*ELA= Standards found in English Language Arts (SL= Speaking and Listening, RI=Reading Informational text, L = Language)

** LM= Standards found in Library Media (LM=Media Literacy)

***CS, NI, IC= Computer Science Standards

Materials Needed: An account for your child at Scratch - Imagine, Program, Share (mit.edu)**, Scratch Coding Cards (**here**), and Coding for Kids: Scratch (**here**), an account at canva.com, and a software that allows you to make charts and graphs (i.e. Microsoft Word)**

Computer Science Lesson 1

Standards Taught: 6.NI.1		

Materials:	Preparation:	Implementing the Lesson:
Computer Tablet or Phone Example of a username and password your child uses already (e.g. typing.com, email, prodigy)		Ask your child to name an activity they enjoy doing on the internet (e.g. playing a game, exploring a specific website, etc). Have your child go to that game, app, or website on a desktop or laptop. If required, ask your child to login to their account. Ask your child to note a specific piece of information within that game, app, or on the webpage (e.g. their high score, the daily challenge, or a paragraph or image of interest). Next, ask your child to close the browser on the computer and open the same game, app, or website on a tablet or phone. Ask your child to look for the same piece of information they noted before on the tablet or phone. Point out that the information is the same, though the computer and tablet/phone are not connected by wires or other hardware. Ask your child if they can explain how the phone/tablet knew the same information as the computer. Explain that these programs are on the internet, a network of computers that are connected and can communicate with each other. Briefly explain that there is a series of cables under the oceans that connect computers around the world with each other, allowing them to access the same information at the same time. Discuss how this may help us learn from, help, and talk to others, even if they are far away from us. Next, explain that computers work through a process of input, processing, and output capabilities. Input means the information and data we into the network. For example, someone used their own computer to program, or build, the game, app, or website your child enjoys so much. The program is a set of rules that tells the computer how to react to different input from those who play it. We often use a keyboard and a mouse to input things into a computer or network. Computers then take that input and process it, or change it into something that all computers understand. This works a little like a translator, changing the input into a new language that computers share. Finally, output is simply the computer sending the processed output to where a human can see it. For example, words you type on the keyboard show up on the screen, a picture added to a website is shown when someone accesses that webpage, or the arrow on the screen moves when you wiggle the mouse. Without output, we would not be able to see what we are doing on the computer and neither would others. Point out that, because accounts can be accessed on any computer, tablet, or phone, there is certain information that needs to be protected with a password. For example, if you don't want someone to steal the progress in your game, you lock the account with a password. A password on a computer is like a lock on a door. It makes it difficult for others to break in and see, take, or mess up your things. It's important to keep passwords secret, change them often, and be sure to log out of accounts before others use the computer. Briefly discuss other methods of keeping information safe on computers: virus protection, biometrics, and webcam safety (e.g. covering the camera when not in use).

Computer Science Lesson 2

Standards Taught: 6.IC.1

Materials:	Preparation:	Implementing the Lesson:
		Briefly review with your child what a bias is. Remind your child of what they've learned about how information and images can be altered or written in a way that shows only one side, select information, or a certain viewpoint. Explain that this is true of information and images found online. Point out that everything they see on a screen was written or created by human beings and can show bias, or an unfair view. Review methods for spotting and countering bias. Next, discuss accessibility to technology. Ask your child to list a few technologies in their lives that make things easier. Perhaps your family has a dishwasher, a laptop, or a phone with internet access. Maybe your family can afford access to certain software programs that help with daily life. Then, ask your child if all their friends have the same types of technologies. What about others throughout the world? Point out how life would change if one of these technologies was missing in their own life. What would be more difficult? What might be some benefits? Disadvantages? Briefly discuss how helping others gain access to the technologies they need may improve their lives and allow for ideas and discoveries to advance. Discuss methods and tools that can help make technologies more accessible to those who need it.

Computer Science Lesson 3

Standards Taught:		
Materials: Computer Scratch Account	**Preparation:**	**Implementing the Lesson:** Allow your child to log into their Scratch account and take time exploring building, playing on, and changing programs and games they've built or found. Help your child get familiar with the different blocks, commands, and aspects of the software.

Computer Science Lesson 4

Standards Taught:		
Materials: Computer Scratch Account Scratch Cards: Pink *Let's Dance*	**Preparation:**	**Implementing the Lesson:** Ask your child to work through the *Let's Dance* card set (9 cards).

Computer Science Lesson 5

Standards Taught: Review		
Materials: Scratch Account Scratch Card Group: *Animate a Name Cards (set of 7)*	**Preparation:**	**Implementing the Lesson:** Help your child log into their Scratch Account and work through the card set to review animation in Scratch.

Computer Science Lesson 6

Standards Taught: Review		
Materials: Scratch Account Scratch Card Group: *Create a Story* (set of 9)	**Preparation:**	**Implementing the Lesson:** Review the important parts of a good story with your child: character, plot and events, and setting. Then, help your child work through the card set, creating their own story with a scratch program.

Computer Science Lesson 7

Standards Taught: Review		

Materials:	Preparation:	Implementing the Lesson:
Scratch Account Scratch Card Set: *Virtual Pet Cards* (set of 7)		Point out that, when building a program, programmers build one set of instructions at a time and add them all together in the correct order. A program with ordered instructions is called an algorithm. Putting the instructions in the correct order is called sequencing. Without the correct order, programs may not run the way we want. Help your child work through the card set, creating their own virtual pet.

Computer Science Lesson 8

Standards Taught: 6.AP.1		
Materials: Scratch Account Scratch Card Set: *Pong Game Cards* (set of 6)	**Preparation:**	**Implementing the Lesson:** Review the following terms and their definitions with your child: *program, algorithm,* and *sequencing.* Point out that programs can be broken down into smaller steps. This is called decomposing. Then, help your child work through the card set, asking them to point out ways this algorithm is sequenced and how it can be decomposed.

Computer Science Lesson 9

Standards Taught: Review		
Materials: *Coding for Kids: Scratch* book by Matthew Highland Scratch Account	**Preparation:**	**Implementing the Lesson:** Review the terms your child has learned so far, asking them to describe the meaning of each. Next, introduce the term *conditionals*. Explain that a conditional is an event in a program that only happens when certain requirements, or conditions are met. If-Then blocks are conditionals because the Then only happens after the If. Review the information on pages 39-45 with your child. Then, allow them time to experiment with these blocks on Scratch.

Computer Science Lesson 10

Standards Taught: 6.AP.3, 6.AP.2, 6.CS.1		
Materials: *Coding for Kids: Scratch* book by Matthew Highland Scratch Account	**Preparation:**	**Implementing the Lesson:** Briefly review the terms covered so far with your child. Then, ask them if they know what *troubleshooting* or *debugging* are. Explain that sometimes a program doesn't run just right and has a problem, or bug. This can be caused by forgotten step, a wrong number, or another error when building the program. Before sharing a program with others, it is important to check it for bugs and work to debug, or fix the problems. This way, those who are using your program with have a good experience and your program will make sense. Work through Chapter 4 (pgs. 36-65) of the book with your child, allowing them to build a game and debug it. Ask your child to test their own game and then ask someone else to test it, too. Help your child fix any bugs they encounter. Allow your child to take an in-person or online coding class to help them further their understanding of programming and debugging.

Computer Science Lesson 11

Standards Taught: LM.ME.8, LM.ME.8.1, LM.ME.8.2, LM.ME.8.2.a, LM.ME.8.2.b, LM.ME.8.2.c

Materials:	Preparation:	Implementing the Lesson:
Account on canva.com Printer		Use canva.com and the tools there to create a flyer advertising a party that you've made up. Include a theme, date, time, place, and specific instructions for party-goers. Check spacing, spelling, and ensure that all writing is legible. Print your finished product for your portfolio.

Computer Science Lesson 12-15

Standards Taught: 6.CS.1, Review		

Materials:	Preparation:	Implementing the Lesson:
Scratch Account		Allow your child to explore the games that others have programmed and share on Scratch. Then, ask your child to design, build, test, debug, and share their own game. This project should take about four weeks. If possible, work through the design and building process with a friend or sibling. Encourage your child to consider who would play this game, why they would like it, how much time they would like to spend on it, and what would make it exciting to them.

Computer Science Lesson 16

Standards Taught: Review		
Materials: Scratch Account Scratch Cards *Coding for Kids: Scratch book by Matthew Highland*	**Preparation:**	**Implementing the Lesson:** Allow your child to use this Review lesson to finish their project, work on a set of cards they haven't done yet this year, or explore aspects within the book that they are interested in. Encourage your child to learn something new, explore, and experiment with programming.