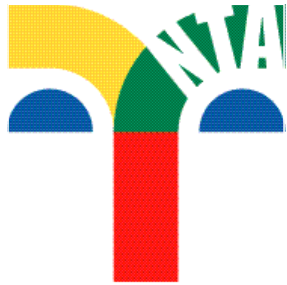


www.nta.kva.se



NATURVETENSKAP
OCH TEKNIK FÖR ALLA

NTA – Naturvetenskap och Teknik för Alla

Science and Technology for all

A school development programme
run by municipalities and independent schools in
Sweden

in cooperation with

KVA (The Royal Swedish Academy of Sciences) and
IVA (The Royal Swedish Academy of Engineering
Sciences)



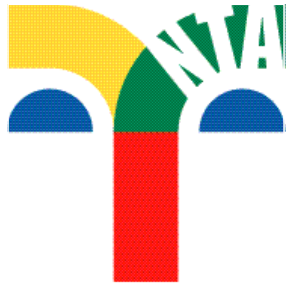
The aim of NTA:

Supports teachers in their efforts

to stimulate pupils:

- curiosity
- interest
- knowledge

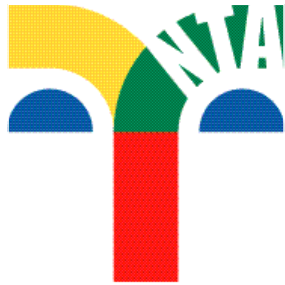
in science and technology



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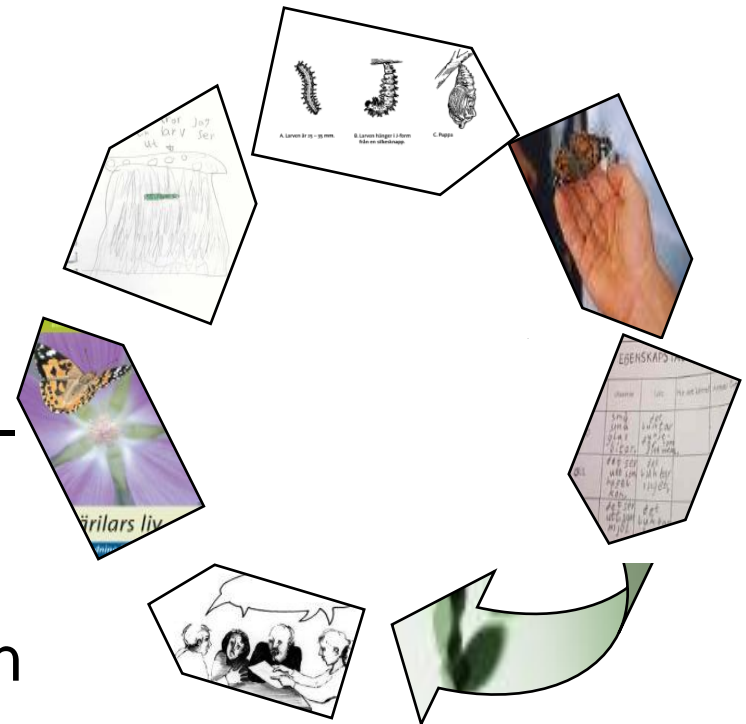
Learning support

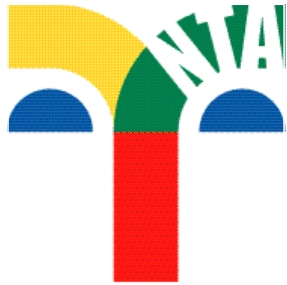


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Inquiry process – a core idea in NTA

- Asking questions
- Reviewing what is already known
- Investigating, "hands-on"
- Collecting information
- Discussing – try to answer the questions





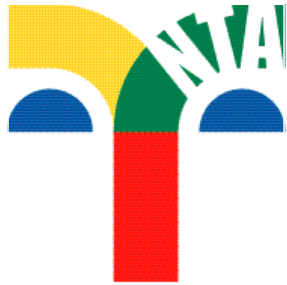
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Development support for the teachers

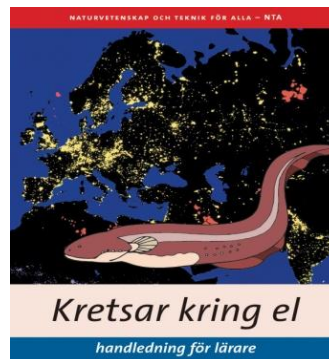
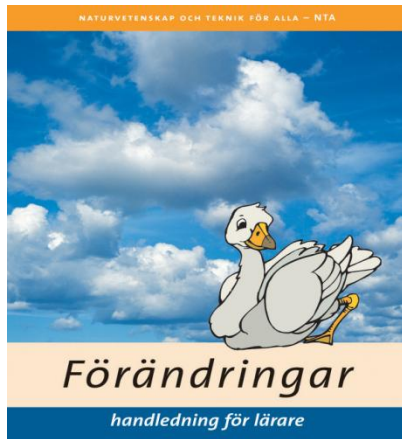


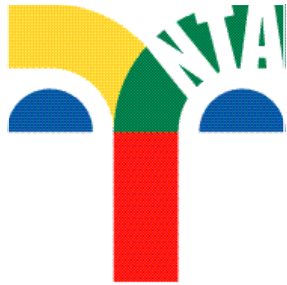
- Work with NTA-unit:
- Training one day/ unit for teachers
- Teachers and students guide
- Experiment materiel

Opportunities to share
classroom experiences
Collaboration with local
industry and university
Further training



**NATURVETENSKAP
OCH TEKNIK FÖR ALLA**



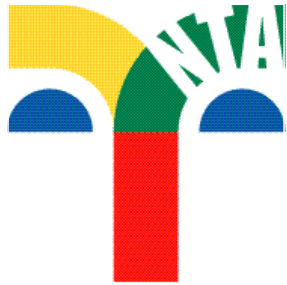


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NTA – a ready-made
concept for education?

Platform for continuing
training for teachers.

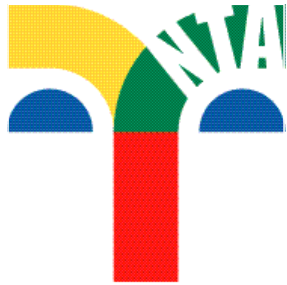
Courage to teach science and engage
in further professional development.



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NTA – units 6-9 years

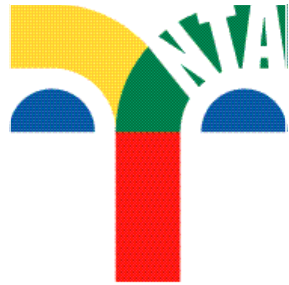
- Solids and liquids
- Comparing and measuring
- Changes
- Balancing and weighing
- Soils
- The life cycle of butterflies



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NTA-units 10-12 years

- Plant growth and development
- Electric circuits
- Chemical tests
- Motion and design
- Measuring time
- Food chemistry
- Floating or sinking
- Magnets and motors



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NTA – units 13-16 years

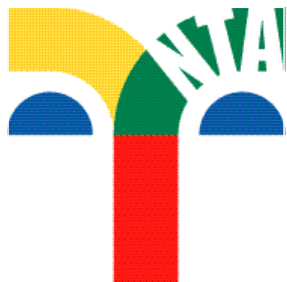
- Properties of matter
- ”Banbrytande teknik” (Railway technology)
- *Next year : Energy and sustainable development*



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NTA –members:
municipalities, independent schools

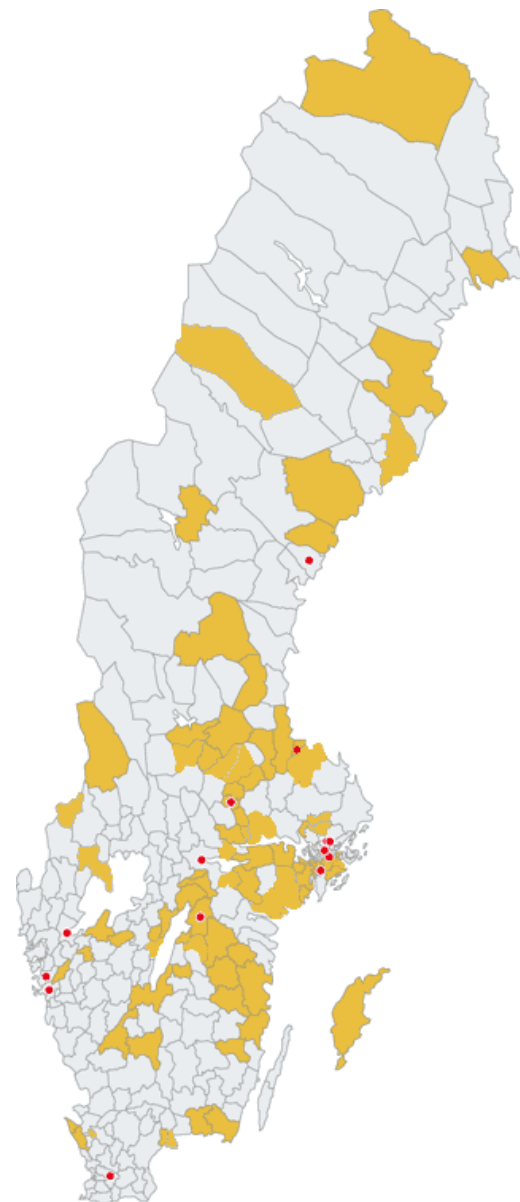
- Local political decision
- Sign agreement with NTA
- NTA coordinator
- Costs for coordinator, materials, teacher-training
- **Support for long-term school development**

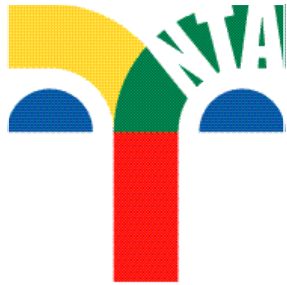


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NTA - members

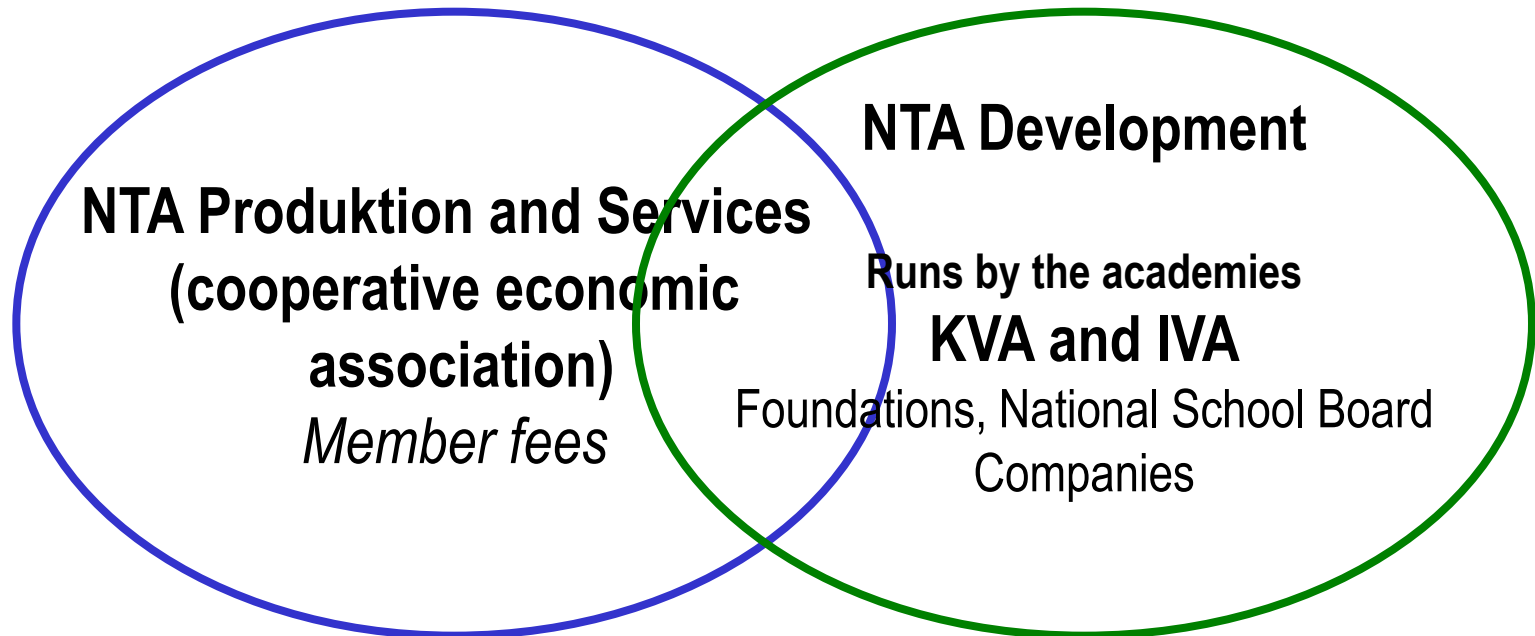
- **1997: 1 municipality (Linköping)**
- **2009:
87 municipalities, 10 independent
schools etc ,
88 000 pupils,
6000 teachers**

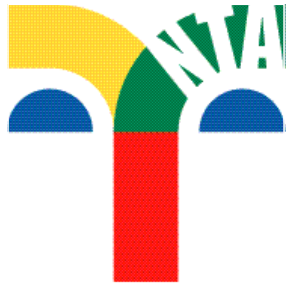




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Organisation (non-profit)





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NTA Development

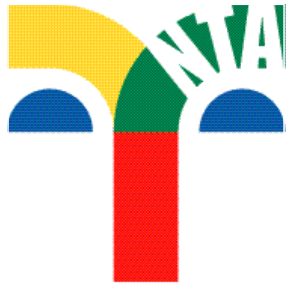
New units:

- *Mathematics (Pattern and algebra)*
- *Energy and sustainable development*
- *Experiment in technology "Future mission"*

Models for teachers development

Evaluations

Cooperation schools - companies



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Films ,evaluations, member list etc

gerd.bergman@kva.se