Jan. Gr. 3 January

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

Unit Overview

Introduction to Coding.

Enduring Understandings

We control what the computer does though Coding.

Essential Questions

What is coding?

Instructional Strategies & Learning Activities

Objective: Intro to Coding - ONLINE activites code.org (Course D - NEW !)
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'.

Differentiation:
Self-paced

Assessment:
Teacher dashboard reports **Objective: Intro to Coding - ONLINE activites code.org (Course D - NEW !)**
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Assessment:
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Integration of Career Readiness, Life Literacies and Key Skills

Students will learn about careers in coding.

	Collaboration with individuals with diverse perspectives can result in new ways of thinking and/or innovative solutions.
	An individual's passions, aptitude and skills can affect his/her employment and earning potential.
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.CI.3	Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).
	The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.
9.4.5.CT.1	Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
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	Digital Citizenship
	Intellectual property rights exist to protect the original works of individuals. It is allowable

	to use other people's ideas in one's own work provided that proper credit is given to the original source.
9.4.5.DC.4	Model safe, legal, and ethical behavior when using online or offline technology (e.g., 8.1.5.NI.2).

Computer Science and Design Thinking

See activities and standards below.

	Computing devices may be connected to other devices to form a system as a way to extend their capabilities.
8.1.5.CS.1	Model how computing devices connect to other components to form a system.
	Software and hardware work together as a system to accomplish tasks (e.g., sending, receiving, processing, and storing units of information).
8.1.5.CS.2	Model how computer software and hardware work together as a system to accomplish tasks.
	Shared features allow for common troubleshooting strategies that can be effective for many systems.
8.1.5.CS.3	Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.
AP	Algorithms & Programming
	Different algorithms can achieve the same result. Some algorithms are more appropriate for a specific use than others.
8.1.5.AP.1	Compare and refine multiple algorithms for the same task and determine which is the most appropriate.
	Programming languages provide variables, which are used to store and modify data.
8.1.5.AP.2	Create programs that use clearly named variables to store and modify data.
	A variety of control structures are used to change the flow of program execution (e.g., sequences, events, loops, conditionals).
8.1.5.AP.3	Create programs that include sequences, events, loops, and conditionals.
	Programs can be broken down into smaller parts to facilitate their design, implementation, and review. Programs can also be created by incorporating smaller portions of programs that already exist.
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.
	Individuals develop programs using an iterative process involving design, implementation, testing, and review.
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.2.1	Ask and answer such questions as who, what, where, when, why, and how to demonstrate

	understanding of key details in a text.
LA.RI.2.4	Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
LA.RI.2.5	Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
LA.RI.2.7	Explain how specific illustrations and images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
LA.RF.2.3	Know and apply grade-level phonics and word analysis skills in decoding words.
LA.RF.2.4	Read with sufficient accuracy and fluency to support comprehension.
LA.W.2.6	With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
LA.SL.2.1	Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
LA.L.2.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

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:

Differentiation will be offered as listed in the above activities.

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 pre and post assessments to measure growth over time.

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 observation

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:

Final projects

Assessments listed above.

Instructional Materials

Materials as needed for projects.

Standards

See above