

## 3D printing as an Educational Tool

3D printing (3DP) is a powerful educational tool applicable for a wide range of school subjects, from Science, Technology, Engineering, and Mathematics (STEM) to Humanities and Social Science. It can help students to understand abstract concepts with the help of tangible objects, can increase their motivation to study STEM subjects and can boost their creativity by facilitating the prototyping of their ideas. 3DP promotes the development of skills such as critical thinking, creativity, problem solving, team working and others.

3DP technology can involve students in active learning, improve their participation, and encourage them to be innovative and creative. It also raise students' interest in STEM education and create opportunities for integrating STEM with other disciplines.

3DP allows teachers to practice different teaching styles and can increase their interest and engagement. Consequently, it is very useful for teachers to get acquainted with 3DP and to learn about its use in the teaching process. The outputs of “3DP Teacher” can help with that.



*Figure 1 – Teachers training in 3D printing. Source: Ludor Engineering*

There are many resources available for helping teachers to successfully integrate 3DP into the curriculum. For example, the “3DP Teacher” partners will prepare 7 video-tutorials explaining, step-by-step, how to 3D model various objects that can be 3D printed in the classroom. The objects have been selected by teachers from partner countries and the tutorials are specifically created for teachers without previous 3D modelling experience. The modelling software used is TinkerCAD, a

free-to-use online application. Other useful resources can be found on Thingiverse ([www.thingiverse.com/education](http://www.thingiverse.com/education)) and on the websites of various 3D printer manufacturers or other companies that are offering 3DP curriculum support.



*Figure 2 – Students using 3D printing. Source: Ludor Engineering*

3DP is not just a way for students to experiment but it could inspire the next generation of engineers, architects or designers. It is able to bridge the gap between the scientific and artistic sectors, enhancing students' learning and productivity.

3DP technology is present in a wide range of fields, including manufacturing, construction, medicine, fashion, arts and many more. Bringing 3DP to the classroom creates huge opportunities for students to be prepared for the future.

You will find more information about 3D printing, including applications, trends and its benefits for Education in the "3DP TEACHERS' GUIDEBOOK". Make sure you are following the "3DP TEACHER - implementation of 3D Printing in future education" project's [Facebook page](#) to be the first to know when the guidebook is published on [project's website](#).

The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.