Print Your School

OVERVIEW

For this project, students are asked to create a map, sketches and, ultimately, a 3D printed version of their school. It has the potential to bring together skills from a number of different subject areas such as math, art and design.

GRADE LEVELS

This project would be appropriate for students in upper middle school (12 – 14 years old) as well as students in the high school depending on the amount of detail and research that is expected from students.

STEPS TO COMPLETION

1. Plans for different schools in your area or school division are collected. If multiple plans are not available, you could still work with your own school or building. This project of course would also work just as well with other types of buildings in your neighbourhood or community other than your school.

2. First, students create 2D sketches and maps of their school from the blueprints, files and photos of the other buildings. Depending on the age of the students you could ask these drawing to be created to a certain scale, containing certain details or created to other teacher created parameters.

3. From all of the collected photos, sketches and blueprints, students use CAD software to create models of the building or school that they are working with.

4. Once each building is created in modelling software, students have the opportunity to critique the work completed by others. They can leave suggestions, compliments, and instructions on missing details.

5. Students are given the opportunity to revise their 2D models adding any missing details and making improvements to their designs.

6. Finally, the models are exported as stl files, loaded onto the printed and actually printed out.

7. If wanted, teachers can collect all of the research, photos and sketches that were created with this project and hold an open house type of event where parents or students from other classrooms are brought into view all of the artifacts.

FOLLOW UP

Students might be asked to design another school (or community or neighbourhood) using the information that they have learned along the way. They can be asked to design a "perfect" school space or community.

EXTENSION QUESTIONS

1. What is the best way to find the area of a large building such as this?
2. How does technology play a role in designing buildings and other spaces?
3. What kind of information do you most need when completing a project such as this?

This project was originally created by:

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