DECODING DA VINCI

GRADES 7-8

NGSS MS-ETS1-4:	Art: 3. Students select and use the qualities of structures and functions of art to improve communication of their ideas.

TEACHER(S):

DURATION: One 30-45 minute class period

21st CENTURY SKILLS:

- [x] Critical Thinking
- [x] Creative Thinking
- [ ] Collaborating
- [ ] Initiative
- [ ] Communicating
- [ ] Media Literacy
- [x] Informational Literacy
- [ ] Tech Literacy
- [ ] Flexibility
- [ ] Social Skills
- [ ] Leadership
- [ ] Productivity

PRE-ASSESSMENT

Ask students to find an ordinary object in the classroom environment, photograph it and sketch it in a visual journal. Pre-assess their ability to accurately depict the Object with proper proportion, detail and structure.

ENGAGEMENT

Ask students to compare their sketch to the object. Think about ways this object could be more functional or used in a different way. Ask students to write down their ideas using question statements such as "what would happen if..." and "if I changed _____, then _____ ?"

LESSON SEQUENCE

Step 1: Ask students to view examples of daVinci's sketchbooks. Engage in discussions about how daVinci used art as an avenue to understand and experiment with scientific principles through his sketchbooks.

Step 2: Compare daVinci's observations and questions with their own. What is the same? What is different? Focus on his sketches on Flying Machines. What questions are being explored? How did daVinci use traditional mathematical practices to challenge convention and create something new?

Step 3: Look at the sketches of their own objects and their explorative questions. Challenge students to create a new invention using their original object as inspiration. Use the current structures and form as a framework for their new inventions. Students can work in teams or alone.

TEACHER NOTES

MATERIALS LIST:

- Scratch website
- DaVinci Sketches
- Visual Journaling background
- pencils, pens
- journals
- digital cameras/ phones
- computers
- printers

ASSESSMENT:

Coding Your Invention

Ask students to upload either the sketch of their item or the digital photograph of their chosen object. Then, using scratch.mit.edu, program their object to function as they intend in their new iteration of this found object. IE: a pen shows a hollogram of its writing. Code the pen to do this through Scratch. Grade based upon a teacher-created rubric using both the Science and the Arts standards.

CLOSING

Students will share their uncommon "common objects" inventions with the class. Explore how to create these as a prototype using the online programming tool from scratch.mit.edu