May Gr. 4

Content Area: **Technology**
Course(s):
Time Period: **May**
Length: **4-5 Weeks**
Status: **Published**

Unit Overview

Students continue to explore coding.

Enduring Understandings

We can use certain programs to write sophisticated code.

Essential Questions

How do we write code?

Instructional Strategies & Learning Activities

Objective: **SCRATCH - Create a "Make It Fly" Animation/Game (DAY 2 - complete initial code, add 'challenges')**
The student will be able to create a Pong game for 1 player, choosing a backdrop, ball and paddle ('sprites') and creating the code to move the ball and paddle while adding game components to add to the user experience.

: **CHALLENGE** - Add additional sprites and backdrop changes based on changing score levels.

Differentiation:
Students will be able to choose all sprites/backdrops/sounds, and ALL coding elements for CHALLENGE.

Assessment:
Rubric

Objective: Everyday Robots! - ReadWorks and You Tube video
The student will be able to learn about real life robots and their real impact on society.

Differentiation:
Fact-based opinions

Assessment:

Objective questions checked to Answer Key

Objective: Coding - ONLINE activites code.org (Course E)
The student will be able to begin to learn and understand basic concepts about coding - algorithms, loops, & conditionals - creating code in a "blockly" language which writes Javascript 'under the hood'.
Emphasize: *Programs written using the least amount of code run more efficiently.*
Most students working on LOOP and NESTED LOOP - some students now exploring FUNCTIONS

Differentiation:
Self-paced

Assessment:
Teacher dashboard reports

Integration of Career Readiness, Life Literacies and Key Skills

9.2.5.CAP.1	Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.
9.2.5.CAP.2	Identify how you might like to earn an income.
9.2.5.CAP.3	Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
9.2.5.CAP.4	Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.
9.4.5.CT.4	Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
9.4.5.DC.4	Model safe, legal, and ethical behavior when using online or offline technology (e.g., 8.1.5.NI.2).
9.4.5.DC.5	Identify the characteristics of a positive and negative online identity and the lasting implications of online activity.

Technology and Design Integration

See activities above and standards below.

8.1.5.DA.1	Collect, organize, and display data in order to highlight relationships or support a claim.
8.1.5.DA.2	Compare the amount of storage space required for different types of data.
8.1.5.DA.3	Organize and present collected data visually to communicate insights gained from different views of the data.
8.1.5.AP.1	Compare and refine multiple algorithms for the same task and determine which is the most appropriate.
8.1.5.AP.2	Create programs that use clearly named variables to store and modify data.
8.1.5.AP.3	Create programs that include sequences, events, loops, and conditionals.

8.1.5.AP.4	Break down problems into smaller, manageable sub-problems to facilitate program development.
8.1.5.AP.5	Modify, remix, or incorporate pieces of existing programs into one's own work to add additional features or create a new program.
8.1.5.AP.6	Develop programs using an iterative process, implement the program design, and test the program to ensure it works as intended.

Interdisciplinary Connections

LA.RI.4.1	Refer to details and examples in a text and make relevant connections when explaining what the text says explicitly and when drawing inferences from the text.
LA.RI.4.4	Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
LA.RI.4.5	Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
LA.RI.4.7	Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
LA.RF.4.3	Know and apply grade-level phonics and word analysis skills in decoding and encoding words.
LA.RF.4.4	Read with sufficient accuracy and fluency to support comprehension.
LA.W.4.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
LA.W.4.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
LA.W.4.4	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
LA.W.4.6	With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.
LA.W.4.7	Conduct short research projects that build knowledge through investigation of different aspects of a topic.

Differentiation

- Understand that gifted students, just like all students, come to school to learn and be challenged.
- Pre-assess your students. Find out their areas of strength as well as those areas you may need to address before students move on.
- Consider grouping gifted students together for at least part of the school day.
- Plan for differentiation. Consider pre-assessments, extension activities, and compacting the curriculum.
- Use phrases like "You've shown you don't need more practice" or "You need more practice" instead of words like "qualify" or "eligible" when referring to extension work.
- Encourage high-ability students to take on challenges. Because they're often used to getting good grades, gifted students may be risk averse.

- **Definitions of Differentiation Components**:
    - Content – the specific information that is to be taught in the lesson/unit/course of instruction.
    - Process – how the student will acquire the content information.
    - Product – how the student will demonstrate understanding of the content.
    - Learning Environment – the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:

When applicable, differentiation is listed in activities above.

Modifications & Accommodations

Refer to QSAC EXCEL SMALL SPED ACCOMMOCATIONS spreadsheet in this discipline.

Modifications and Accommodations used in this unit:

IEP and 504 accommodations will be utilized.

Benchmark Assessments

Benchmark Assessments are given periodically (e.g., at the end of every quarter or as frequently as once per month) throughout a school year to establish baseline achievement data and measure progress toward a standard or set of academic standards and goals.

Schoolwide Benchmark assessments:

Aimsweb benchmarks 3X a year

Linkit Benchmarks 3X a year

DRA

Additional Benchmarks used in this unit:

Teacher made assessments to measure growth.

Formative Assessments

Assessment allows both instructor and student to monitor progress towards achieving learning objectives, and can be approached in a variety of ways. **Formative assessment** refers to tools that identify misconceptions, struggles, and learning gaps along the way and assess how to close those gaps. It includes effective tools for helping to shape learning, and can even bolster students' abilities to take ownership of their learning when they understand that the goal is to improve learning, not apply final marks (Trumbull and Lash, 2013). It can include students assessing themselves, peers, or even the instructor, through writing, quizzes, conversation, and more. In short, formative assessment occurs throughout a class or course, and seeks to improve student achievement of learning objectives through approaches that can support specific student needs (Theal and Franklin, 2010, p. 151).

Formative Assessments used in this unit:

Discussion

Teacher observations

projects

Summative Assessments

summative assessments evaluate student learning, knowledge, proficiency, or success at the conclusion of an instructional period, like a unit, course, or program. Summative assessments are almost always formally graded and often heavily weighted (though they do not need to be). Summative assessment can be used to great effect in conjunction and alignment with formative assessment, and instructors can consider a variety of ways to combine these approaches.

Summative assessments for this unit:

Projects

See assessments listed above.

Instructional Materials

Materials as needed for above projects.

Standards

See Standards above.