Thinking, Doing, Talking Science (TDTS) is a four-and-a-half day primary science teacher training programme developed for teachers of Year 5 pupils. The training is interactive, practical and enjoyable and provides strategies and activity ideas that can immediately into classroom practice without the need for extra expense and excessive planning. The training days are spread out across three terms and the training is delivered locally by primary science experts.

It's been thought provoking, inspiring, challenging and a great deal of fun! I now enjoy teaching science more than anything else - Thank you!

The training has given me a range of new strategies to engage children more effectively in science generally, plus lots of well exemplified practical lessons linked to specific areas of the science curriculum which I have been able to use and which my pupils have greatly enjoyed.

The TDTS approach focuses on the development of cognitively challenging, practical, and interactive primary science lessons. Teachers enable their pupils to think and talk about scientific concepts through dedicated discussion times, they provide pupils with a wide range of opportunities for creative investigations and problem solving and they focus the pupils' recording so that there is always time for practical science.

Since 2012 TDTS has been funded by the Education Endowment Foundation (EEF) and was first developed and evaluated during 2013-15 with 42 Oxfordshire primary schools in what is called an efficacy trial, to see if the approach worked. The EEF invests in evidence-based projects that focus on tackling the attainment gap.

The results for this trial showed that overall, the Year 5 pupils in schools using the TDTS approach made approximately three additional months' progress in science. The programme had a particularly positive effect on girls and on pupils with lower prior attainment (4 months' progress) and there were indications that the approach had most impact on pupils eligible for free school meals (5 months' progress).

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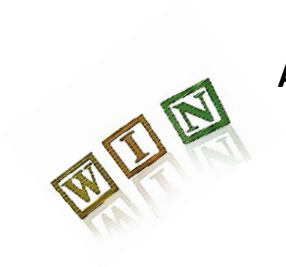

A Win–Win-Win scenario

The results showed that not only did the pupils attain more highly in science but that the approach also had a positive impact on their attitudes towards science, science lessons and practical work. Teacher feedback revealed that all participating teachers had made changes to their classroom practice as a consequence of the training and that they enjoyed teaching science more.

It has just been a truly amazing project. Thanks so much to all concerned. I've been teaching 15 years and have never felt so inspired and motivated to get up and go to work in the morning

"It's fantastic when our evaluations produce solid evidence that a particular approach has a positive impact on attainment. It's especially rewarding when they boost children's attitudes towards learning too. But the reality of robust educational research is that these results are the exception and not the rule." **Sir Kevan Collins, Education Endowment Foundation CEO 2011-2019**

As a result of the success of the efficacy trial, the EEF funded an effectiveness trial in 2016-18, using a 'train the trainer' model to see if the approach could still work at a national scale. This provided evidence that pupil interest in, and self-efficacy towards, science increased. The results were positive enough for TDTS to retain its status as a 'promising project' and the EEF and Wellcome have funded a retrial during 2021 – 2024. Adaptations have been made in light of the previous effectiveness trial and we are excited to continue with this important research to find what really works in primary science education.

Your chance to receive free Thinking, Doing, Talking Science training in 2022-23

Your school is being invited to be one of 180 schools taking part in the project. As part of the Randomised Control Trial your school will be randomly allocated to either the **intervention** group or the **control** group.

The children are more confident in talking about scientific ideas and they share more without worrying that they might be wrong. They love the practical sessions and the responsibility of planning it.

Thinking Doing Talking Science

What are the benefits to my school?

If randomly allocated to the **intervention** group, your school will receive

- Four-and-a-half days of high quality, evidence-based, locally delivered training for two teachers (with lunch and refreshments included) between September 2022 and July 2023.
- Hard copies of all TDTS resources and ongoing access to electronic resources online.
- A Resources Grant of between £400-£1000 (depending on the number of participating teachers) and £500 in the second year of the study (2023-2024 academic year).

If randomly allocated to the **control** group, your school will receive

- A financial incentive of £1,500: £1,000 for taking part in the first year of the study (2022-2023 academic year), and £500 for participating in the second year of the study (2023-2024 academic year).

What will be expected from my school?

- Schools in the **intervention** group will commit to allowing two teachers to attend all the training sessions. Participation will not create additional workload, as TDTS strategies are slotted into existing science lesson plans, building on current practice.
- Schools in both the **intervention** and **control** groups will commit to facilitating science assessments for year 5 pupils (and year 6 pupils in the second year), together with pupil and teacher surveys. A small number of schools will be invited to take part in optional case studies.

Is my school eligible to take part?

To take part in this trial:

- The school must have a minimum of one full class of Year 5 pupils (not mixed year classes).
- The school must not operate a two-year science curriculum that involves Year 5 pupils (i.e. either Year 4/Year 5 or Year 5/Year 6).
- The school will allow all Year 5 teachers to be available for the 4.5 days of training. If a school only has one Year 5 teacher, another teacher (ideally the science co-ordinator) would also need to attend the training.
- The school commits, wherever possible, to keeping the same teachers in Year 5 for both 2022-23 and 2023-24 academic years.
- The school or individuals involved have not been involved in the previous trials of TDTS, been trained in TDTS or taken part in the pre-trial. If the school is part of a multi-academy trust (MAT) then none of the schools within the MAT have taken part in the pre-trial.
- The school is not involved in the EEF Stop & Think trial or the EEF Focus4TAPS trial.

Thinking Doing Talking Science

The children have a 'buzz' about science - very confident to express opinions, speculate and give justifications as to why they think

Project Funders the Education Endowment Foundation (EEF) and Wellcome Trust

The EEF is an independent grant-making charity dedicated to raising the attainment of pupils in English primary and secondary schools by challenging educational disadvantage, sharing evidence and finding out what works.

This project is jointly funded by the EEF and Wellcome Trust as part of the Improving Science Education grant partnership.

For more information, or to register your interest, please contact Science Oxford at tdts@scienceoxford.com