

Stop the Spread...

■ Jeremy Thomas

Abingdon-on-Thames is a town surrounded by some of the UK and Europe's top research establishments. Abingdon School is committed to promoting STEM opportunities, especially through funding the Abingdon Science Partnership (ASP). This allows access to pupils from a variety of schools, as well as science staff, to a purpose-built laboratory, making it an ideal organisation to pilot Practical Action's 'Stop the Spread' STEM challenge, which can be used to gain a CREST Discovery Award.

CREST and Practical Action

CREST Discovery Awards fit at the transition between the inspiring Star Award programme for pupils aged 7-11 and the more demanding Bronze, Silver and Gold Awards for pupils aged 11 upwards. Activities that can be carried out to gain a CREST Discovery Award are designed to be completed in a few hours and can be found on the CREST website. They can be delivered either as a Discovery Day package or as an ongoing science club activity. Being able to gain a CREST Award in a very short time increases pupils' engagement and interest in STEM subjects and also provides them with

opportunities to develop important complementary skills.

Practical Action has developed many activities suitable for Discovery Award projects, which can be found at practicalaction.org/CREST-Discovery. Having tried a number of them, I would thoroughly recommend them to other teachers, especially given their strong links to practical, development issues with cross-curricular benefits. *Stop the Spread* was developed to highlight issues linked to the tragic spread of preventable diseases through poor hygiene and sanitation in some countries. It does this through a combination of learning about disease; consideration of poor hand-washing practices; and design and evaluation of model hand-washing devices. It incorporates aspects of geography and PSHE, as well as science and design and technology (DT). Resources can be downloaded from the Practical Action website at practicalaction.org/stop-the-spread and a free poster can be requested.

Stop the Spread

The activity starts by discussing the United Nation's 'Global Goals', or Sustainable Development Goals, supported by well-designed slides and a teacher booklet. Pupils compare diseases, the ways in which they spread and differences in hygiene practices in different countries. This is reinforced with fun, practical activities, including a card game and a demonstration of the transmission of simulated



contaminants (Vaseline and glitter) at a mock party. At this point, the importance of simple hygiene becomes clear and the issue of ease of access to water for washing can be discussed.

The pupils then work in teams to design both a practical hand-washing device and an education programme for an imaginary school in Kenya. This gives all pupils a chance to contribute through various different skills and interests.

On completing their designs, the pupils build and test their devices, with resource lists and simulated material costs all provided in the resource pack. Some preparation is necessary, with sufficient plastic bottles and access to construction kit pulley systems being particularly useful.

Finally, the pupils must present their ideas to an audience, which can be simply the rest of the group, or invited guests if that can be arranged.

Using Stop the Spread with pupils

ASP tested *Stop the Spread* with two groups. The first consisted of six Year 8 (age 13) boys, who carried out a pilot test, observed by Practical Action's Head of

...a CREST discovery Award activity from Practical Action

Education. The second group was a combined Year 5 and 6 class (ages 10-11) of 28 pupils from a small, rural primary school, working in the ASP's lab for a whole day.

The pilot was an excellent opportunity for the lead teacher to practice using the resource, as well as for Practical Action to obtain feedback from both teacher and pupils. The boys were not overly keen to produce the educational resource and focused almost their entire attention on constructing the hand-washing device. Some teacher direction would therefore be recommended here, assigning specific roles to each member of a team from the start. However, the resulting devices each had unique aspects, such as re-using the water in a school garden, or gathering water from guttering as well as direct rainfall.

'I really enjoyed working out which kind of pouring system to use and what resources we should use to build it. A great project.'

'The three skills I used the most were building models, research and teamwork.'

'Today has been brilliant...it doesn't feel like a school day.'

'I didn't realise before how important it is to wash your hands, and that children in Kenya can get diseases that can kill them if they don't do it.'

The primary class pupils were studying levers and pulleys in science and were partnered with an African school, making this an ideal project for them. Again, every team constructed a successful and

innovative hand-washing station, and also produced excellent ideas for educational resources this time. A parent volunteer accompanying the group revealed that she was a GP and would use the ideas in her own hygiene lessons in future!

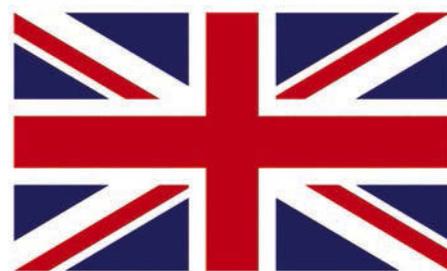
STEM and development Issues

In conclusion, this activity is an excellent way to promote applications of STEM in a broader and non-stereotypical context. It is well resourced and supported, making delivery relatively straightforward. Pupils are engaged by it, and completing the Discovery Passport required to gain an Award provides a focus for reflection on additional skills. The final slide in the resource pack provides a fantastic illustration of how simple technology, based on available materials, has been used in the design of a 'tippee tap', which is now saving countless lives through preventing diarrhoea in developing countries. This slide should be kept until the end, revealing to the pupils that the best ideas are often the simplest!

Stop the Spread materials raise awareness of Practical Action's 'Safe Pair of Hands' appeal, which is being backed by the UK Government. 'Safe Pair of Hands' will provide access to clean water and hand-washing facilities to communities in Kisumu City, Kenya, with a focus on young children. The UK government will match any donation you make, pound for pound. Details of this project and how to support it can be found at: practicalaction.org/safepairofhands



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