



**CREATIVE LITTLE SCIENTISTS:  
Enabling Creativity through Science and  
Mathematics in Preschool and First Years of  
Primary Education**

**D6.4 Activities promoting schools' and  
stakeholders' involvement in the field work**

**[www.creative-little-scientists.eu](http://www.creative-little-scientists.eu)**



The project CREATIVE LITTLE SCIENTISTS has received funding from the European Union Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 289081.



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## **Creative Little Scientists: Enabling Creativity through Science and Mathematics in Preschool and First Years of Primary Education**

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## **D6.4 Activities promoting schools' and stakeholders' involvement in the field work**

#### **Contact Information**

Coordinator:

Ellinogermaniki Agogi, Dr. Fani Stylianidou

Lead partners for this deliverable:

Ellinogermaniki Agogi, Dr. Fani Stylianidou, Dimitris Rossis

Website: <http://www.creative-little-scientists.eu>



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## **INTRODUCTION**

The *Creative Little Scientists* project constitutes a timely, fine-targeted contribution to a better understanding, at the European level, of the potential available (albeit not explicitly acknowledged and mostly unexploited) on the common ground that science and mathematics education in pre-school and early primary school can share with creativity. Based on this better understanding, the proposed project takes a decisive step beyond 'research for the sake of knowledge' towards facilitating the application of the generated knowledge in order to practically exploit the above mentioned potential.

At the outset of the project, a detailed, concrete plan (D6.1 Dissemination and Exploitation Plan) was developed and agreed between all project partners, which specified the methodology to be followed for the design, implementation, coordination and monitoring of all project activity aiming at the dissemination of the project's concepts and outputs to all stakeholders and the exploitation of its outcomes at the European, international, national, regional/local and institutional level. The dissemination and exploitation activities foreseen in the project serve a dual purpose. On the one hand, they provide the necessary conditions of awareness and motivation that allow Europe and the stakeholder groups to take advantage of the new understandings and conceptual tools that the project provides, and on the other, they maintain the necessary level of involvement of the groups and individuals that is at each stage necessary for the effective implementation of the research (WPs 3, 4 and 5) on the other.

Deliverable D6.4 (Activities promoting schools' and stakeholders' involvement in the field work) provide an overview of the activities carried out by all project partners and the strategy followed within the project to actively involve the target groups which were identified in the Dissemination and Exploitation Plan (D6.1), also discussed in detail during the 2<sup>nd</sup> and 3<sup>rd</sup> Project Meetings, as necessary for the efficient execution of the in-field research work in WP3, WP4 and WP5.

## **STRATEGY FOR DISSMINATION ACTIVITIES AND MATERIALS**

A largely common dissemination approach was followed among the project partners in terms of dissemination activities. The Dissemination and Exploitation Plan served as the basis of the project's dissemination strategy, but each partner had the freedom to propose and carry out additional dissemination activities after communication with the coordinator. To this end, sessions in both the 2<sup>nd</sup> and 3<sup>rd</sup> Project Meetings were aimed to stir up discussion concerning dissemination activities that would contribute to the project's exposure in the identified target groups.

In the 2nd Project Meeting in Paris (March 2012) ways of motivating teachers to answer the survey, as well as offer visibility to their schools was discussed. A joint decision was made to





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produce an invitation letter addressed to teachers, which would be asking for their participation in the survey and offering incentives. These incentives included:

- A certificate of participation in the EC-funded research project Creative Little Scientists.
- A report on practices and their implications, which will include a set of exemplary case studies illustrating the variety of approaches observed throughout the nine European countries participating in the project.
- A publication containing exemplary teacher training materials, which will be selected on the basis of good practices identified in the case studies as well as being consistent with the guidelines and curricula for teacher training produced by the project.

The invitation letter was drafted by EA and reviewed by all partners before translating it in all the languages represented in the consortium. The letter was the main material used to contact teachers, motivate them to participate in the teacher survey and was attached to all the emails sent by partners to schools in all countries. The participation invitation letters were sent electronically to large numbers of pre-primary and primary schools through both existing and new communication channels, using personal, institutional and national contact lists, and following more of an "open ended" approach in order to ensure that the numbers required in the project's Description of Work would be reached. The letters provided a brief description of the project's aims and outcomes, an overview of the two research phases (teacher survey and in-depth field study), contact information for queries, and instructions on how to register as participants. All this information was also included on the project's website, in a page specially created for this purpose (<http://www.creative-little-scientists.eu/content/teachers>); partners could choose to direct their survey participants to register through that webpage if they wished to. Personal information (Name, Surname, School, E-mail and Years of Teaching Experience) was required from teachers in an effort to monitor the characteristics of the sample and ensure coverage of a wide spectrum of contexts and provisions, and thus practices regarding early years science and mathematics education. Furthermore, teachers were asked in the same form to indicate their interest in participating in the second phase of the research, the school-based in-depth field work; their personal information was necessary so that researchers would be able to contact them if they got selected. Teachers were informed that this information would be used solely for research purposes and were given the opportunity to withdraw their interest at any time. Personal data were retained in password protected servers in the partner institutions where only authorised staff had access to them.

The invitation letter can be found in Appendix A.

#### *Dissemination channels used*

A variety of channels were used by all project partners in order to disseminate the teacher survey. Communication through email was the most common channel used with partners



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sending invitation emails to school email accounts and teacher email accounts. The school email addresses were found through governmental websites and partners' established networks. In total, more than 14.000 emails were sent by the partners to schools and teachers informing them about the project and asking for their participation in the teacher survey.

Partners established national networks and partnerships were also mobilised to promote the project and motivate participation in the teacher survey. An overview of the national networks used can be seen in the table below.

Partner	Network	Country
IoE	Science Learning Centre network	UK
IoE	ASE	UK
IoE	Partnership schools with IoE	UK
BG	Partnership schools with BG	UK
OU	Partnership schools with OU	UK
AUC	AUC CPD participants database	Belgium
AUC	AUC alumni	Belgium
AUC	Partnership teachers and schools with AUC	Belgium
AUC	Flemish teacher advisory boards	Belgium
GUF	Haus der kleinen Forscher	Germany
GUF	Deutscher Bildungsserver	Germany
GUF	Bibernetzwerk frühkindliche Bildung	Germany
NILPRP	Hands-on Science Romania	Romania
NILPRP	National Association of Romanian primary school teachers	Romania
NILPRP	Partnership schools with NILPRP	Romania
UEF	University of Eastern Finland practice school	Finland
EA	EA contact teacher database	Greece

Apart from national networks and contacts, partners contacted and published invitations to the research in international networks and organisations. An invitation text along with the invitation letter was uploaded in the European Science Education Research Association (ESERA) website and all the members of the 'Early Years SIG' of ESERA were contacted to promote the project and invite interested participants. Other networks and associations used to promote the project include the Hands-on Science Network, Emergent Science, British Educational Research Association (BERA), European Educational Research Association (EERA) and the Association for Science Education (ASE).

Partners also presented information about the project and invited teachers to participate in the research in presentations in national and international conferences. A full list of presentations is presented below.







Presentations in conferences

- *EECERA 2012* (Porto, Portugal - 30 August 2012), UMinho, Audience size: 400, Audience: Teachers, researchers
- *Hands-on Science Conference/HSCI2012* (Antalya, Turkey – 19 October 2012), UMinho and NILPRP, Audience size: 500, Audience: Teachers, researchers, students
- *Semaine de la recherche et de l'innovation* (Amiens, France – 28 November 2012), UPJV, Audience size: 500, Audience: Parents, Teachers, Researchers
- *3rd Panhellenic Preschool Education Conference* (Ioannina, Greece – 11-13 May 2012), EA, Audience size: 600, Audience: Teachers, Researchers
- *7th Panhellenic Conference in Preschool Science Education* (Florina, Greece – 20 October 2012), EA, Audience size: 500, Audience: Teachers, School advisors, Researchers
- *ECER 2012* (Cadiz, Spain – 19 September 2012), EA/UEF/loE, Audience size: 1000. Audience: Researchers
- *'How is physics supposed to be taught today?'* conference (Thessaloniki, Greece – 9 March 2013), EA, Audience size: 700, Audience: Teachers, School advisors, Researchers
- *'Natural born explorers - Inquiry based education - In onderwijs van de toekomst?'* conference, (Ghent, Goudstraat, 21 March 2013) AUC, Audience size: 100, Audience: Teachers, Teacher educators
- *Seminar presentation Malta Council for Science and Technology*, (Valetta, Malta 6th July 2012), Audience size: 70 Audience: Primary level teachers
- *6ème Edition de la semaine de la Recherche et de l'Innovation*, (Amiens, France, 29 November 2012) Audience size: 60 Audience: teachers, stakeholders
- *National Preschool Teachers Conference*, (Volos, Greece, 25 May 2013), Audience size: 120, Audience: Preschool teachers.
- National Science Learning Centre Annual Conference, (York UK, July 2012), Audience: Researchers, lecturers involved in teacher education, local education authority advisers, teachers.
- British Educational Research Association Conference, (Manchester UK, September 2012), Audience: Researchers, lecturers involved in teacher education, local education authority advisers, teachers.
- Workshop at the London Regional Meeting of the Association for Science Education, (London, England, May 2013), Audience size: 100, Audience: Teachers, lecturers, advisers, researchers in science education.





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Another very important channel to promote the participation of teachers in the research was the exposure to the project objectives provided through partners' websites. Each of the partners' websites contains a presentation of the project, its main objectives and an overview of the workplan. These webpages also provide links to the official project website, more particularly to the section that is dedicated to teachers' participation (<http://www.creative-little-scientists.eu/content/teachers>). As already mentioned, this section of the official project website is dedicated to informing teachers of how they can declare their interest to participate in the empirical phase of the research. It contains an invitation to all teachers, some brief information on what is required and a list of the material they will receive as participants. The invitation letter is available for download in all languages represented in the consortium in this section, while a web form allows teachers to register as participants directly via the website.

A brochure<sup>1</sup> and a leaflet<sup>2</sup> describing the *Creative Little Scientists* objectives, providing general information about the project aims and vision, and publicising the project website was produced by the consortium in digital format for partners' easy printing and translation in the national languages. These materials (see also Deliverable D6.3) were made available for all consortium members for translation and use (see translated versions of the project leaflet at <http://www.creative-little-scientists.eu/content/leaflets>). In a printed format, these dissemination materials were extensively used for visibility in third party conferences and workshops, and/or for dissemination events organised by the project partners individually or in groups. In an electronic format, they were easily and widely distributed via the website and/or e-mail to interested stakeholders.

The teacher survey undertaken in 2012 as part of WP3 included a question about whether the respondent wanted to take part in the fieldwork phase. Many of the sites used in the fieldwork for WP4 were drawn from these volunteers. The analysis of the answers to the teacher survey indicated specific participants as cases of interest for WP4. After identifying specific teachers, the schools where they taught were then researched using information such as school websites, inspection reports, and prospectuses, for their qualities regarding science, mathematics and creativity in the early years. These schools were contacted in addition to other schools that were personally known to the researchers as potentially exemplifying good practice in early years science and mathematics education. The teachers and classes used within these schools were also volunteers and were selected to cover the full *Creative Little Scientists* age range focus of 3 to 8 years old. Due to the selection process presented above no additional dissemination activities were deemed necessary to be carried out by the partners specifically to target participants for the in-field work.

In WP5 - Directions for teacher training - the project will propose a set of curriculum design principles as concrete guidelines for European initial teacher training and continuous

<sup>1</sup> [http://www.creative-little-scientists.eu/sites/default/files/CLS\\_brochure\\_FINAL.pdf](http://www.creative-little-scientists.eu/sites/default/files/CLS_brochure_FINAL.pdf)

<sup>2</sup> [http://www.creative-little-scientists.eu/sites/default/files/A4\\_CLS-leaflet-EN.pdf](http://www.creative-little-scientists.eu/sites/default/files/A4_CLS-leaflet-EN.pdf)





professional development programmes, which will foster creativity-based approaches to science and mathematics learning in preschool and the first years of primary education. The proposed principles will be accompanied by illustrative teacher training materials aiming to clarify their applicability in complex and varied European educational contexts, thus facilitating implementation, evaluation and further development across Europe. This work will be based on the findings of the theoretical (WP2), comparative (WP3) and in-depth field research (WP4). In order for it to have practical value to practitioners across Europe, a process of continuous involvement of real-life communities of stakeholders from the nine sample countries (teachers, principals, teacher trainers, curriculum designers, policy makers, parents) in focus group discussions and testing and validation of the formulated curriculum design principles, implementing the methodology of curriculum design research, was established early on in the project by WP leaders AUC.

Tasks 5.2 (Testing the prototypical curriculum design principles) and 5.4 (Validation) required each of the partners to carry out two separate focus groups, an online one for the former and a face-to-face one for the latter. Early on in the project, partners were informed by both EA (WP6 leader) and AUC (WP5 leader) that stakeholders were an important target audience for the project and especially for the work carried out in WP5 and were asked to use any dissemination events and activities to generate interest and build a database of contacts which contained stakeholders who would be used in WP5. In order to gather participants for the two online focus groups, AUC produced guidelines for partners to target specific stakeholders that would cover the entire spectrum which is described in the project's Description of Work, as well as drafted an invitation letter to contact said stakeholders. Partners then used their established networks and stakeholders that had shown interest in the project during previous dissemination activities. Similar to the work in WP3 and WP4, invitation letters were sent by every partner to stakeholders asking them to participate and conversations either through email or telephone were used to secure participation. As before the project official website<sup>3</sup> was used to provide instructions and guide participation access in the case of the online focus groups. No difficulties were reported by any of the partners in their efforts to gather the required participants for the two focus groups and as a result no further dissemination activities were planned specifically for WP5. In total 81 stakeholders participated in the online focus groups and 53 in the face-to-face focus groups.

Invitation letters for both the online and face-to-face focus groups can be found in Appendix B.

<sup>3</sup> <http://www.creative-little-scientists.eu/content/stakeholders>



## **ACTIVITIES PER PROJECT PARTNER**

The activities and dissemination events that each partner organised or participated in order to maintain the necessary level of involvement of the groups and individuals that were at each stage necessary for the effective implementation of the research are presented below.

### **Ellinogermaniki Agogi (EA)**

EA, after drafting the invitation letter, sent an invitation email to all the preschool and primary school email addresses found in the official websites of the various Regional Directions of Education around the country. Additional emails were sent to teachers who had expressed interest in the project through the website and in the various dissemination events that the project had been presented. The total number of invitation emails sent by EA surpassed 5.000 and a good number of replies was received as a result. Apart from the emails sent through official channels EA also sent emails using the institution's large database of contacts which has been built through its participation in EU projects and various local national activities in Greece; this contains more than 1.200 additional teacher emails.

Apart from the communication through email, EA participated in a number of national conferences and local events. These included presentations of the project's aims and objectives (in the early stages of the project) and presentation of results (after the first results were published). A list of all dissemination events which EA participated in to promote Creative Little Scientists follows.

- *3rd Panhellenic Preschool Education Conference* (Ioannina, Greece – 11-13 May 2012), Audience size: 600, Audience: Teachers, Researchers
- *7th Panhellenic Conference in Preschool Science Education* (Florina, Greece – 20 October 2012), Audience size: 500, Audience: Teachers, School advisors, Researchers
- *Organisation Mondiale pour L'Education Prescolaire (OMEP) Science in preschool – Taking advantage of children's ideas to plan learning activities in science* (Athens, Greece – 10 November 2012), Audience size: 80, Audience: Preschool teachers
- 'How is physics supposed to be taught today?' conference (Thessaloniki, Greece – 9 March 2013), Audience size: 700, Audience: Teachers, School advisors, Researchers
- National Preschool Teachers Conference, (Volos, Greece, 25 May 2013), Audience size: 120, Audience: Preschool teachers.

### **Institute of Education, University of London (IOE)**

IoE contacted almost 2.100 preschools and primary schools in Scotland through email communications with the invitation leaflet attached for involvement in the teacher survey and in-field research. Additional emails were sent to Scottish teachers and English teachers





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through the Science Learning Centre network, Association for Science Education (ASE) and to all partnership schools with IoE.

IoE participated in national/local events promoting the project and raising interest in participation. The events that IoE staff participated are:

- National Science Learning Centre Annual Conference, (York UK, July 2012), Audience: Researchers, lecturers involved in teacher education, local education authority advisers, teachers.
- British Educational Research Association Conference, (Manchester UK, September 2012), Audience: Researchers, lecturers involved in teacher education, local education authority advisers, teachers.
- Workshop at the London Regional Meeting of the Association for Science Education, (London, England, May 2013), Audience size: 100, Audience: Teachers, lecturers, advisers, researchers in science education.
- London region Association for Science Education / Science Learning Centre teachers conference 11th May 2013, Audience: Teachers, lecturers and consultants involved in teacher education, local education authority advisers, researchers.

### **Open University (OU)**

The Open University acting as 'national node' for England and Northern Ireland contacted schools through invitation emails using its network of contacts. In order to encourage early years practitioners to take part in the survey, a leaflet was prepared which included information on the project, a link to the *Creative Little Scientists* website, information on how to become involved in the survey and contact details for the Open University researcher coordinating this phase of the project. Potential participants were identified using a number of existing networks, i.e. Possibility Thinking and Creative Primary Schools networks (approx. 50 schools), 5x5x5=creativity network (approximately 500 people), British Educational Research Association network (approximately 200 academic or research oriented members), individuals associated with specific universities in Northern Ireland. These networks included schools known to the researchers from previous research work, via schools participating in PGCE programmes at the English partner universities and through contacting other academics with wide networks. Additionally, hardcopies of the leaflet were distributed at a number of teacher education conferences, such as those run by the Science Learning Centre and one for head teachers on creative primary practice, held at the Open University's London regional office. While the OU did not run any particular dissemination events, colleagues at the OU in Northern Ireland and those in other universities in Northern Ireland were asked to promote the project as much as possible. Members of the OU team also participated in international and national events promoting the project and raising interest.



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Additional events that OU staff participated in are:

- British Educational Research Association Conference, (Manchester UK, September 2012), Audience: Researchers, lecturers involved in teacher education, local education authority advisers, teachers.
- Conference on creativity and inclusion, Zaragoza, Spain, March 2013

### **Bishop Grosseteste University College Lincoln (BG)**

BG acting as 'national node' for Wales sent invitation letters to 1.000 preschools and primary schools in Wales were contact by letter to participate in WP3. This was followed up by telephone calls to at least 50 schools. BG also sent information about the project and teacher survey to its 400 partnership schools. Information about *Creative Little Scientists* and how one could participate in its research activities is also presented on the institution's website. (<http://www.bishopg.ac.uk/?id=10716>). Finally, the project, its aims and objectives were featured in the Journal of Emergent Science and the invitation to the teacher survey was sent through the Emergent Science network.

The events that BG staff participated in are:

- British Educational Research Association Conference, (Manchester UK, September 2012), Audience: Researchers, lecturers involved in teacher education, local education authority advisers, teachers.

### **University of Eastern Finland (UEF)**

UEF contacted 250 preschools and primary schools through email communication and followed up initial communication with telephone calls to interested schools and teachers. The invitation letter was translated into Finnish formally to describe the aims and purposes of the project as well as motivate schools and teachers to participate in the various research stages of the project. The project is also continuously presented in Finnish websites and in the University of Eastern Finland there is a page dedicated to *Creative Little Scientists* (<http://www.uef.fi/fi/cls>). Apart from the above mentioned efforts to increase participation in the project, UEF also carried out a number of school visits and organised coffee meetings for teachers to encourage to teachers to participate on the teacher survey. The *Creative Little Scientists* project has also been presented in following national events:

- SCIfest –science festival 2013, Joensuu, Finland, 10 – 13 April 2013.
- Anniversary celebration of Teacher education in University of Eastern Finland, poster presentation 22 – 26 May 2013.

### **Artevelde University College (AUC)**

AUC, for the work in WP3 contacted individual teachers using the email addresses of: teachers who have completed a professional development course at the institution; mentors of the students of the departments of early childhood education and primary







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education; partners of the teacher education departments (in Flanders and Wallonia); and university alumni. Teacher advisory boards were contacted to forward the invitation emails and letters to the schools in their networks. Furthermore the websites of the Ministries of Education were used to search for more e-mail addresses of schools in the Flemish and French region. More than 2.000 individual teachers were contacted and additionally also more than 1.000 schools. Several of these contacted teachers were interested in the project and especially in the second part of the project (the in-depth field work).

The different advisory boards were also very interested in the project (and in the topic), for example, on demand, a workshop (12 September 2012) was given to all the pedagogical advisors of the Flemish catholic preschools (about 60% of the preschools in Flanders are catholic). Two catholic preschools participated in the in-depth fieldwork.

The project partners of AUC participated also in some other events (during these events and workshops the project was presented and the flyers of the project were given to the participants):

- 'Natural born explorers - Inquiry based education - in onderwijs van de toekomst?' conference in Ghent, Belgium on 21 March 2012; Audience about 100 teachers and teacher educators
- 'Children inquire, discover and design. How can we foster their inquiry attitude?' Session for coordinators and heads of teacher education departments (early childhood), campus Dansaert, Brussel, 19 April 2012.
- 'Science and technology in the preschool'. Workshop at the technology day of Brabant. Provinciehuis Vlaams-Brabant, Leuven, 20 April 2012. About 35 preschool teachers participated at the workshop.
- 'Young children, big researchers. And the teacher?' Small workshop in Sint-Niklaas (about 15 participants; preschool teachers). KaHo Sint-Lieven, Sint-Niklaas, 19 September 2012.
- Session about educational design research (methodology is used in WP 5 of the CLS project) at the summer school of the ENW network 'School of Education', Leuven, 6 September 2012. About 20 educational researchers.
- Session at the University of Ghent to promote science and inquiry in preschool. Ghent, 7 May 2013 (About 60 student masters in education).

In addition to these events, AUC wrote a review (book) about STEM education (an assignment of the Flemish Ministry of Education). The book was published at the beginning of 2013 and is distributed by the Flemish education board (<http://www.vlor.be/publicatie/zin-wetenschappen-wiskunde-en-techniek>); they started with an edition of 2.000 books. In the book a list of interesting websites is added with a small description. The website of *Creative Little Scientists* is also included (p. 208). The book



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also provides the content for a reflection instrument which will be distributed to all preschool, primary and secondary schools in Flanders in September 2013.

- Van Houte, H., Merckx, B., De Lange, J. & De Bruyker, M. (2013) Zin in wetenschappen, wiskunde en techniek. Acco: Leuven

Finally, AUC participates in several advisory boards and workgroups to promote the project and to raise interest in participation, for example to participate in the focus groups of WP 5. AUC is a participant of the workgroup STEM education of the Flemish education board (advisory board of the Minister of Education) – some of the members of this workgroup participated in the focus groups. AUC is a participant of the COOL group of the pedagogical advisory board of Ghent (one of the schools of Ghent participated in the in-depth fieldwork), AUC is a member of the educational advisory board of the city of Antwerp (one of the schools of Antwerp participated in the in-depth fieldwork).

#### **Goethe University Frankfurt (GUF)**

GUF acting as 'national node' for Germany contacted approximately 60 schools around Germany (preschools, as well as primary schools) to inform about the project, using personal contact to head teacher and teachers. The project was presented nationwide in the "Haus der kleinen Forscher" (Little Scientists House) Newsletter, including a brief description of the project and a call to participate in the teacher survey. Information about the project and an open invitation for teachers to participate was also included in two very popular German education websites, the Deutscher Bildungsserver (German Education Server) website, as well as in the Bibernetzwerk frühkindliche Bildung (Beavers early childhood education network) website.

The project was also presented during a workshop on science learning and creativity that was held at the Bavarian "Akademie für Lehrerfortbildung und Personalführung" (Academy for Teacher Training and Human Resources Management) in February 2013.

#### **University of Minho (UMinho)**

The dissemination activities and the activities promoting schools' and stakeholders' involvement in Portugal were developed following 5 main lines:

- Institutional contact with educational bodies (Direção Regional de Educação and Associação de Professores de Braga) and with schools and school teachers through governmental bodies (General Education Boards) and public bodies (University of Minho and Braga' Teachers Association) and School Groups (Agrupamentos de Escolas– around 500 confirmed and a potential of over 3.000 schools and a number of stakeholders;
- Direct contact by email phone and in person with school and teachers with whom the UMinho project partners had previous contacts – around 50 schools, headmasters, and over 200 teachers;



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- Press releases and interviews on regional TVs, local and national radio and news agencies, aiming to reach not only schools and teachers but also stakeholders parents and the general public – strong feedback received resulting on the effective involvement of 17 new schools;
- Presentation of communications at international conferences – EECERA2012 and HSCI2012;
- Dissemination through UMinho website (20.000 persons, including over 1.000 teachers) and leaflet distribution with occasional one-to-one contacts in various events like conferences and science fairs – nearly 400 teachers.

In total, 52 schools were directly involved in the project activities.

#### **National Institute for Laser, Plasma and Radiation Physics (NILPRP)**

NILPRP acting as 'national node' for Romania contacted almost 1.200 preschools and primary schools using email communication to inform them about the project and invite them to participate in the research (with the invitation leaflet attached). The invitation for participation was addressed to the following groups:

- teachers participating to national and European projects coordinated by the Centre for Science Education and Training (CSET);
- former attendees to courses delivered by CSET on inquiry-based science education (IBSE);
- teachers involved in various science related activities (Science Days, science fairs, contests for children, conferences and symposia);
- members of the National Primary Teachers Association;
- participants to a national action focused on combating early years school abandon;
- counties school inspectorates - Teachers' Training Centers (Casa Corpului Didactic) and, in very few cases, "Palatul Copiilor" (educational units in charge with out of school educational programs)
- members of the national network "Hands-on Science Romania"

NILPRP participated to several national events to promote the *Creative Little Scientists* project by presenting both its objectives and results:

- National Symposium "Education through change - Instruction through experiment" (Mioveni, Romania – 23 March 2013), NILPRP, Audience size: 70, Audience: Teachers.
- Conference "Science education in School" and "Stars of Science - contest for school students" (Galati, Romania – 18-19 April 2013), NILPRP, Audience size: 250, Audience: Teachers



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- National Symposium "Let's play science" (Rm. Valcea, Romania – 18 May 2013), NILPRP, Audience size: 80, Audience: Preschool and Primary School Teachers and parents.
- Mentoring session for preschool teachers (Bucharest, Romania – 16 May 2013), NILPRP, Audience size: 22, Audience: Preschool Teachers.
- Annual Conference of the Faculty of Physics, University of Bucharest (Bucharest, Romania – 21 June 2013), NILPRP, Audience size: 23, Audience: Physics researchers and teachers.

#### Université de Picardie Jules Verne, France (UPJV)

UPJV acting as 'national node' for France contacted 100 schools through emails sent to 4 major academies in France (Creil, Amiens, St Quentin and Paris) and teachers' unions. UPJV also presented the *Creative Little Scientists* project in the Semaine de la recherche et de l'innovation (Week of Research and Innovation) in Amiens, France at the end of November 2012) and inviting interested practitioners to participate in the teacher survey and subsequent research. UPJV also contacted "La ligue de l'enseignement" (The Association for Education) a very important confederation of educational associations in France that is comprised from over 30 thousand associations and over 2 million members.

UPJV participated in the following dissemination events:

- *6ème Edition de la semaine de la Recherche et de l'Innovation*, (Amiens, France, 29 November 2012) Audience size: 60 Audience: teachers, stakeholders
- *Semaine de la recherche et de l'innovation* (Amiens, France – 28 November 2012), UPJV, Audience size: 500, Audience: Parents, Teachers, Researchers.

#### University of Malta (UoM)

In Malta, UoM contacted schools and teachers directly to inform them about the project and invite them to participate in the research. 21 schools were contacted, all of which were part of Dr. Suzanne Gatt's personal network of contacts in education as a teacher trainer. *Creative Little Scientists* was also presented in a seminar presentation for the Malta Council for Science and Technology in Valetta, Malta on 6 July 2012.





## APPENDIX A: Teacher survey (WP3) invitation letter

### Invitation to participate in a European research project for enabling Creativity through Science and Mathematics in Preschool and First Years of Primary Education

Science and mathematics education, creativity and innovation are areas equally recognized as important for Europe, and their strengthening as a vital priority. The *Creative Little Scientists* project constitutes a timely contribution to a better understanding, at the European level, of the potential available on the common ground that science and mathematics education in pre-school and early primary school (up to the age of eight) can share with creativity.

The *Creative Little Scientists* consortium, bringing together academics and researchers from 9 European countries (Belgium, Finland, France, Germany, Greece, Malta, Portugal, Romania, and the UK) and comprising expertise of the highest level and quality in the areas of science and mathematics education in early childhood, creativity in education, cognitive psychology, comparative educational studies, and teacher training has set as overall aims for the project:

- To provide Europe with a clear picture of existing and possible practices, as well as their implications and the related opportunities and challenges, in the intersection of science and mathematics learning, and development of creative skills in pre-school and the early years of primary education (up to the pupil age of eight); and
- To transform the knowledge generated through this into policy guidelines, as well as guidelines, curricula and exemplary materials for relevant teacher training in the various European contexts.

In order for the project to achieve the above aims, teachers currently working in Pre-school and Primary Education are invited to participate:

- **in the first phase**, by completing the online questionnaire (available from mid-May 2012 until end of June 2012), and/or
- **in the second phase**, taking part in the in-depth research conducted by the project and collaborating with researchers through classroom observations and interviews. (January - April 2013).

All participating teachers will receive:

- A certificate of participation in the EC-funded research project *Creative Little Scientists*.
- A report on practices and their implications, which will include a set of exemplary case studies illustrating the variety of approaches observed throughout the nine European countries participating in the project.





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- A publication containing exemplary teacher training materials, which will be selected on the basis of good practices identified in the case studies as well as being consistent with the guidelines and curricula for teacher training produced by the project.

All teachers interested in participating in the first and/or second research phase can contact (name, email address, tel. no), providing their name, telephone number, email address as well as their current school of employment and years of teaching experience. Alternatively, teachers can register by going to the project website, [www.creative-little-scientists.eu](http://www.creative-little-scientists.eu), and filling in the web form provided after clicking on the button labeled 'Participate' (main menu at the top of the webpage).

Personal data provided by participants will only be used for research purposes and are protected according to the EC directive 95/46/EC. All data gathered during the project will be stored in a secure location accessible only to the researchers.

**Contact Information:**

Name, telephone number, email, institution



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## APPENDIX B: Focus groups (WP5) invitation letters

### Invitation to participate in an online focus group for a European research project for enabling Creativity through Science and Mathematics in Preschool and First Years of Primary Education

Dear ...,

We believe you have valuable expertise in early science education in **country** and so, we would like to invite you to participate in an online focus group.

This focus group will aim to draw upon varied expertise to debate curriculum design principles for the Creative Little Scientist project. These principles aim to inform initial teacher education as well as continuous professional development, as part of the *Creative Little Scientists* (CLS) project.

**The Creative Little Scientists project** is a European research project exploring the potential available on the common ground that science and mathematics education in pre-school and early primary school (up to age of eight) can share with creativity. The project brings together academics and researchers from 9 European countries (Belgium, Finland, France, Germany, Greece, Malta, Portugal, Romania, and the UK) and comprises expertise of the highest level and quality in the areas of science and mathematics education in early childhood, creativity in education, cognitive psychology, comparative educational studies, and teacher training. More information about the project can be found on the project website, [www.creative-little-scientists.eu](http://www.creative-little-scientists.eu).

One of the key objectives of the project is the proposition of **a set of curriculum design principles** as concrete guidelines for European initial teacher education (ITE) and continuous professional development (CPD). These design principles enable teachers to foster creative approaches to science and mathematics learning in preschool and the first years of primary education, in the frame of **inquiry-based educational environments**.

As a part of the research, we wish to evaluate the viability of these principles using online focus groups in the different partner countries. Hence our letter to you, where we feel your knowledge and experience would be very valuable.

Each **online focus group** will compose of experts with different experience, working at different levels in education – from research and policy to everyday practice. Each focus group will consist of around 6 to 8 participants. The running period of the online focus group is from the **30<sup>th</sup> of November until the 21<sup>th</sup> of December**. During these 3 weeks, we would like to request each participant at least one hour a week to provide written comments, questions and specific examples of practice from a context which they are familiar with. Login passwords, detailed information on the group assignment, and technical support will be introduced by an e-moderator, **name**, who can be contacted on





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**email** and accessible through the project's website. It is their responsibility to ensure everything is as clear and easy as possible.

As mentioned above, we would like to invite you to engage in the online focus group for **the country/Community**. We think your expertise and opinions will be of enormous value in the refinement of the prototypical design principles for teacher education.

As a small token of our appreciation, all participants will receive:

- A certificate of participation in the EC-funded research project *Creative Little Scientists*.
- All educational and scientific material generated by the project in English.

Thank you very much,

**..... (Name of a partner member/country)**

Members of the *Creative Little Scientists* consortium

**e-mail**

**link website**



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## Invitation to participate in a face-to-face focus group for a European research project for enabling Creativity through Science and Mathematics in Preschool and First Years of Primary Education

Dear ...,

We believe you have valuable expertise in early science education in **country name** and so, we would like to invite you to participate in a focus group.

This focus group will aim to draw upon the expertise of experts in initial teacher education or continuous professional development to debate curriculum design principles for the *Creative Little Scientists* project.

**The *Creative Little Scientists* project** is a European research project exploring the potential available on the common ground that science and mathematics education in pre-school and early primary school (up to age of eight) can share with creativity. The project brings together academics and researchers from 9 European countries (Belgium, Finland, France, Germany, Greece, Malta, Portugal, Romania, and the UK) and comprises expertise of the highest level and quality in the areas of science and mathematics education in early childhood, creativity in education, cognitive psychology, comparative educational studies, and teacher training.

More information about the project can be found on the project website, [www.creative-little-scientists.eu](http://www.creative-little-scientists.eu).

One of the key objectives of the project is the proposition of **a set of curriculum design principles** as concrete guidelines for European initial teacher education (ITE) and continuous professional development (CPD). These design principles enable teachers to foster creative approaches to science and mathematics learning in preschool and the first years of primary education, in the frame of **inquiry-based educational environments**.

As a part of the research, we wish to evaluate the viability of these principles using a focus group in the different partner countries. Hence our letter to you, where we feel your knowledge and experience would be very valuable.

Each **focus group** will be composed of early years-focused science or mathematics teacher educators in the field of initial teacher education or continuous professional development. The focus group will last maximum 3 hours on a day in May.

At this point prototypical design principles for teacher education have been developed from desk studies and presented in an online focus group. These were based on the spider web model of Jan van den Akker (2007), an expert in curriculum design. This model consists of 10 components: the rationale or vision of the curriculum, aims and objectives, content,





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learning activities, teacher role, materials and resources, grouping, location, time, and assessment.

The key expectations for the focus group will be to comment on these 10 components (and related prototypical design principles).

In the focus group we are also aiming to capture examples from first-hand experience which could be helpful for teacher education. The collected data will be used to adjust the design principles, so no names will be mentioned. The examples will be used to clarify these design principles. Because of the influence of the context, the country will be mentioned in the examples.

As mentioned above, we would like to invite you to engage in the focus group for **the country/Community**. We think your expertise and opinions will be of enormous value in the refinement of the prototypical design principles for teacher education.

As a small token of our appreciation, all participants will receive:

- A certificate of participation in the EC-funded research project *Creative Little Scientists*.
- All educational and scientific material generated by the project in English.

Thank you very much,

..... (Name of a partner member/country)

Members of the Creative *Little Scientists* consortium

e-mail



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