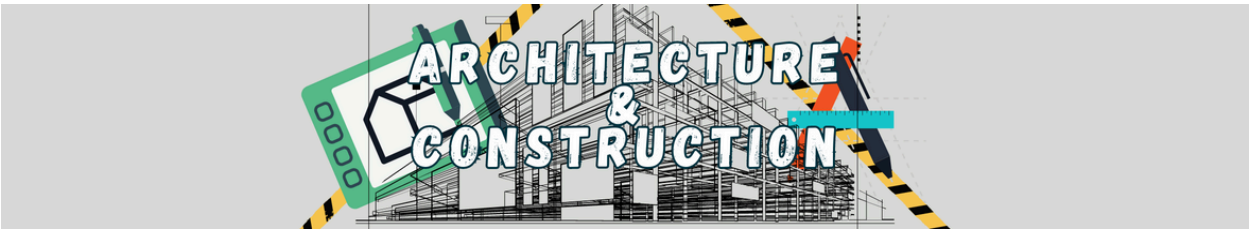
Day 7 : 3D Printing



Wednesday, July 19th, 2023

SDG Goal - Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation

Lesson Goals:

- Students will be able to understand how to utilize a 3d printer and the purpose of using the printer for the design process.
- Students will be able to begin printing designs and following the engineering process to make their final builds.

Essential Question:	**Materials / Printables:**	**Computer Tabs / Sites:** *You may find it helpful to have these tabs open on your computer and/or Interactive Panel.*
How does a 3D printed figure add to the Arckit model to better demonstrate architectural features?	☐ EDP Blueprint ☐ See THink Wonder activity ☐ 321 exit Ticket – can be done on paper.	• Bridge Website • EDP Site • Bookcreator • Tinkercad Other resources: • Tinkercad Tutorials
Morning Meeting 8:30 - 9:30		
Welcome, and Morning Meeting Ice Breaker— To Be determined by the teacher.		

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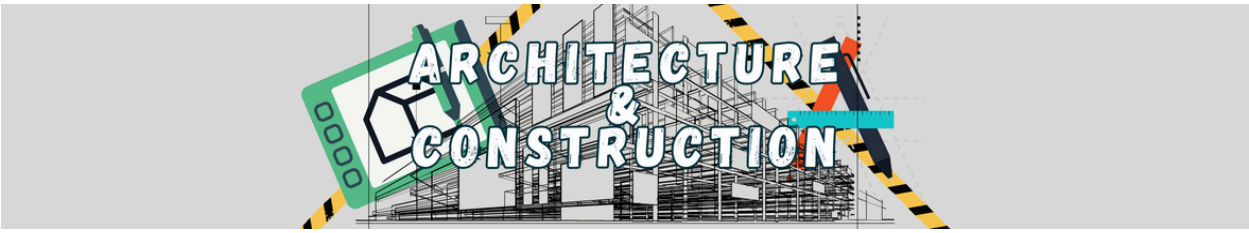
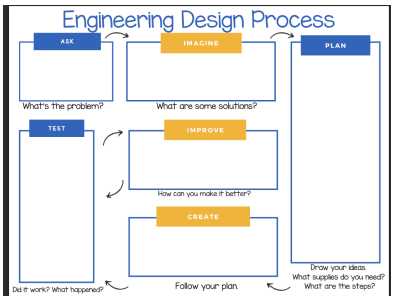


Research/Activity
9:30 - 11:30

Mini-Lesson: (9:30-9:45)



The teacher will lead the students in the creation of a new EDP Blueprint for the Tinkercad design that they are choosing to create to add to their model.

Students will then begin learning about Tinkercad through online tutorials at Tinkercad website

Work Time: (10:00-11:15)

TINKERCAD AUTODESK Tinkercad

Students will create their own Tinkercad design to add to their final scale model.

A timer will be set for students to make their models. If students can not decide as a team, a remix of a sample will be provided for them to 3d print due to time.

DTLS and the teachers will walk through to support the students as they are making their designs.

Reconnection: (11:15-11:30)

Students will complete the See Think Wonder activity to further discuss their ideas about why the design they selected for printing is the best.

After completion of the See, Think, Wonder activity, students will vote on the Tinkercad design(s) that will be sent to the printer for rendering.

Teachers will support DTLS with the facilitation of the voting process.

Lunch
11:30 - 12:30

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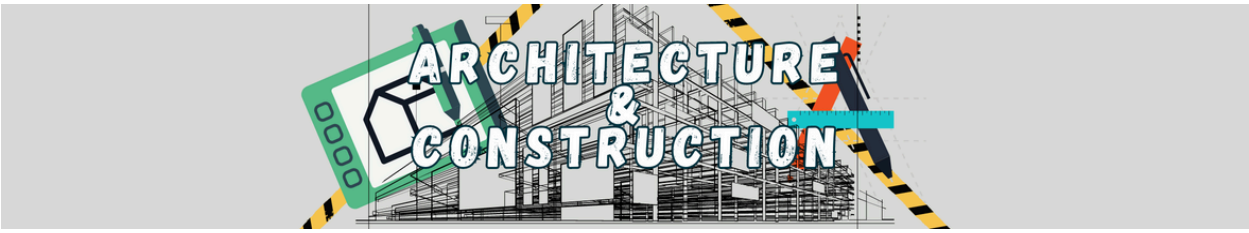

Research/Exploration
12:30 - 2:00

Mini-Lesson: (12:30-1:00)

The teacher will have the students meet with the Environemental GROUP. The teacher will lead the group in a mini-lesson about the different camps and how they will impact the design process of the prototype they have created.

The teacher will guide the students in a conversation about how both projects are impacted. They will discuss and all students will complete a Connect, Extend, Challenge for them to think about how these Connect, what improvements they need to make, and challenge their thinking. In addition to this thinking process with the studentsThey will make a plan for what the environmental group will design around the project completed by architecture group So both teams are on the same page for the final design.

Work Time: (1:00-1:45)

The DTLS team will prepare the 3d renderings for the students but have students involved in this step as much as possible.

If in need of another activity, while the 3d printing is rendering, students may:

- Continue making drafts in Tinkercad
- Explore other 3d print software

Tentatively, we are working on two of the camps meeting together to discuss their findings and how to add to each other's final products. If this works out, this will be the plan for this time period.

Reconnection: (1:45-2:00)

If students come back from meeting with another camp, then they may have a discussion about what they think we need to do to better our plans using the Engineering Design process.

If students were unable to attend another camp, then have students write a 3.2.1 exit ticket

3 things they learned about 3d printing, 2 things they liked most, and 1 thing they still have questions about

They also need to reflect in book creator.

BOOK CREATOR

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Closing Questions/Clean-Up/Reflection
2 - 2:30

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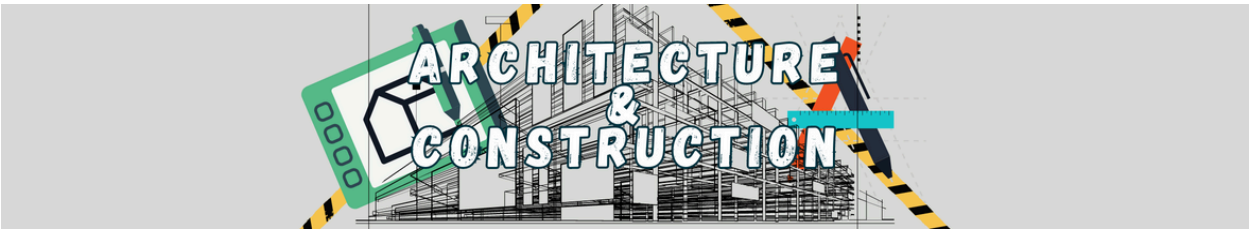

Students will open their Bookcreator Remix and complete their reflection for that day.

Question Prompts:

- How might a professional use 3D printing in the planning or construction field?
- How did learning about ADA compliance on Day 4 help in your Tinkercad project?