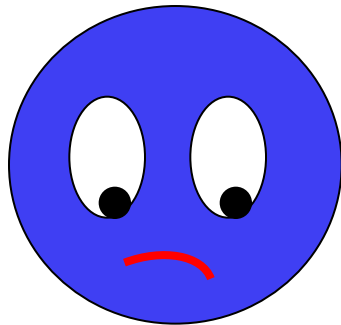
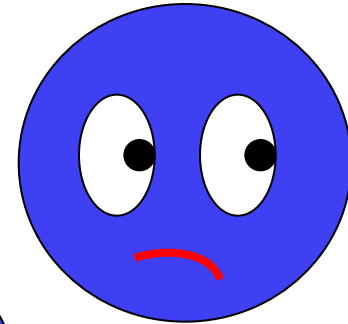
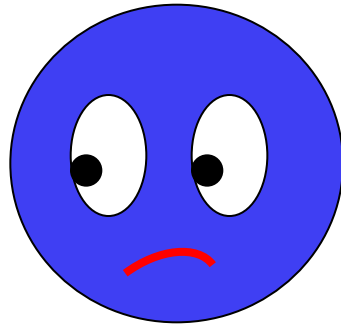
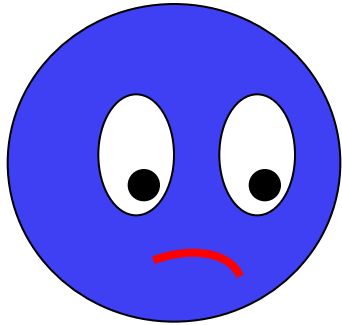
Hanna Pulkkinen

Fysiikan tarina

NELJÄNLAISTA
TYKKÄÄMISTÄ



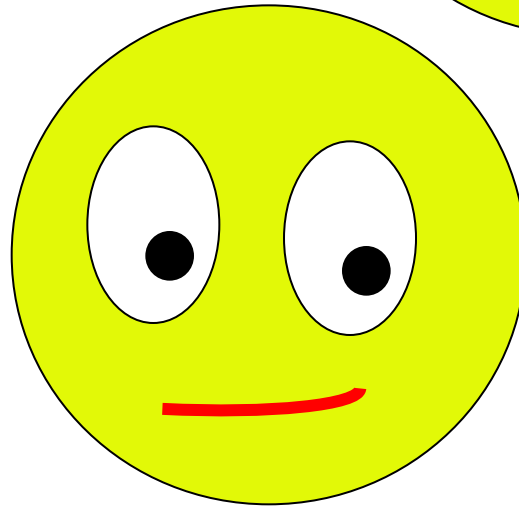
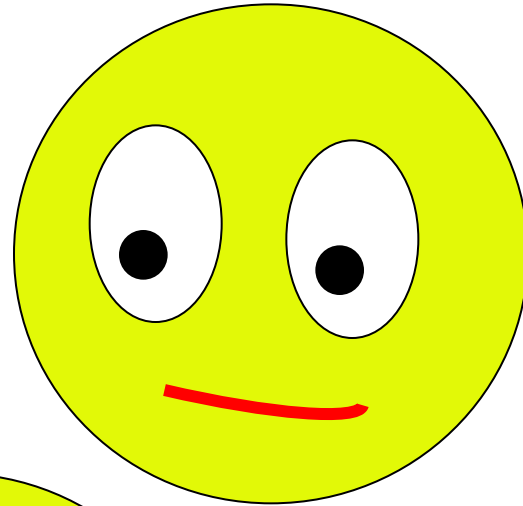
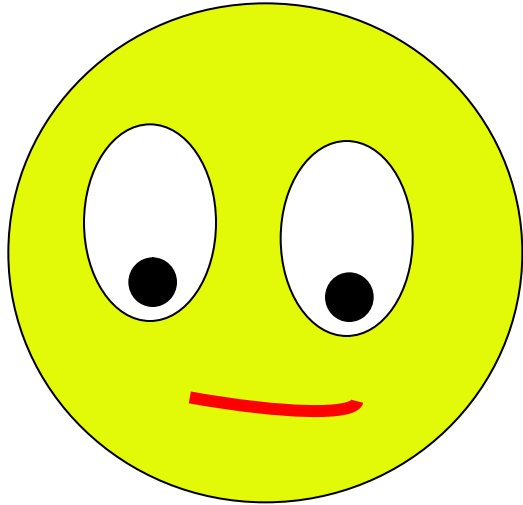
Ellut



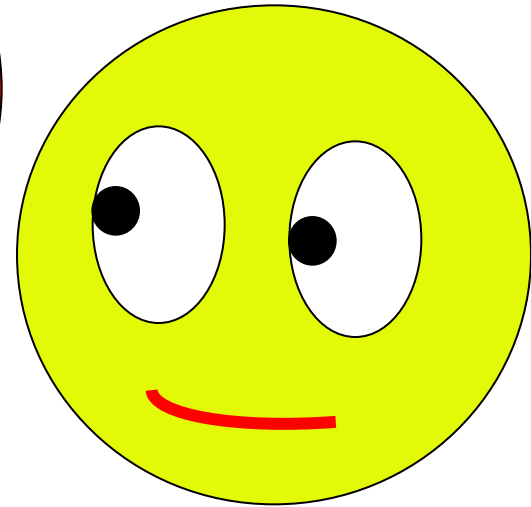
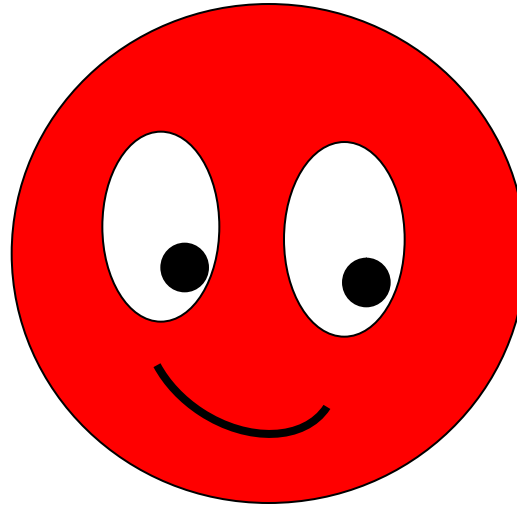
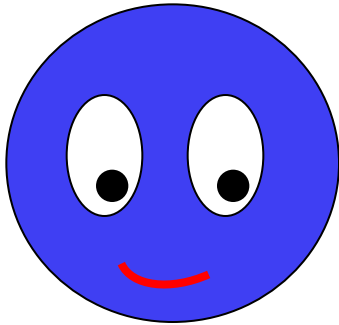
Protskut



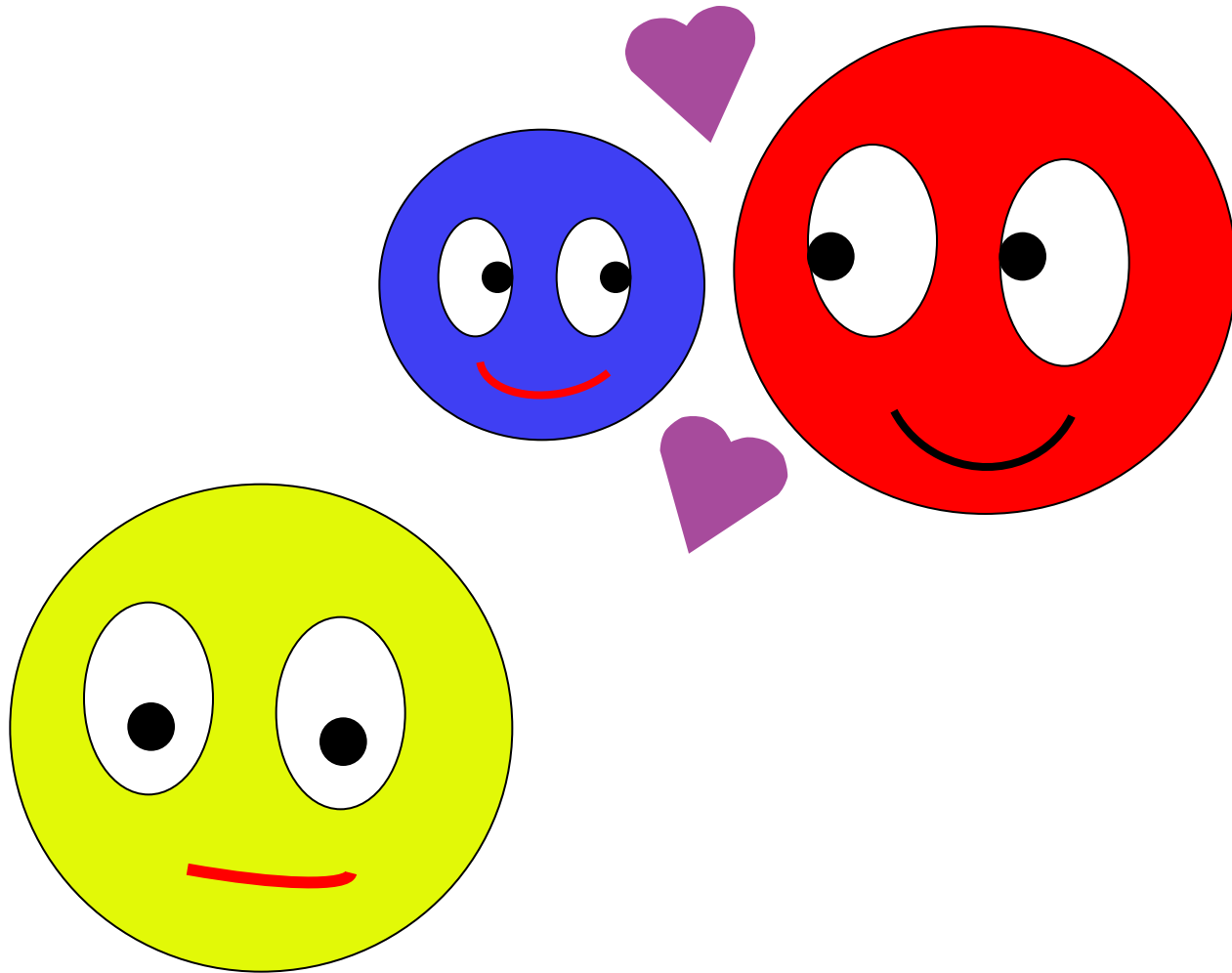
Neukut



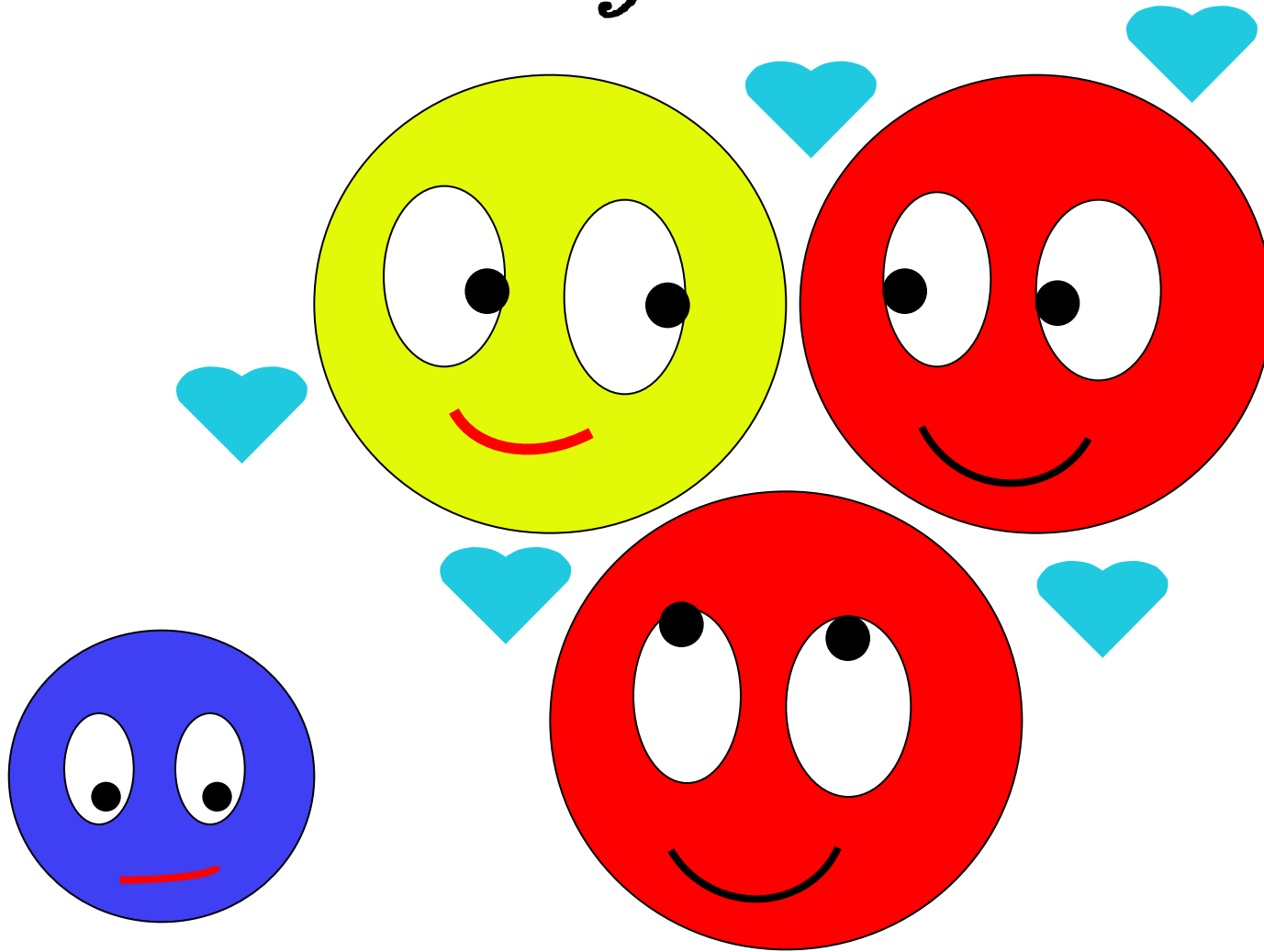
G-tykkääminen



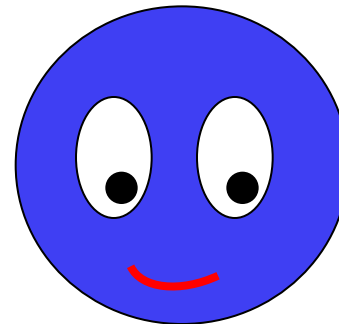
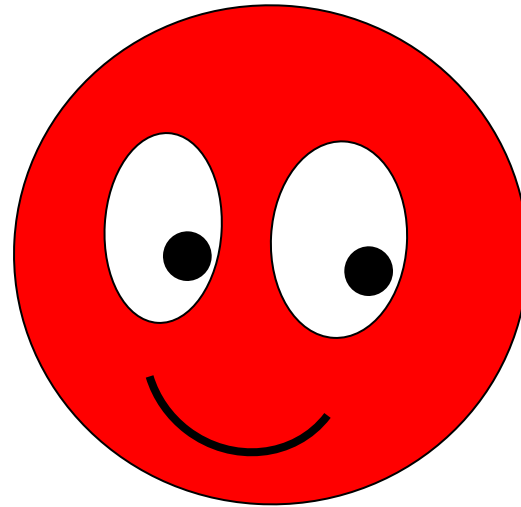
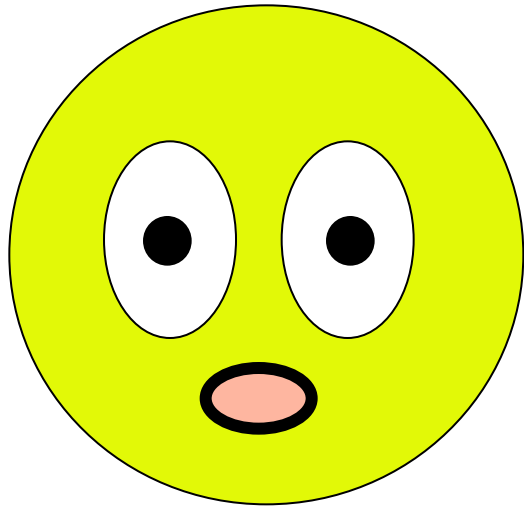
S-tykkääminen



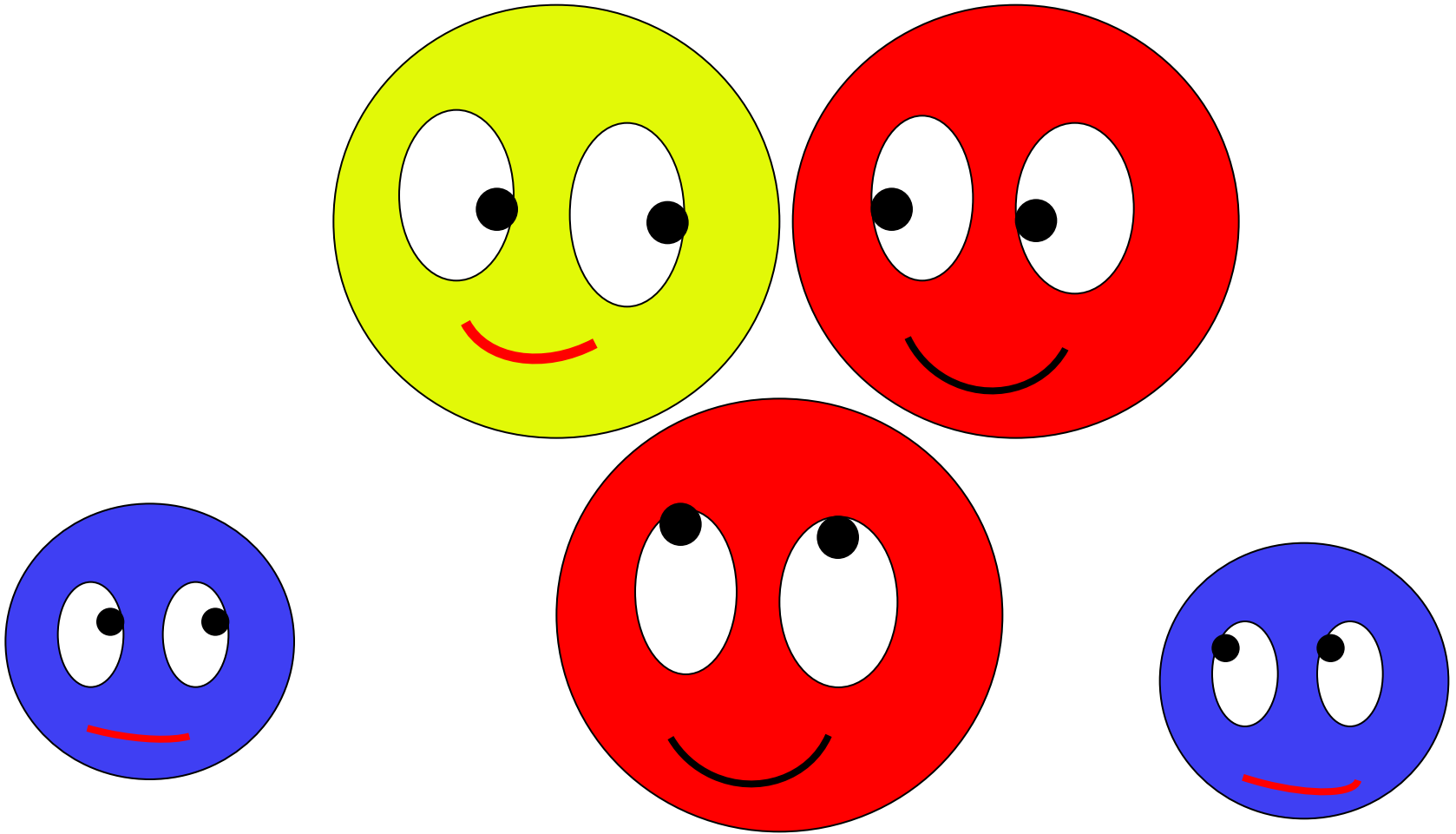
V^o-tykkääminen



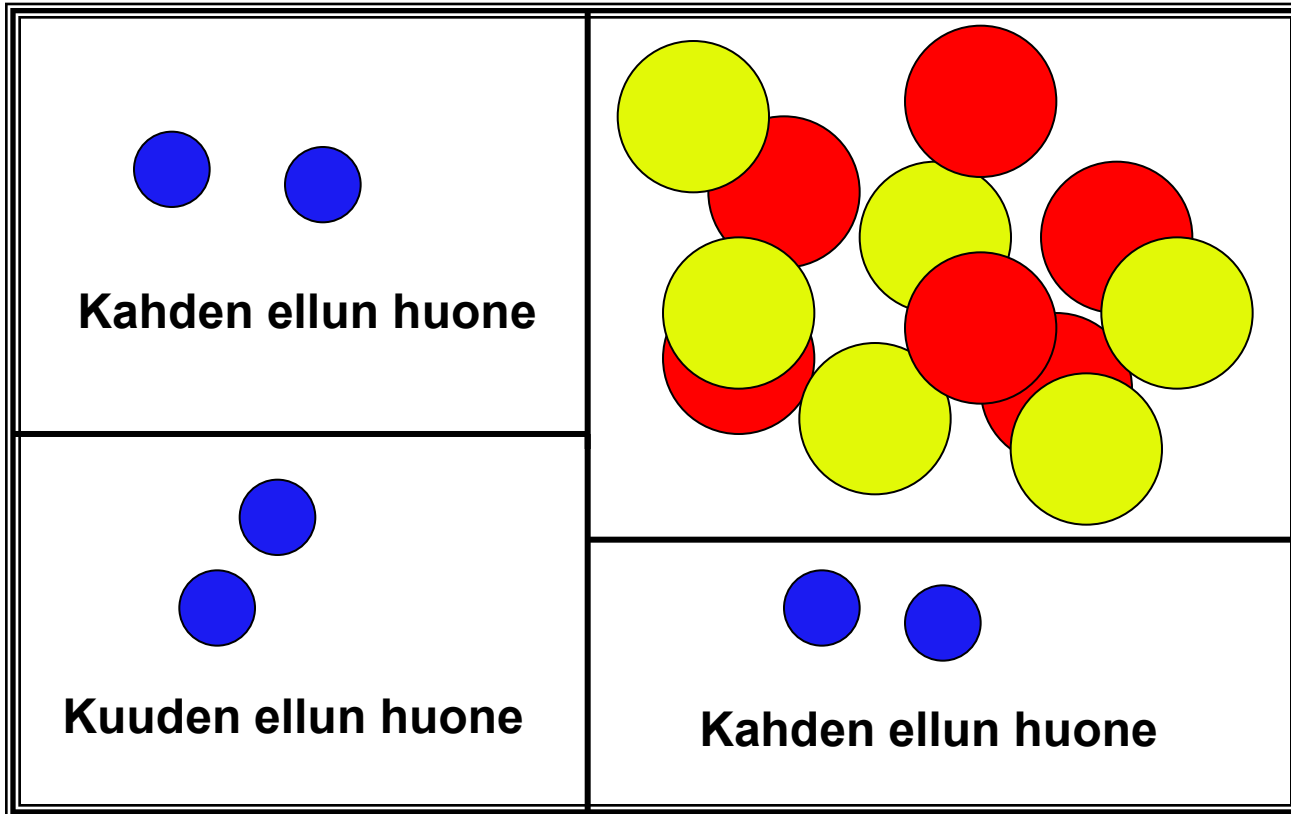
H-tykkääminen



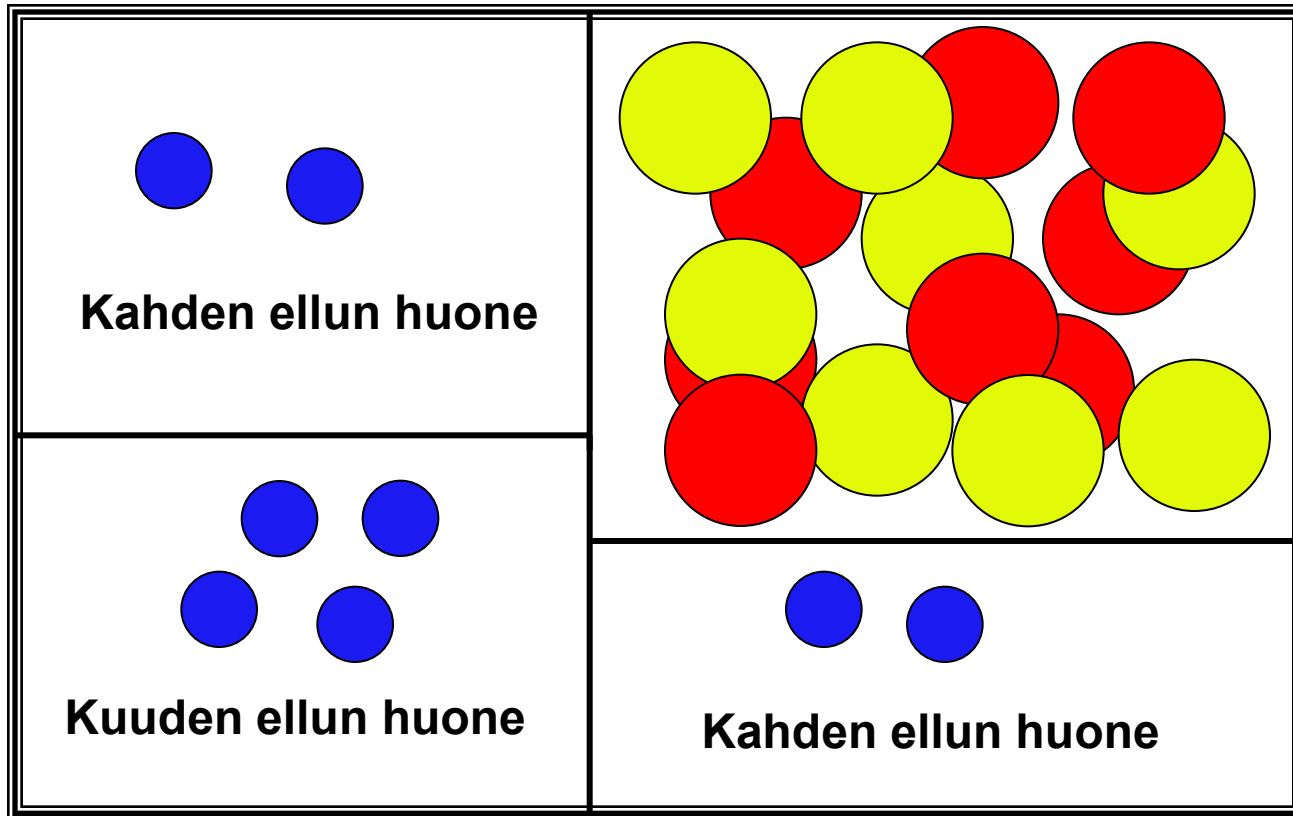
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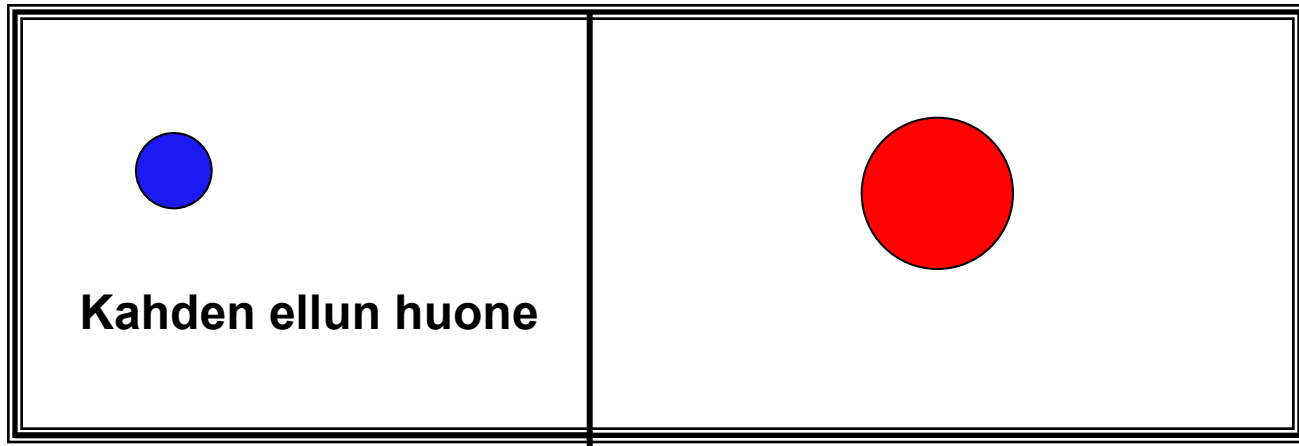
Hiili-perhe



Happi-perhe



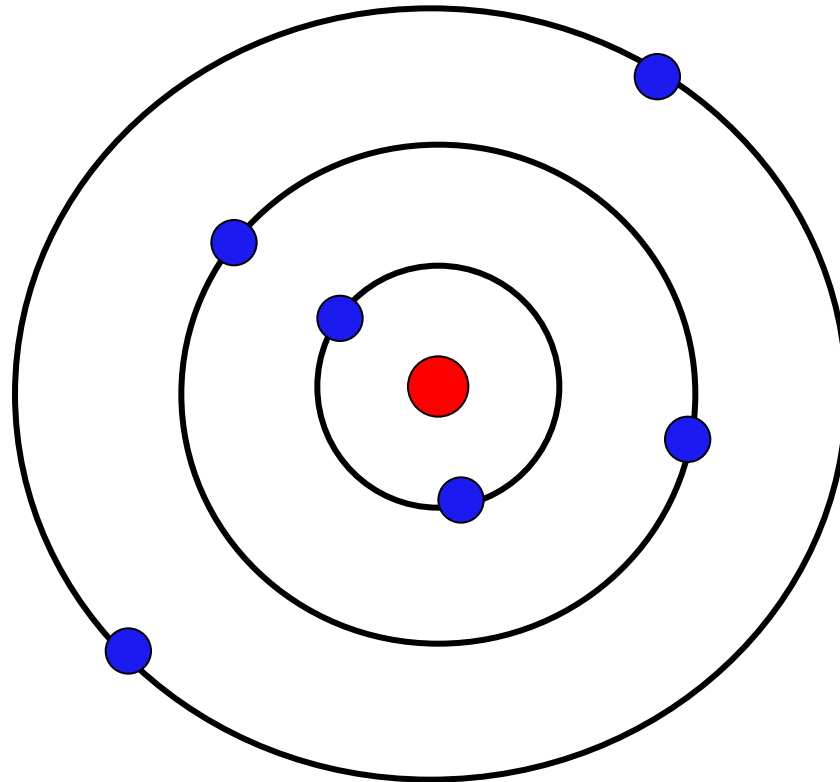
Vety-perhe



FYSIIKAN JA KEMIAN OPETTAMINEN TARINAN AVULLA

- + havainnollinen
- + mahdollisesti hauska
- + ei tarvita matematiikan pohjatietoja
- + ei vieraita termejä
- syntyy virhekäsityksiä?
- epätieteellinen?

Bohrin atomimalli



POHDITTAVA

- Mille ikäryhmälle tarina sopii?
- Pitäisikö kuulijalla olla jo pohjatiedot?