

SYSTEMIC

SAY YES TO STEM IN THE CLASSROOM



Professionals Go Back To School Scheme

A Guide For Schools





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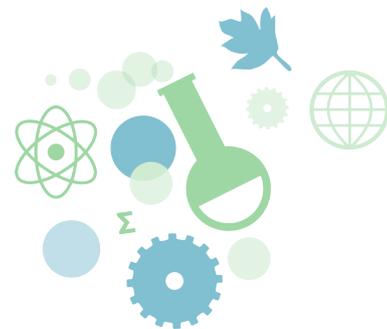
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SYSTEMIC: The overall objective of the SYSTEMIC project (“Say Yes to STEM In the Classroom”) is to increase young Europeans’ interest in maths, science, engineering and technology education and careers and to provide teachers with the appropriate pedagogical tools to enable them to teach STEM topics differently and in a more attractive way.

STEM Alliance: The STEM Alliance – inGenious Education and industry, brings together Industries, Ministries of Education and education stakeholders to promote Science, Technology, Engineering and Math education and careers to young European’s and address anticipated future skills gaps within the European Union. With the support of major industries and private partners, the STEM Alliance promote STEM jobs in all industrial sectors and contribute to build a STEM-skilled workforce. The STEM Alliance will join forces to improve and promote existing industry-education STEM initiatives (at national, European and global levels) and contribute to innovation in STEM teaching at all levels of education.

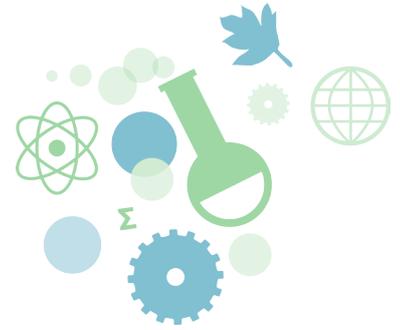
Introduction:

The “STEM Professionals Go Back To School” scheme is a [STEM Alliance](#) programme to engage company professionals (technicians, scientists, engineers, researchers or employment and recruiting managers) to visit schools and participate in collaborative activities with them. The aim is to close the gap between industry and education sectors, to raise pupils and teachers’ awareness on STEM careers and to promote STEM jobs.

The programme is taking place in spring 2017 with a peak of activities around the annual STEM Discovery Week, from the 24th to the 30th of April!

SYSTEMIC, funded by the Erasmus+ Programme of the European Union, is supporting this scheme by providing two guides, one for schools and one for companies interested in organising and carrying out school visits. The guides provide information, advice and useful tips that both parties can take into account before, during and after their collaborative activities. By doing so, schools and companies will collaborate constructively into organising visits and activities that will promote collaboration between the respective school and industry plus raise students’ awareness on STEM careers and future STEM jobs. The two STEM Professionals Go Back to Schools guides constitute Intellectual Output 6 of the Systemic project.

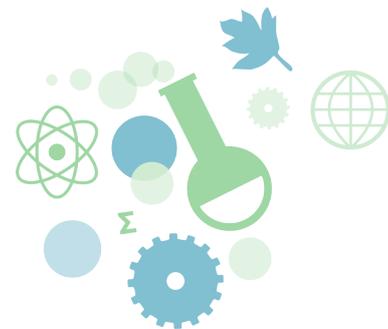
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Introduction to Professionals Go Back To School



Professionals go back to school is about Science, Technology, Engineering and Mathematics (STEM) professionals from companies (e.g. technicians, scientists, engineers, researchers or employment and recruiting managers) going to schools to talk about their job and experiences to the students. The purpose of these visits is to inspire young students about possible careers in STEM. In order to help you prepare for such a visit, we have put together this guide which includes advice and tips for schools that will help you make the most out of this experience, before, during and after the professionals visit. The company will receive a similar guide as preparation.

Why is STEM so important?

Science, Technology, Engineering and Mathematics (STEM) skills are essential for maintaining an innovative, sustainable and competitive workforce in Europe. The business world is changing with an ever increasing speed and the need for STEM skills in the labour market is growing every year. The problem however is that growing demand is not met with a growing supply of STEM skilled youngsters. Many students, and in particular women, are not choosing studies/a career in STEM for various reasons, resulting in a skills gap. It is therefore important to stimulate and motivate young students for STEM and to show them what careers in STEM are like. The STEM Professionals Go Back to School campaign is a step to bridge the world of education and the world of work and to facilitate their alignment in the future.



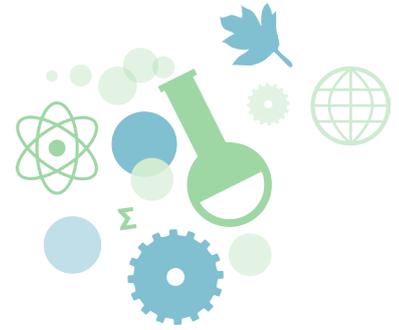
What is a STEM profession?

STEM professions include all jobs related to Science, Technology, Engineering and Mathematics such as the technician, scientist, engineer, researcher or employment and recruiting manager.

Examples: Aerospace Engineers, Astronomers, Applications developer, Geologist

Part 1 - A practical guide for schools in three simple steps

(click below to jump to a specific step)



Step 1 - Preparation

The preparation of a visit involves various steps and responsibilities that schools need to take into account and address in order to ensure a fruitful and pleasant experience for both the visiting professional and the participating students. A collection of the most important steps to be taken as part of the school preparation process can be found below:

- **Find and contact your visiting professional:** Use the PGBS tool in order to find a professional who is available to visit your school. To create your profile for the tool and look for a STEM professional, follow the instructions in the PGBS Tool User guide here www.stemalliance.eu/pgbs (Step 1-4). Once you find a professional you would like to collaborate with, you can send them a contact request. After the professional has answered your contact request in the Tool, you will receive their confirmation and contact details, to start planning your activity together.

- **Appoint a contact person:** This person should normally be the teacher who is organizing the visit. He should also be the one liaising with other members of the school staff regarding both the pedagogical content and practicalities related to the visit.
- **Get inspired:** Take a look at the STEM Alliance repository of practices, www.stemalliance.eu/practices to find ideas on possible activities you can organize with your visitor during his time at your school.
- **Decide on the main objectives:** In collaboration with the visiting professional agree on a simple set of objectives. These objectives can be related to:
 - **topic** (e.g. the career/ innovations in a sector; what it means to be a stem professional etc)
 - **finding the link with the current curriculum**
 - **agreeing on key messages and expected outcomes**
- It is important that you as a teacher are in charge and you actively discuss the right approach with the professional. This is also important to manage expectations of from both sides. After defining the basic information for your activity with the professional, you can register the activity in the PGBS Tool. You can edit the information of the activity form any time before closing it (after it is carried out). To learn how to manage your contact requests in the Tool and register activities, please, check the PGBS Tool User guide here www.stemalliance.eu/pgbs (Step 5-6). Once an activity is closed, the information will be displayed in the initiative map (public page) and promoted through STEM Alliance channels.
- **Develop an agenda of the day:** Get your students involved and come up with a simple but precise agenda for the day that you will agree with your visitor at least two weeks in advance. Do not forget to include practical details i.e. exact times, location etc. so you can communicate this agenda to the professional. Review the agenda carefully with students and ask them to agree and help follow this schedule.
- **Prepare the students:** Once the visit is confirmed, the school needs to ensure that the participating pupils are well prepared in order to get the most out of their interaction with the visiting professional.
 - **Connect or introduce the visit as a part of a lesson.** Depending on the expertise of the visiting professional, it might be possible to connect his field or current work to a STEM topic that students have been exposed to. If possible it is good to have a lesson in advance where you can already link the professionals' visit to the current topic
 - **Students' interest for the professional should be cultivated.** In collaboration with the visiting professional use photos, videos, brochures, a small bio to get students excited about the upcoming visit.
 - **Discuss your expectations for learning and behavior.** Students may have certain expectations of the visit based on their beliefs or what they have heard from other students who went through similar experiences. Prepare them mentally for the experience by reviewing with them the agenda of the day. Prepare them for a fruitful exchange with the visiting professional by getting them to think about, research and even rehearse the questions they will want to ask. Do not assume that students are comfortable with these skills so try to foresee time for them to practice. This is also the right time to set ground rules and explain to them how you expect them to behave during the visit.

- **Consent must be obtained:** Whenever a person can be directly or indirectly identified in a picture of a film, the images are considered to be personal data. As a result, they are subjects to privacy laws. In the case of schools, consent must be obtained from the parents or legal guardian for minors but also from the minors themselves as part of their education. Consent must be explicit and in writing. Parents need to know what media will be used to share the picture/film and with whom it will be shared. They also need to know whom they can turn to in case there is a query or problem.
- **Start spreading the word about the visit:** use social media and link with STEM Alliance Twitter (twitter.com/stemalliance_eu) and Facebook (www.facebook.com/StemAllianceEU/) accounts to talk about your upcoming activity. The official hashtag for the PGB2S Promotional Campaign is #PGB2S.



Step 2 - Welcoming the company

As you are welcoming a visitor at your school or in your classroom, we have provided the following tips to help your visits be as enjoyable and productive as possible:

- **Treat them as your valued guest:** Approach your preparation from a customer service perspective. You want your visitor to feel welcomed and you want to ensure that your visitor is greeted by all staff and students they encounter on their visit. Make the visit as positive as possible so that nothing distracts from what the actual visit and interaction with students.
- **Plan ahead:** The more preparation you can do for a visit ahead of time, the better. Having a well-planned schedule and well-coordinated logistics can help your visit go as smoothly and professionally as possible.
- **Stay flexible:** At the same time, recognize that things may change based on your visitor. They may arrive late or may ask to spend more time on a particular activity. As long as your visitor is engaging in exchanging with students, it will be a worthwhile use of the visit.



- **Be respectful of their time:** Depending on their role and seniority, businesspeople often have very packed schedules. Make sure that you plan their visits carefully to maximize their time with students with interesting and varying activities. Try to avoid keeping your visitor past the agreed departure time, unless agreed otherwise upfront.
- **Make it easy for your visitors:** Sometimes it is the little things that matter. Small gestures like having reserved parking (with their name on the reserved sign, if possible) and having greeters or signs to help them find the front office are greatly appreciated by your visitors. Furthermore, these types of things can help save time and make the visit go more smoothly, ensuring that your visitors leave with a positive impression of the whole experience.
- **Immerse them in the STEM Alliance experience:** Use the visit as an opportunity to show them other school-industry activities you have been involved with. Expose them to the great things that are happening in your school. The visit can include opportunities to attend or observe classes, school fairs, and events. If possible, set up meetings with teachers and students who can talk to your visitor about other positive school-industry experiences they already had. Ultimately, the visit is also an opportunity on helping professionals feel comfortable in a school environment. By doing so, professionals will be more and more open to conduct more visits of this type and support school-industry collaboration activities within their companies in the future.
- **Document the visit of the professionals:** Keeping in mind you have obtained the consent of the professionals and parents of your students to take photos and videos, you can document the activity taking photos and short films.



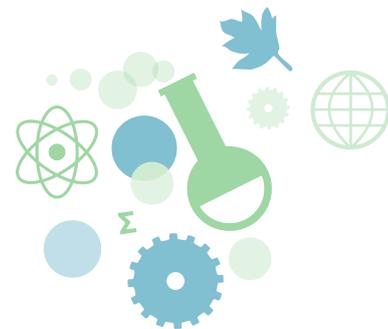


Step 3 - After the visit

Now that the visit is over, it is important to reflect on its impact and outcomes with the students. At the same time, it is equally important to close this interaction with the visiting professional in a positive way that will keep the door open for future visits or other possible types of collaboration.

- **Collect feedback and impressions from students:** This can be done in a formal way through the provided evaluation form on the PGB2S page (www.stemalliance.eu/pgbs) that includes some questions on the impact on your students. In addition, it can be converted to a classroom exchange activity. For example, students can be invited to write down 2-3 things that they learned during the visit and share them with their peers. A call with the professional to discuss the outcomes and feedback is also appreciated. It is good to schedule a follow up together with your visitor.
- **Provide feedback** to both the visiting professional and the whole initiative via the pre-made evaluation forms that will should be filled-in after the completion of the event.
- **Thank you note or email:** No more than 2-3 days after the visit send a thank you note or email. Make specific mentions of the school visit, add some good quality pictures and include any additional information. If relevant, outline clear next steps such as a visit to industry or a new or follow up visit from the same or different professional from the same organization.
- **Share your experience about the visit,** use social media and link with STEM Alliance Twitter (twitter.com/stemalliance_eu) and Facebook (www.facebook.com/StemAllianceEU/) accounts to share some results. The official hashtag for the PGB2S Promotional Campaign is #PGB2S.

Part 2 - Get Inspired: Best Practices



Get inspired: best practice examples

For your inspiration, find below some examples of successful projects between businesses and schools:

Recordings and summary articles of webinars and chats from the STEM Alliance with professionals talking about their career.

- **STEM Alliance Webinar:** Perspectives on STEM and Energy careers. Read the article and watch the recording of this webinar to learn more and benefit from the expertise and experience of STEM Professionals from this sector:
 - Wouter Bleukx, BU Manager Organic Chlorine Derivatives at INOVYN, Chairperson of the Young EPCA Think Tank.
 - Harbinder Bhanvra, Business Manager Olefins & Gases at SABIC, member of the Young EPCA Think Tank.
 - Annemiek Mensert, Reservoir Engineer at Shell E&P.
 - Link: <http://www.stemalliance.eu/webinar-2-after>
- **STEM Alliance Webinar:** Careers to shape the future of technology: Read the article and watch the recording of this webinar to learn more on careers related to the latest technology and industry needs in terms of skills with two experts:
 - Nuria Llin, Manager for Texas Instruments University Program in Europe, Middle East and Africa.
 - Stephan Griebel, Director for Business Development and Alliances Europe for educational solutions for inquiry based learning in K-12 at Texas Instruments Education Technology.
 - Link: <http://www.stemalliance.eu/webinar-3-after>
- **Chemistry & Supply Chain:** A Chat on Careers: Read the article and watch the recording to learn more about this Chat organised in collaboration with EPCA (the European Petrochemical Association) with experts in the field talking about their careers.
 - Michael Koch, Head of Safety, Health, Environment & Quality (SHEQ) & Training, BERTSCHI.
 - Christoph Girmann, National Operations Manager Netherlands & Germany, AGILITY LOGISTICS.
 - Link: <http://www.stemalliance.eu/chat-1-after>

Other resources:

Female surgeons, firefighters and RAF pilots meet primary school pupils: <http://www.dailymail.co.uk/femail/article-3606869/Children-stunned-meet-female-firefighters-surgeons-RAF-pilots-drawing-MEN-doing-jobs.html>

Resources



Pre-visit Checklist

Use this pre-visit checklist as a way to help keep yourself and your school organized as you are preparing for a visit:

Have you appointed a person from the school as responsible for the visit?

Have you finalized and sent the final agenda to your visitor?

Have you registered your upcoming event/visit in the PGBS tool?

Has the objective of the visit been discussed and agreed upon with your visitor?

Have the students been well briefed for the visit and carried out all preparation needed?

Is the visitor covered by appropriate insurance during his school visit?

Have you informed all other teachers and staff about the upcoming visit?

Have you posted any necessary signs with directions, Wi-Fi password etc. to facilitate your visitor?

If you will be taking pictures or video during the visit, have you made sure that you collected all consent forms from students' parents?



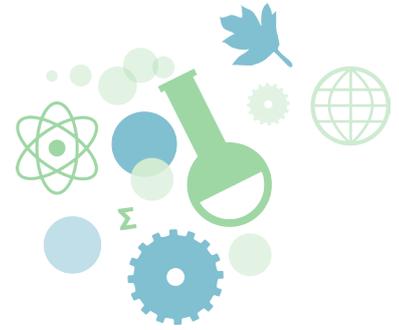
Post-visit Checklist

Have you completed the feedback form available through the PGBS form?

Have you collected students' feedback on the visit?

Have you sent a "thank you" note to your visitor?

Have you sent the visitor any feedback on the visit



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