Rossville Middle/Senior High School
Curriculum Map

Course: Computer Science 8th Grade	Quarter 1/2 Quarter 3/4 Semester Course	Academic Year: 2023-2024

Essential Questions for this Unit:

1. Why would I want to use a Graphics Program to Draw?
2. How would I draw using a Graphics Program?
3. What does a storyboard do in the design process?
4. Why types of projects could I use a storyboard for?
5. Why would I want to use a Web Authoring Tool?
6. How do I use a Web Authoring Tool?
7. How do I use Graphics with a Web Authoring Tool?
8. What is the purpose of using a Web Authoring Tool to present information?

Unit	**Data and Information**
Time Frame	**2 Weeks**
Standards	6-8.DI.1: Decompose (break down) problems into smaller, more manageable subsets by applying the algorithmic problem solving steps to make the possible solutions easier to follow, test, and debug. 6-8.DI.2: Collect data using computational tools (e.g., sensors, inputs like microphones) and transform the data to make it more useful and reliable. 6-8.DI.3: Examine the data represented by different program variables to ensure consistent format and remove errors. 6-8.DI.4: Describe that data can be represented in multiple encoding schemes such as binary, RGB values, hexadecimal codes 6-8.DI.5: Create visuals such as flowcharts, diagrams, pseudocode to represent complex problems as algorithms.

Content	1-Google Logo Draw Assignments 2-All About Me Storyboard 3-All About Me Website 4-All About Me Presentation
Skills/Objectives	1. Fostering an inclusive computing culture; 2. Collaborating around computing; 3. Recognizing and defining computational problems; 4. Developing and using abstractions; 5. Creating computational artifacts; 6. Testing and refining computational artifacts 7. Communicating about computing
Assessment	Google Drawing Rubric All About Me Rubric
Resources	Google Drawing YouTube Tutorials Word Document Wix.Com

Essential Questions for this Unit:

1. How Can I take a set of Information learned and create a Digital Project on my own?

Unit	**Digital Literacy**
Time Frame	**3 Weeks**
Standards	6-8.DL.1: Select appropriate tools and technology resources to support learning and personal productivity, publish individual products, and design, develop, and publish data, accomplish a variety of tasks, and solve problems. 6-8.DL.2: Distribute tasks and maintain a project timeline when collaboratively developing computational artifacts. 6-8.DL.3: Demonstrate an understanding of the relationship between hardware and software.
Content	Lesson 1-Organizing a Google Drive Lesson 2-Summer Memories Email Assignment Lesson 3-US Presidents Google Doc Assignment Lesson 4-Social Media Users Google Sheets Assignment Lesson 5-Summer Plans Google Slides Assignment Lesson 6-Creating a Streaming Service Site Assignment Lesson 7-Story Starter Movie Trailer Project
Skills/Objectives	1. Fostering an inclusive computing culture; 2. Collaborating around computing; 3. Recognizing and defining computational problems; 4. Developing and using abstractions; 5. Creating computational artifacts; 6. Testing and refining computational artifacts 7. Communicating about computing
Assessment	Completed Lesson Assignments Streaming Service Site Rubric Story Starter Trailer Project Rubric
Resources	Video Editing Software Google Apps Internet Computer

Essential Questions for this Unit:

1. What is a Computer Physical Components?
2. How do you Input Data into a Computer?
3. How do you Output Data with a Computer?
4. How does the Computer Process the Data that You Put In?
5. What are the different processes for storing data on a Computer?
6. How can you create an App that processes Input Data and give Output Data?

Unit	**Computing Devices and Systems**
Time Frame	**2 Weeks**
Standards	6-8.CD.1: Design projects that combine hardware and software components to collect and exchange data. 6-8.CD.2: Systematically identify and fix problems (troubleshoot) with computing devices and their components (e.g. checklist, decision tree, flowchart). 6-8.CD.3: Recommend improvements to the design of computing devices, based on analysis of how users interact with the devices. 6-8.CD.4: Describe what distinguishes humans from machines focusing on ways we can communicate, as well as ways in which computers use models of intelligent behavior (e.g., robot motion, speech and language understanding, and computer vision).
Content	1-Code.org Lesson 2-4 What is a Computer? 2-Code.org Lesson 2-5 Input and Output 3-Code.org Lesson 2-6 Processing 4-Code.org Lesson 2-7 Storage 5-Code.org Lesson 2-8 Propose an App
Skills/Objectives	1. Fostering an inclusive computing culture; 2. Collaborating around computing; 3. Recognizing and defining computational problems; 4. Developing and using abstractions; 5. Creating computational artifacts; 6. Testing and refining computational artifacts

	7. Communicating about computing
Assessment	Propose an App Rubric
Resources	Code.org Website

Essential Questions for this Unit:

1. How can you use a computer program to design a Game?
2. What are the steps for the Programming Process?
3. What are the different Programming stages in designing a Game?
4. What are the basic steps in Designing a Game?
5. Why Do I Test and Debug a Game I Have Created?
6. How Do I Test and Debug a Game I Have Created?

Unit	**Programs and Algorithms**
Time Frame	**5 Weeks**
Standards	6-8.PA.1: Demonstrate dispositions to open-ended problem solving within programming (e.g., persistence, brainstorming, creativity, debugging, iterating). 6-8.PA.2: Modify, remix, or incorporate portions of an existing program into one's own work to develop something new or add more advanced features. 6-8.PA.3: Design and iteratively develop programs that combine the following: sequencing, looping (including nested loops), conditionals (including compound conditionals), expressions, variables, functions, and parameters. 6-8.PA.4: Systematically test and refine programs using a range of test cases 6-8.PA.5: Use the basic steps in the algorithmic problem-solving process to evaluate and revise solutions using a range of test cases. 6-8.PA.6: Incorporate existing code, media, and libraries into original programs and give attribution 6-8.PA.7: Document programs in order to make them easier to follow, test, and debug.

Content	1-Gamemaker Space Bubbles Game Tutorial 1 2-Gamemaker Space Bubbles Game Tutorial 2 3-Gamemaker Space Bubbles Game Tutorial 3 4-Gamemaker Space Bubbles Game Tutorial 4 5-Gamemaker Space Bubbles Game Tutorial 5 6-Gamemaker Personal Game Test
Skills/Objectives	1. Fostering an inclusive computing culture; 2. Collaborating around computing; 3. Recognizing and defining computational problems; 4. Developing and using abstractions; 5. Creating computational artifacts; 6. Testing and refining computational artifacts 7. Communicating about computing
Assessment	Gamemaker Space Bubbles Tutorial 1-5 Completion Gamemaker Personal Game Test Rubric
Resources	GameMaker Software Graphic Programs Internet

Course: Computer Science 8th Grade	Quarter 2	Academic Year: 2022-2023

Essential Questions for this Unit

1. How Do Computers Talk to One Another on the Internet?
2. Why is there a need for Cybersecurity?
3. How Do Hackers Get into Computer Networks to Get Data?
4. What is Cyberbullying?
5. What is the problem with Cyberbullying in the Real World and or School World?
6. Why is it important for giving Credit for Data you Use on the Internet?

Unit	**Networking and the Internet**
Time Frame	**3 Weeks**
Standards	6-8.NI.1: Explain how physical and cybersecurity measures protect electronic information. 6-8.NI.2: Model the role of protocols in transmitting data across networks and the internet. 6-8.NI.3: Apply multiple methods of encryption to model the secure transmission of information.
Content	1-Codehs.com Networking 2-1 Intro to the Internet 2-Codehs.com Networking 2-2 Internet Hardware 3-Codehs.com Networking 2-3 Internet Addresses 4-Codehs.com Networking 2-4 Domain Name System 5-Codehs.com Networking 2-5 Routing 6-Codehs.com Networking 2-6 Packets/Protocols 7-Codehs.com Networking 2-7 Impact of the Internet 8-Codehs.com Networking 2-8 Network Admin 9-Codehs.com Cybersecurity 4-1 What is Cybersecurity? 10-Codehs.com Cybersecurity 4-2 Impact of Cybersecurity 11-Codehs.com Cybersecurity 4-3 Hacking Ethics 12-Codehs.com Cybersecurity 4-4 The CIA Triad 13-Codehs.com Cybersecurity 4-5 Cryptology 14-Codehs.com Cybersecurity 4-6 Privacy and Security 15-Codehs.com Cybersecurity 4-7 Hash Functions 16-Codehs.com Cybersecurity 4-8 Cyberbullying 17-Codehs.com Cybersecurity 4-9 Creative Credit and Copyright 18-Project Public Service Announcement

Skills/Objectives	1. Fostering an inclusive computing culture; 2. Collaborating around computing; 3. Recognizing and defining computational problems; 4. Developing and using abstractions; 5. Creating computational artifacts; 6. Testing and refining computational artifacts 7. Communicating about computing
Assessment	Codehs.com Networking Tutorial 1-3 Completion Codehs.com Cybersecurity Tutorial 1-9 Completion Project Public Service Announcement Rubric
Resources	Codehs.com Computer Internet

Essential Questions for this Unit:

1. What is a digital footprint?
2. What is your digital footprint and reputation?
3. What does it mean that the internet is public and permanent?
4. Who looks at your digital footprint and reputation?
5. What are some recommended social media guideline?
6. How can you maintain your digital footprint?
7. What does your digital footprint say about you?
8. What is cyberbullying?
9. What are the impacts of cyberbullying?
10. Are there cyberbullying roles?
11. What do you do if you are being bullied?
12. What do you do if you see bullying?
13. How can you be an upstander?
14. What are some ways to stay safe online?
15. What are some online safety guidelines
16. What are data privacy and security?
17. How can you keep personal data secure and private?
18. What can happen if you data is stolen and what can you do about it?
19. What is information literacy?
20. How can you do effective internet searches?
21. What are some techniques for judging source legitimacy and identifying misinformation?
22. What is copyright?
23. What are the different types of copyright licenses

Unit	**Impact and Culture**
Time Frame	**3 Weeks**
Standards	K-2.IC.1 Practice responsible digital citizenship (legal and ethical behaviors) in the use of technology. K-2.IC.2 Identify positive and negative social and ethical behaviors for using technology. 3-5.IC.1 Discuss basic issues related to responsible use of technology and information, and the consequences of inappropriate use.

	3-5.IC.2 Identify the impact of technology (e.g., social networking, cyber bullying, mobile computing and communication, web technologies, cyber security, and virtualization) on personal life and society
Content	Digital Footprint and Reputation Cyberbullying Internet Safety Privacy and Security Information Literacy Creative Credit and Copyright Hacking Ethics
Skills/Objectives	1. Fostering an inclusive computing culture; 2. Collaborating around computing; 3. Recognizing and defining computational problems; 4. Developing and using abstractions; 5. Creating computational artifacts; 6. Testing and refining computational artifacts 7. Communicating about computing
Assessment	Completed CodeHS.com Lessons Digital Citizenship and Cyber Hygene Quiz Digital Citizenship Technology Project
Resources	CodeHS.Com Internet Computer