MP4-VR & 3D Printing

Content Area: **G&T**
Course(s): **G&T 4**
Time Period: **Marking Period 4**
Length: **MP4**
Status: **Published**

Activities

VR Activities

- Students will be going on Google Expeditions Adventures to introduce the kids to Virtual Reality. They will be able to see how VR works, be able to experience things they wouldn't normally see.

- Once the kids get a handle on VR, they will then create their own museum on a subject of their choosing. This museum will then get uploaded to the VR goggles where they and their classmate are able to take a tour through their museum.

3D Printing Activities

- Students will be introduced to what 3D printers are, what they are used for and what they can create.

- Students will then be able to make their own creations through the website Tinkercad.com. Once they have created their design, the student will be able to actually print their idea and present it to the class.

Enduring Understandings

ISTE - The International Society for Technology in Education

1.c. Students explore age-appropriate technologies and begin to transfer their learning to different tools or learning environments.

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4.a. Students engage in a cyclical design process to develop prototypes and reflect on the role that trial and error plays.

4.b. Students use age-appropriate digital and non-digital tools to design something and are aware of the step-by-step process of designing.

4.d Students demonstrate perseverance when working with open-ended problems.

5.c. Break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

5.d. Students understand and explore basic concepts related to automation, patterns, and algorithmic thinking.

6.b. Students use digital tools to create original works.

6.c. Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.

6.d. Students publish or present content that customizes the message and medium for their intended audiences.

7.a. Use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.

NGSS - Next Generation Science Standards

Asking Questions and Defining Problems - A practice of science is to ask and refine questions that lead to descriptions and explanations of how the natural and designed world works and which can be empirically tested.

Developing and Using Models - A practice of both science and engineering is to use and construct models as helpful tools for representing ideas and explanations. These tools include diagrams, drawings, physical replicas, mathematical representations, analogies, and computer simulations.

3-5-ETS1-2: Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem.

3-5-ETS1-3: Tests are often designed to identify failure points or difficulties, which suggest the elements of the design that need to be improved.

K-2-ETS1-1: Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

K-2-ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

CSTA - The Computer Science Teachers Association

1A-IC-16: Compare how computing technology has changed the way people live and work.

1A-IC-17: Work respectfully and responsibly with others online.

1B-AP-16: Using correct terminology, describe steps taken and choices made during the iterative process of program development.

Common Core

CCSS.ELA-LITERACY.W.2.8: Recall information from experiences or gather information from provided sources to answer a question.

CCSS.ELA-LITERACY.SL.1.2: Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

CCSS.ELA-LITERACY.SL.3.4: Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

CCSS.ELA-LITERACY.SL.K.2: Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.

CCSS.ELA-LITERACY.SL.K.5: Add drawings or other visual displays to descriptions as desired to provide additional detail.