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| Year 1° – Activity: SCRATCH “THE ART OF PROGRAMMING” | |
| Overview | CT is essential to the development of computer applications, but it can also be used to support problem solving across all disciplines, including the humanities, math, and science. Students who learn coding across the curriculum can begin to see a relationship between academic subjects, as well as between life inside and outside of the classroom.  Coding can enhance many of the current classroom lessons.  Besides CT teaches the values of cooperation and collaboration, copying it's not necessarily a bad thing: you can learn from others without stealing it but crediting the author instead.  Coding is also really useful when it comes to working with pairs because it helps the kids to embrace someone else point of view and work together on the same project.  The scientific communities all over the work share the results of their researches and the progress and innovation is reached through the very process of sharing.  In the same way apps developers do cooperate with others to tackle problems and in order to improve and integrate their product.  Furthermore coding gives pupils a chance to express their own personality through creativity.  Coding allows pupils to play and experimenting without fearing to be wrong: the trial and error process is instead an opportunity to look for new ideas and get the solution thanks to the confrontation with pairs.  Coding is the art of telling a computer how to perform complex tasks. Once you know how to code, you can create virtual worlds within the computer where the only limit on what is possible is your imagination. We want to put this power into the hands and hearts of every child because it's going to produce long term benefits. |
| Learning objectives | * Organizing information * Collaborating and participating * Acting in an autonomous and responsible way * Solving problems * Sharing decisions * Approaching new ICT tools * Getting to know computational thinking to develop logical skills to solve problems in an efficient and creative way. * Using Scratch language to write script, edit the Sprite , * Discovering the software different functions * Final product: the chosen Sprite introduces himself. |
| Times | * January-June 2019 |
|  | **Tools and materials**   * Computer, projector, IWB educational robots, etc.); * Code.org * Scratch environment * http://scratch.mit.edu * http://scratched.gse.harvard.edu/ |
| Steps of the learning path | **SCRATCH**  **Scratch is a block-based visual programming language and online community targeted primarily at children. Users of the site can create online projects using a block-like interface. The service is developed by the MIT Media Lab, has been translated into 70+ languages, and is used in most parts of the world. Scratch is taught and used in after-school centers, schools, and colleges, as well as other public knowledge institutions.  Scratch encourages the sharing, reuse and combination of codes, as indicated by their slogan, "Imagine, Program, Share". Users can make their own projects, or they may choose to "remix" someone else's project. Projects created and remixed with Scratch are licensed under the Creative Commons Attribution-Share Alike License.Scratch will automatically give credit to the user who created the original project and program.**   * Designing one of Leonardo’s toys, making it in the fablab and digitalizing it throught the 3d scanner * Editing the toy’s image and acquiring it into Scratch (the toy becomes a Sprite) * Creating a Stage * Recording an audio track with the presentation of the Sprite * Final Product: Writing the Script for the presentation of the Sprite   ***Glossary***   * *Four “S”:* ***S****CRATCH/****S****TAGE/****S****PRITE/****S****CRIPT.*  1. SCRATCH   Open source software   1. STAGE   Background where the actions take place   1. SPRITE   Characters and 2D objects that can be chosen in the software library, but can also be images uploaded from one’s own computer   1. SCRIPT   The sequence of actions that takes place on the stage. Is formed by a series of instructions represented by coloured blocks.  The child is the app developer ,the author of the story, the script writer and the director at the same time.  He writes the script, choses the background, prepares the costumes and sounds.  **1^ task: Designing a Sprite (main character of the story) who gives voice to Leonardo**  **2^ task: Writing the Script, specifying the movements, the environment, the other characters and the dialogue.**  **3^ task: Designing the bacground**  **4^ task: Exploring the software’s different functions in order to realize the script** |
| Evaluation | Each group shares the steps of the educational path, socializing the strengths of the activities. |
| Assessment | Kahoot questionnaire |
| Methodology | * Project based learning * Collaborative learning |