7th Grade Computer
2019-2020
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Scope
- This course is offered three times every two weeks for **three** quarters of the entire year. It is designed to develop a deeper level of use of the computer as a viable tool in their career as middle school students.
- MAKING in the Middle School

Learning Objectives
- By providing them with weekly hands-on computer lessons, students will:
  - o Become familiar with technology related vocabulary
  - o Gain an in-depth working knowledge of:
    - ▪ Scratch to create interactive game
      - • Conditional statements (if, if/else, when touching sprites, x or y location)
      - • Loops (forever, repeat, repeat until)
      - • Create variables (score, timer)
      - • Define and call Functions
      - • Adobe Photoshop to edit images found on the internet
      - • Audacity to edit and record audio for multimedia projects

    - ▪ Physical computing with MakeyMakey to create custom controller
      - • Students will use the Stanford's Design Thinking Method to create a custom game controller to be used by a specific age group (pre-K/first grade)

    - ▪ TinkerCad to design and create 3D printed objects
      - • Take the 2D model used with Makey Makey to create it in 3D.
      - • Export file as .stl, utilize a slicer program, and troubleshoot and problem solve settings if not working properly

    - ▪ Lego Robotics Mindstorm to build robots and program to perform specific tasks.
      - • Top Down Design
      - • Structure of program
      - • Conditional statements
      - • Use of Sensors
        - o Loops
        - o Switches

    - • Physical Computing:

- Physical computing with the **HummingBird** Kit to use as a final project to incorporate into programming with Scratch :
  - Sensors and Wiring
  - Incorporate Sensors

- Physical computing with the **CircuitPlayground Express**
  - Using sensors to light up LEDs
  - Motors

Homework

- [TinkerCad](#) online tutorial to prepare for 3D design.
- Continue to practice keyboarding using online typing program to become more proficient and to build speed. Click [here](#) for the link to TypingPal.com
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Method of Assessment
- Students will demonstrate proficiency of specific skills by working independently on computer and collaboratively with a partner

Grading
- Students will be rewarded primarily for maintaining a high level of effort and demonstrating a positive attitude as they pursue increasing levels of interaction with the computer.