Projectnumber: 044097.
Project Acrony: EYSCTS.
Project title: “Science is Cool”.
Instrument: Specific Support Action.
Thematic priority:
“stimulating interest in science education for young people and to create general awareness for science among the general public”.

Final report on project:

“SCIENCE IS COOL”
Final activity report.

Period covered from May 1, 2007 to January 31, 2008.
Date of preparation: March 2008.
Start date of project: January 27,2007 (informal); May 1,2007 (formal)
Duration: 9 months.
Project coordinator: Drs. Kees Schippers.
Organisation: Media & Education Productions bv.

Publishable final activity report.

This project is aiming at the production of 2 x 30 minutes televisionprogrammes on the European Young Scientist Contest, which has been held in Valencia on September 14 – 19,2007. The title of the programmes is "Amazing Minds" (working title "Science is Cool").
The aim of the programmes is to stimulate the interest in science education for young people and to create general awareness for science among the general public.
This project is an initiative of the independent television production company Media & Education Productions in the Netherlands.

The participants/distributors of the televisionprogrammes are:

1. Teachers TV in the United Kingdom.
2. Swedish Broadcasting Corp. in Sweden.
3. Estonian Television in Estonia.
4. Latvian Television in Latvia.
5. Czech Television in the Czech Republic.
6. Polish Television in Poland.
7. Channel 22 in Malta.
8. RAI in Italy.
9. SWR in Germany.

These broadcasters will produce their own language version of the programmes. The participating broadcasters were involved in the editorial development of the programmes, the off-line viewing and final approval. According to "best practice" experience within the European Broadcasting Union (Education Group) the production of the television programmes was organised by Media & Education Productions.

The concept of the programmes was to follow four winners of the national European Young Scientist Contests in their respective countries, showing their researchprojects.....and their motivation! We will follow the candidates to the Contest in Valencia, which will give an extra tension to the programmes. Will they be winners or not?

The selectioncriteria for the national winners and their researchprojects to be presented in the programmes are:

- ∞ Projects from four different countries,
- ∞ Preferably young people (15 – 18 years),
- ∞ At least one girl,
- ∞ Research projects and the stories of the winners should be attractive for television production. (visible subject)

After research of all the projects by contacting National Coordinators and the national winners we selected four potential candidates and researchprojects:

Amazing Minds Final Student Selections

These are our selected students/projects for the amazing minds series of 2 x 30 minutes documentaries.

1. Energy from maize straw - Austria

Name:	**Martina Hafner**
Age:	**19**
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Telephone:	**0699/11795870**
Mobile:	
School:	HTL Braunau technical college
Mentor:	Dr. Josef Wagner HTL Braunau Osternbergerstraße 55 5280 Braunau 07722/83690-239 www.htl-braunau.at

A really 'eco friendly' project – recycling organic matter more efficiently to produce a new product, methane, that wasn't viable previously. She went through a range of biochemical solutions to extract the best combination, and then went further to discuss the practical implementation of her research with local representatives and organisations.
Lots of hands on experiments in the science labs at HTL Braneau – and conversations with her friends at the college and hopefully her mentors.

Project abstract:
This project focuses on maize straw and its possible uses in generating energy. Every year large quantities of maize straw are left over on farms without there being any effective use for it. The high fibre and cellulose content in particular make it difficult to generate energy from it, something that calls for an appropriate process. The reason is that bacteria attack the maize straw only slowly, which in turn slows down the conversion to methane. This is precisely where this research comes in, with the aim of developing a new treatment process for materials rich in cellulose.

A simple test unit was built to begin with to optimise the energy generation process. Then two pre-treatment methods which both enable more efficient generation of biogas were developed. The test results show quite clearly that the pre-treatment of biogenic materials has a positive effect on the gas yield in biogas production.

2. Motorbike Slipper Clutch – Czech Republic

Name:	**Valihrach Josef** **Nevídal Tomáš**
Age:	**18 yrs** **19 yrs**
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Telephone:	
Mobile:	
School:	**Renata Pilarová** **Blanka Chytilová** **Premysl Pokorný**

A great project, we hope to see more than a few motorbikes! This will look really cool if we can get the boys at the race team venue, and see some really high tech science. It will be great to see the data gathering at a track, with the bikes, the other engineers, and conversations, perhaps with Jakub Smr□ and/or Ji□ Tr□ka from the team. Also we hope to speak to their teachers Renata Pila□ vá, Blanka Chytilová, and/or P□ mysl Pokorný.

Project abstract:
'This project is about new race slipper clutches for Ducati motorcycles and its racing use. We decided to work with Ducati, because this Italian motorcycle brand and the people working with it are very unique and always bring along a lot of passion. We studied the preparation of the new specifications and the testing of it. During our work we got into the fascinating world of racing and cooperated with its main actors. Thanks to that we got very special materials and points of view. Nowadays we use them in our home race team, and we are very proud to be part of the achievements of Jakub Smr□ who races in the Ducati NCR team.'

3. Water Rockets - Italy

Name:	**Maini Gabriele**
Age:	**19**
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School:	**Politecnico di Milano**

We chose this student/project for a variety of reasons. The subject matter is visually appealing. We should get some great pictures of rockets being designed/constructed and fired. Gabriele seems to have a good understanding of how observational data can be used to describe complex physical situations, that don't lend themselves to easy mathematical formulae. There are a variety of elements to his project, the data gathering, the analysis, and finally predictive conclusions. All practical examples of good science. We hope to speak with his tutor/mentor for the project, as well as some of his friends from school. It should be great to see him in Valencia demonstrating his rocket to the panel.

Project abstract:
'*How can the variation of mass due to the variation of pressure in the rocket's tank be studied?*
In a water rocket both air and water are kept in a tank (obtained from a PET bottle), and air is forced in the tank under pressure.
This is in order to assure that when the rocket is freed from the ground, the air will start expanding, pushing water out from the tank. As the water flows out from the tank, a thrust is produced, because of the third principle of dynamics. When the velocity is equal to zero, the rocket inverts its direction, and begins a naturally accelerated motion until it hits the ground.
The point of zero velocity is called rocket's apogee, and represents the maximum height reachable from the rocket. The main evolution of the project in the future could be the generalization of the conclusions.'

4. Absorption of Chromium Ions – UK

Name:	**Anna Ressel**
Age:	**18**
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School:	**Cardinal Newman College**
Mentor:	**Dr Richard McCabe** **University of Lancashire** rwmccabe@uclan.ac.uk

An environmental project designed to reduce the impact of poisonous, heavy metal pollutants, produced as a by-product of many industrial processes.

Anna designed and tested an experiment to monitor the absorption of chromium ions from water. Chromium is a harmful pollutant which can often be found in water and designing an effective way to remove it would benefit the environment. She completed the research during a five week placement at the University of Central Lancashire as part of the prestigious Nuffield Bursary Scheme. She presented her research to number of judges, including Oxford professors, at the Royal Society last month and walked away with the top prize, a trip to Valencia in September to represent England against other winners from the European Union.

Anna said: "I was really nervous presenting my work at such a well known event and in front of such accomplished judges. Some of the questions they asked were really challenging but I managed to answer them.

"I was thrilled when I won, I never expected to get as far as the final let alone win a prize and I'm really excited at the thought of presenting my work in Valencia during the summer."

Project abstract:
'A method to remove Cr ions from water involves reducing Cr (VI) to Cr (III) using a metal oxide and photo catalyst, and an alumino silicate to absorb the Cr (III). This project was centred on developing a method to quantify Cr (III) and (VI) in solutions. An electron microscope and EDAX was used to prove the effectiveness of the alumino silicate in absorbing the Chromium, and UV Winlab and Dionex Ion Chromatography was used to design a method to determine unknown quantities of Cr ions.'.

The latter part of the documentary is all around the students meeting the other students in Valencia, to show the variety of all the projects, and students, as well as following our Fab 4, to see how they get on in the final competition – will any of ours win?
We hope to meet as many students as possible – and show some of the activities that the competition has given these national winners.
We will try and find out what the students think of each other, how scientists and science are perceived and valued in their own countries.
We hope to finish with where our students see their futures…

(It would be great to find out where they all are in five years!)

On request of several participating broadcasters, which national winners were not selected for the programmes, we decided to extend the recordings by adding additional shootings on the national candidates of the broadcasters. In the format of the programmes there will be a segment in which the broadcasters can insert their national candidates, which could be attractive for the national audience.

The production of the programmes started on 28-08-07.according to the following schedule:

Shootingd took place in Italy, Czech Republic, Austria, the United Kingdom and Spain (Valencia) from 28-08-07 until 019-09-07.

The postproduction of the project started from November 1,2007 until December 21,2007.
October 15 – 17, 2007 we had meetings with the director and editor to discus the footage, the editing, the various formats for the broadcasters etc.

We decided to produce two programmes of 30 minutes each with a recap in the beginning of the second programme. For Teachers TV we will provide, on their request, one programme of 54 minutes.

November 21 John Richmond (Commissioning Editor Teachers TV UK) visited the team to watch the off-line version of the programmes on behalf of the broadcasters. The Editorial Committee received the text of the programmes for comment.The report of John Richmond to the participating broadcasters was in summary "great programmes!"

On December 3, 2007 a viewing of the off-line version has been organised in the offices of the DG Research Communication, which was attended by Mr. Stephen Gosden, Mme Sofia Caira, Mme Anne Piret. The represenatives of the DG Research were very positive on the quality of the programmes. Several remarks have been made to improve the accuracy of the programmes, which will be changed in the final version of the programmes.

The broadcasting of the programmes in the various countries started from March 10, 2008 on in the United Kingdom, followed by the other countries according to their broadcasting schedules.