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## **CAPS content for Grade 7 science and technology teachers: Energy, energy transfer, heating, and electromagnetism**

This course is designed for teachers who now have to teach technology, or want more science background. It is based on the current NCS, which coincides well with "Term 3" content in the CAPS Grades 7 Natural Sciences and the Grade 7 Technology project of recycling scrap metal.

We do problem-solving with real equipment, and will see how the process skills of the CAPS can be turned into good questions and practical tasks.

The 2-day course deals with knowledge in science and technology, as well as the skill and knowledge of how to teach it. These two aspects of the curriculum are known as Subject-Matter Knowledge (SMK) and Pedagogical Content Knowledge (PCK).

**The Subject-Matter Knowledge** covers

- Renewable sources of energy, PE and KE. Heating. Conduction, convection and radiation as means to controlling energy transfers in systems.
- Magnets and magnetism. Earth magnetism, compasses.
- Electric circuits, how to increase current strength, magnetic field around a current. Solenoids and electromagnets.

**The Pedagogical Content Knowledge** (knowing how to teach this lot) covers

- Children's typical misconceptions about energy, heating and magnetism.
- Activities that build the concepts of energy, conduction, convection and radiation. How to develop the process skills listed in the CAPS, and ask good questions.
- Managing the technology-related projects: (a) Make a solar still or solar water heater (b) electromagnetic sorting

Assessment on the course is self-referenced assessment; in other words, your ending performance is compared to your starting performance.

**The course venue:** The RADMASTE Centre, Wits University Education Campus, Parktown (old JCE)

**Dates:** [redacted] July, with a repeat course on [redacted] August. A course day is 6½ hours of contact time, from 8:30 to 1:00 and 1:30 to 3:30.

**Cost:** [redacted] for the course. We need at least 14 people to make the course viable and we cannot take more than 22.

**Closing date for registration and fee payment is [redacted] for the first course.**

**For registration forms,** please fax your

name, school name, cell number, email, fax and telephone number

to Setlhare Science Curriculum Trust 011 717 3470

or email Setlhare at [peter.moodie@wits.ac.za](mailto:peter.moodie@wits.ac.za)