Activity book

Sponsored by BASF

Keyword:

Water purification/ion exchange

Age range:

13-16

Ability:

Differentiated materials to cover all abilities.

Lesson Time:

2 x 70 minutes

Attainment Target:

SC2 and SC3
KS3 - KS4

Cost:

£15.00

Source:

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KS3 and Suffolk Science

FIT TO DRINK

The pack starts with a data evaluation activity, looking at where excess nitrates come from, and why. The work sheet HW1 is most suitable for older pupils of higher ability, but an information sheet SAM1 is simpler.

The second activity tests a sample of water before and after treatment in an ion-exchange column. There are 2 levels for this, testing for nitrate, chlorine and sulphate ions in one, and adding carbonate ions for more able pupils.

The final activity provides information on other ways of reducing nitrates in water, and asks pupils to evaluate them and make recommendations.

At KS3 I have used the first and second activities to add practical work into the treatment of water beyond filtration. It provides a context for the testing of ions (chemical analysis) in Sc3.

At KS4 the same experiment has been used to show students problems caused by adding excess nitrates, and what problems there are in removal - Sc2.(Topic B6 'Managing the Earth', Suffolk Science). (Activity 3 might be used here if I had time).

TOPIC BOX

Includes practical to evaluate one way ion-exchange. Considers nitrate pollution of water supplies, problems caused and ways of improving water quality.