

***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, AP, IT, CT = Computer Science Standards**

Materials Needed: Scratch Jr. App (you can find this on Apple AppStore, Google Play, or [here](#)), Scratch Jr., The Official Scratch Jr. Book ([here](#)), and Scratch Jr. Coding Cards ([here](#)), and a software that allows you to make charts and graphs (i.e. Microsoft Word)

Computer Science Lesson 1

Standards Taught: Review, 2.CS.1

| Materials: | Preparation: | Implementing the Lesson: |
|---|---------------------|--|
| Scratch Jr. App and an Account for your child | | <p>Allow your child to play on Scratch Jr. Give them time to experiment with and remind themselves of how different buttons and aspects work. Encourage your child to add the things they remember from last year to projects.</p> <p>Remind your child of the importance of checking battery levels, charging the device as needed, ensuring power cords are connected correctly, turning the device on and off to reboot if needed, and closing and re-opening the app when appropriate.</p> |

Computer Science Lesson 2

Standards Taught: 2.NI.1, 2.IC.2, LM.ML.14.1, LM.ML.14.2

| Materials: | Preparation: | Implementing the Lesson: |
|-----------------------------------|---------------------|---|
| Device with a password lock on it | | <p>Ask your child how your family protects your home. Discuss the fact that windows and doors have locks and valuables are stored away where they are not easily seen. Point out that devices have valuable information. This information can be stolen if not carefully protected, just as money sitting on your porch could be taken. Ask your child if they know how we protected the information on our devices.</p> <p>Point out that many devices and accounts use passwords. These passwords help protect our information by restricting access to the people who know the password. Like locking the doors on our home, it locks information away from those who might steal it. Show your child a password on your device. Point out that the password is like a key, allowing the user in if it is correct.</p> <p>Next, help your child navigate to one of their password-protected accounts (e.g. prodigy, email, etc.). Explain that passwords should be hard for other people to guess. Good passwords are something that you remember easily, but others wouldn't think of. Passwords should include at least one capital letter, one lowercase letter, one number, and one symbol. This mixture makes it more difficult for others to guess the password. Help your child create a new password of their choice following these guidelines. Emphasize that they will need to remember the password to enter the account again later.</p> <p>Finally, discuss the importance of keeping passwords private. Point out that if you gave everyone a key to your home there would be no point in locking the door, as anyone could gain access. Explain that passwords are like this. They should be kept private from anyone you do not trust with your account. Anyone who knows your password can open it and make changes.</p> |

Computer Science Lesson 3

Standards Taught: 2.AP.1, 2.AP.2

| Materials: | Preparation: | Implementing the Lesson: |
|--|---------------------|--|
| Scratch Jr. App Scratch Jr. Cards: Blue #1, 2, 3, & 4 | | <p>Ask your child to remind you what an algorithm is. If needed, remind them that an algorithm is a sequence of steps that accomplish a task. For example, to get a drink from a glass of water a person needs to: find a clean glass, fill it with water, raise it to their mouth, open their mouth, and take a drink. The steps that complete the tasks are an algorithm.</p> <p>Ask your child complete the four cards listed for this lesson. Point out that each task has a series of steps before it can be completed. These are algorithms.</p> |

Computer Science Lesson 4

Standards Taught: 2.AP.1, 2.AP.2

| Materials: | Preparation: | Implementing the Lesson: |
|---|---------------------|---|
| Scratch Jr. App Scratch Jr. Cards: Blue # 8, 9, 10, & 11 | | Ask your child to remind you of what an algorithm is. Then, ask them to complete the tasks on the cards listed for this lesson. |

Computer Science Lesson 5

Standards Taught: 2.AP.1, 2.AP.2

| Materials: | Preparation: | Implementing the Lesson: |
|--|---------------------|---|
| Scratch Jr. App Scratch Jr. Cards: Blue # 13, 14, 15, 16, & 17 | | Ask your child to remind you of what an algorithm is. Then, ask them to complete the tasks on the cards listed for this lesson. |

Computer Science Lesson 6

Standards Taught: 2.AP.4

| Materials: | Preparation: | Implementing the Lesson: |
|--|---------------------|---|
| Scratch Jr. App Scratch Jr. Card: Blue #18 | | Ask your child to work through the card listed. Explain that actions that are repeated over and over again in a program or algorithm are known as loops. Ask your child to point to the button in their program that creates the loop. Next, ask your child to write their own sequence containing a loop. |

Computer Science Lesson 7

Standards Taught: 2.AP.4, 2.AP.5

| Materials: | Preparation: | Implementing the Lesson: |
|---|--|--|
| Scratch Jr. App Scratch Jr. Card: Blue #25, Green Card #15 | Before the lesson, program the sequence on the blue card in your child's account. Ensure that there is an error in the code. | <p>Show your child the green scratch card. Explain that sometimes programs don't work exactly as we'd like them to. This means that there is a bug in the program. To fix the code, we need to debug it, or take steps to find out where the code is wrong.</p> <p>Show your child the program you created as well as the blue card. Explain that this program isn't doing what it is supposed to according to the directions on the card. Ask your child to make corrections to the program until it is debugged. Then, ask your child to describe the steps taken to create and debug the program.</p> |

Computer Science Lesson 8

Standards Taught: Review

| Materials: | Preparation: | Implementing the Lesson: |
|-------------------|---------------------|---|
| Scratch Jr. App | | Take time to review any concept your child is struggling with in computer science so far. Alternatively, allow your child time to explore and experiment with Scratch, Jr. or keyboarding skills. |

Computer Science Lesson 9

Standards Taught: 2.AP.1, 2.AP.2, 2.AP.3, 2.AP.4, 2.AP.5, LM.IR.8.1.e

| Materials: | Preparation: | Implementing the Lesson: |
|---|---------------------|---|
| Scratch or Scratch Jr. App Friend or Sibling | | Over the next four weeks, ask your child to complete a program while working with a friend or sibling. This week, they should plan the characters, setting, and plot of their program as well as what they want it to accomplish. Ask them to record this information on a blank paper, which they will save for next week. |

Computer Science Lessons 10-11

Standards Taught: 2.AP.1, 2.AP.2, 2.AP.3, 2.AP.4, 2.AP.5, LM.IR.8.1.e

| Materials: | Preparation: | Implementing the Lesson: |
|---|---------------------|--|
| Scratch or Scratch Jr. App Friend or Sibling | | Using the plans from the previous lesson, allow your child and their friend or sibling to begin coding their program. Encourage them to build together, debug, and troubleshoot until their program is exactly as they planned. This part of the lesson should take two weeks. |

Computer Science Lesson 12

Standards Taught: 2.AP.1, 2.AP.2, 2.AP.3, 2.AP.4, 2.AP.5, LM.IR.8.1.e

| Materials: | Preparation: | Implementing the Lesson: |
|---|---------------------|--|
| Scratch or Scratch Jr. App Friend or Sibling | | Allow your child and their friend/sibling to present their program to others. This may include friends or family members. Encourage them to discuss the process of building, debugging, and working together on a program. Finally, encourage your child to credit their friend/sibling with the parts they worked on as well as creators of any program pieces that were created by others. |

Computer Science Lesson 13

Standards Taught: Review

Materials:

Scratch Jr. App

Preparation:

Implementing the Lesson:

Take time to review any concept your child is struggling with in computer science so far. Alternatively, allow your child time to explore and experiment with Scratch, Jr. or keyboarding skills.

Computer Science Lesson 14

Standards Taught: 2.DA.1, 2.DA.2, 2.DA.3, LM.IR (all)

| Materials: | Preparation: | Implementing the Lesson: |
|--|--|--|
| <p>Microsoft Word or other software capable of creating a bar or picture graph</p> | <p>Prepare a bar graph showing a sample of 30 children and their favorite pets with the following data: 10 children like dogs, 5 children like cats, 11 children like fish, and 4 children like hamsters</p> | <p>Show your child the graph. Explain that it shows data (or information you've collected) in a picture form. This graph shows a classroom of children and their favorite animals. Ask your child to identify the most and least popular animals in the class. Next, explain that this is a second grade class. Ask them if you were to interview all three second grade classes in the same school, what do you think would be the most and least popular animals? Why?</p> |

Computer Science Lesson 15

Standards Taught: 2.DA.1, 2.DA.2, 2.DA.3, LM.IR (all)

| Materials: | Preparation: | Implementing the Lesson: |
|---|---------------------|---|
| Microsoft Word or other software capable of creating a bar or picture graph | | Using the graph from the previous lesson, teach your child how to create, save, and make changes to the graph within the software. Allow them to practice these skills as well. |

Computer Science Lesson 16

Standards Taught: 2.DA.1, 2.DA.2, 2.DA.3, LM.IR (all)

| Materials: | Preparation: | Implementing the Lesson: |
|--|---------------------|---|
| Blank paper A group of at least 20 people your child can survey | | Explain to your child that today they will be collecting their own data. Ask them to consider what they would like to know about a group of people. Examples include favorite color, shoe size, height, favorite food, favorite book, etc. Give your child the blank paper. Help them write a title for their survey at the top. Then, allow them to interview the group, tracking and recording data as they go. Encourage them to create categories that match answers and add a tally mark for each person that chooses that category. At the end, ask your child to count the total tally marks for each category. Save this paper for the next lesson. |

Computer Science Lesson 17

Standards Taught: 2.DA.1, 2.DA.2, 2.DA.3, LM.IR (all)

Materials:

Microsoft Word or other software capable of creating a bar or picture graph

Preparation:

Implementing the Lesson:

Using the data collected in the previous lesson, help your child build, modify, save, and print a graph representing their findings.

Computer Science Lesson 18

Standards Taught: 2.IC.1

| Materials: | Preparation: | Implementing the Lesson: |
|-------------------|---------------------|--|
| | | <p>Show your child an older and newer model of the same type of technology. Examples include: a typewriter and computer, a floppy disk or CD and jump drive, a landline phone and cell phone, or an old cell phone and a new. Ask them to point out the differences in these two technologies. Explain that they both have the same purpose, though the newer one is more efficient at its job.</p> <p>Discuss the changes this technology has brought to society. Examples may include: faster communication, better notetaking, more records, more information saved and shared, easier access to information, stored rather than remembered phone numbers, communication in more areas, faster processing times, etc.</p> |