



LINC Activities

'Demystify Technology:
it's magical, not magic'

>> LEARNING SHEET

About the activity

The 'demystify technology' activity will introduce groups of parents and pupils to the basics of programming and electronics technology. The *Arduino* physical computing platform will be used to offer initial understanding of the inner workings of this technology and lead to the implementation of simple but functional physical computing projects encompassing and demonstrating what has been learned. The completion of these projects will also require additional manual and creative skills. We anticipate that the challenging and creative nature of such an undertaking will enhance the bonds and communication between parents and pupils, enhance the appreciation of the learning process and intensify self-esteem, curiosity and the desire to explore.

Aims and objectives:

The activity aims at:

- Bringing teachers, parents and students together in addressing and interesting but challenging and unfamiliar subject
- Enhancing the understanding of the working and possibilities of technology
- Promoting the cooperation of parents and pupils in playful learning
- Stimulating self-esteem and curiosity in pupils
- Promoting the application of creativity as well as analytical and synthetic thinking in the learning process
- Encouraging pupils to take initiative and control of their learning process

Regarding educational goals and pedagogies, there is a strong focus on:

- Community-building approaches
- Immediate practical application of theoretical teaching
- Explorative approaches to learning
- Cooperative approaches to learning
- Use of ICT to support the learning process and social communication

Who will be involved?

- Teachers
- Parents and family members
- Students
- Professionals and practitioners (optionally)

This activity revolves around:

- Family-school interactions
- Enhancing functional technology awareness
- Promoting spontaneous use of creativity to enhance and expand the learning experience



Workshop

The core of this activity will be a workshop to take place in the schools. The workshop will consist of one introductory session and one or two project building sessions. A promotional fair-like activity may be held to promote the workshop and attract interest.

Promotional fair: Physical computing will be presented in general but with emphasis on projects and other activities undertaken in schools or for children of the respective age.

Introductory session: Pupils will work in groups with their own parents. The fundamental principles of programming and attaching and controlling devices will be demonstrated. Basic experimentation for better understanding will be promoted.

Project building session(s): Larger groups will be formed. Each group will be assisted in conceiving designing and implementing a small project. At the end each group will present their project.

Expected impact: Basic understanding of physical computing (technology). Awareness of the cooperative process and the exploitation of skills diversity.

Introductory session

The underlying principles of both programming and device operation can and should be explained in easy but functional terms. The participants should come out of these session with a reasonable understanding of them and the ability to apply them on their project by referring to a concise programming manual and simplified specification sheets.

Depending on the participant group it is possible to use either the text based or a graphical programming environment.

Participants must be encouraged to experiment with various permutations of the parameters of each programming concept and device.

Project sessions

For the Project sessions the participants should form larger groups.

Each group should formulate the concept of their project collectively.

The coordinating instructor must discuss the project with each group and ensure that it is feasible within the constraints of this workshop and considering the group's skills.

If a group runs into trouble they should be assisted to reach a solutions themselves rather than offered a solution which they do not fully understand.

Appropriate emphasis should be given to the crafts component of each project. Groups should be encouraged to delegate tasks to individual members depending on their skills. Thee exploitation of skills diversity and the organization required is an important element of the learning process in this workshop

At the end each group will present their project discussing every element. Comments and discussion with the other groups on the choses and possible variations should be encouraged

The screenshot shows the LINC project website interface. At the top, there are social media icons (Facebook, Twitter, Google+, LinkedIn, RSS) and a search bar. Below that is a navigation menu with tabs: HOME, RESOURCES, DISCUSSION AREA, WIKI, EVENTS, and LOGIN. The main content area is divided into two sections: 'GENERAL DESCRIPTION' on the left and 'LATEST NEWS/EVENTS' on the right. The 'GENERAL DESCRIPTION' section features a circular graphic of diverse people and text describing the LINC community's goals. The 'LATEST NEWS/EVENTS' section lists several events, including 'LINC presented to 10th High School of Barcelona, March 27, 2014', 'LINC at EduLearn Conference, Barcelona, July 7-8, 2014', and 'LINC at FOE Conference, Florence'. Yellow dashed arrows point from the text on the right to the 'EVENTS' and 'DISCUSSION AREA' tabs in the navigation menu.

Do not forget to add an announcement about the activity on the **Event area of the LINC Community**. Place all the important information about the activity there and provide the necessary guidelines.

You can also initiate the dialogue in the **Discussion area** as well as upload a documentation of student work and relevant material and resources in the **Resources area**.

LINC portal: <http://www.linc-project.eu>

LINC community: <http://community.linc-project.eu>