



Isn't science fun?

A summary of the report into
the introduction of the
CREST ★ Investigators scheme



Report written by:

Dr John Crossman
Drs Mark Van Vastenhoven

Evaluate
consultation and evaluation services

*Summary compiled by Annette Smith, Director of Regions, British
Science Association*



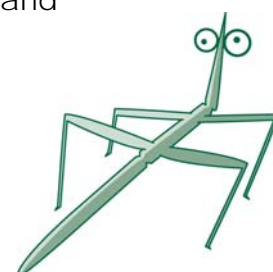
Introduction

This summary of the findings and recommendations of the Evaluate report into the CREST ★ Investigators award scheme has been written by Annette Smith, Director of Regions at the British Science Association and approved by Evaluate. It puts forward the major findings and recommendations of the Evaluate report, which is available from the British Science Association in pdf form.

Summary of findings

CREST ★ Investigators is a science and technology award scheme for children aged 5 - 12 years, which aims to increase interest in and engagement with science. It was introduced in September 2007 as a successor to the British Science Association's "Young Investigator" and "First Investigator" schemes. Principal findings from the evaluation are:

1. The CREST ★ Investigators scheme offers an excellent learning experience and excellent benefits for children. It has a bright future with real potential to influence the lives of many children and improve perceptions of and attitudes to science.
2. The scheme is successfully meeting all its stated aims. It delivers effective science activities enjoyed by all children who take part. They learn generic and scientific skills and increase their knowledge and understanding. The scheme engages children in science and technology, and encourages investigating and working together. The scheme outcomes meet the expectations of users.
3. Organisers run CREST ★ Investigators mainly to enhance the learning experience of the children or to promote science. It attracts a wide spread of children across ages and abilities and motivation with some skew towards the well motivated.
4. The centres running CREST ★ Investigators in the survey sample are predominantly schools, distributed throughout the UK with high concentrations in the South East of England and in South Wales. The findings suggest that a total of 20,000 children and nearly 2000 adults were engaged in the scheme at the time of writing the report (July 2008).
5. The scheme attracts a wide range of schools including small primary schools in areas of social disadvantage, rural primary schools and private preparatory schools. The scheme appears to function well in all of these locations. Home educators and private organisations also use the scheme





Further findings are noted below:

- The scheme has been implemented with great success and only a minimum of problems, such as some centres reporting late delivery of some or all of their packs.
- The redesigned materials enjoy a high level of approval with their intended audience: 64% found them better than the previous scheme, only 20% were at all critical.
- The materials also appear suitable for a wide range of children from differing cultural backgrounds.
- No significant differences in reaction to the materials were found between boys and girls doing the activities.
- 86% of centres considered the materials either very reasonably or reasonably priced.
- Useful suggestions included refining the structure of the scheme and improving the website.
- Observations during centre visits showed that the materials were used effectively in the way intended by nearly all organisers. Children were encouraged to think about and discuss the activities and the results they obtained and worked well in groups.
- Organisers with a real understanding of science appeared better at interpreting and adapting the materials. This may be overcome with better guidance and explanation of the rationale of the new scheme.
- Of centres, which had experience of the previous schemes, 80% were in favour of the new scheme. The positive statements included appreciation of the extra support, details about resources and guidance, the appeal of the materials, stories, certificates and Star Logs, accessibility and challenge and the refreshing new ideas.

The benefits for the children included:

- Enjoyment, fun, excitement, raised interest in science
- Children using scientific language and developing research skills
- Increases in scientific knowledge linked to everyday life
- Children with poorer skills levels blossoming
- Children motivated to find out more - just to explore!
- More confidence in working in groups and communicating together
- Sense of achievement, raised confidence and self esteem
- Children taking ownership of activities
- Children and parents sharing experiences
- Children more positive about science and prepared to consider a career in science.

Two centres reported improvements in SATs results for the children who had taken part in CREST ★ Investigators or its predecessors and further investigation of this outcome is advised.





Benefits for the organisers included:

- increased confidence in teaching science
- less preparation required thanks to the quality of the materials

The major challenges in using CREST ★ Investigators were as follows:

- Getting children to work collaboratively and helping them develop new skills, including risk taking.
- Time and resources.
- indications that schools do *not* intend to progress through the awards but rather run the same level of award for successive cohorts of children

The identified benefits of CREST ★ Investigators are in line with the well-documented positive findings for other out of school hours learning activities, including increasing motivation, confidence and self-esteem, and promoting communication skills. There was an excellent atmosphere and ethos in the clubs visited.

Methodology

A range of techniques was used to gather this information.

Questionnaires

A baseline questionnaire was distributed to all of the centres using CREST ★ Investigators. A main questionnaire was then circulated, prompting 110 replies of which 38 were from the baseline survey.

Interviews and observations

- Children were observed carrying out activities and then interviewed in small focus groups.
- Parents were interviewed as individuals and in groups
- Telephone and face-to-face interviews were held with a range of other stakeholders. These included senior personnel from the scheme's sponsors GlaxoSmithKline, the British Science Association and SETPOINTS.





Recommendations

The evaluators made the following **strategic** recommendations to the British Science Association:

- continue to develop the scheme using the principles now well-established
- investigate concerns about the Megastar Award, especially the number and type of activities and the degree to which centres plan to progress and use that award
- provide centres with enhanced information (via the website) on how best to achieve the aims of the scheme and provide references to how clubs can be funded
- promote collaboration between primary and secondary schools and the involvement of secondary school students as ambassadors in primary clubs
- promote the scheme to schools as an excellent example of quality and good practice in study support/out of school hours learning

In the longer term the British Science Association should consider:

- investigating further the link between engagement in the scheme and raised attainment in SATs
- targeting potential centres that are not schools, for example the supplementary schools networks, uniformed organisations and home educators
- tracking developments in science curricula and general education policy across the four countries of the UK and considering whether promotion needs to be tailored to the concerns of educators in each country
- adopting strategies to encourage adult ambassadors to become involved

The evaluators also made the following **process** recommendations:

- ensure that the safety information and information about encouraging scientific discussions work well in the context of parents using the materials at home
- reduce the number of activities needed to get an award for all three awards
- consider whether concerns about differentiation and rewards can be addressed
- encourage further involvement of ambassadors, secondary schools, company ambassadors, and companies
- consider providing extension sheets which would reinforce the recording and conclusion drawing aspects of science (the British Science Association considers that this is not within the ethos of CREST ★ Investigators)
- enhance the web site to give support to centres, as a tool for activities and for guidance for organisers





In the longer term the British Science Association should consider:

- developing further opportunities to celebrate achievement
- clarifying whether activities other than those published may be included in order to gain accreditation (the British Science Association has done considerable work in this area and the accreditation materials are now well developed and used)
- exploring, as the scheme develops, whether the expectations of children about science in secondary schools is are met

In conclusion, the evaluation process has been useful and constructive and the findings will aid considerably the future development of CREST
★ Investigators.