

**\*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:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

### Materials:

Computer that can run Python software

Book: *Coding Projects in Python* found [here](#)

### Preparation:

### Implementing the Lesson:

Read Chapter 1 in the book and complete the download and installation of Python and IDLE on your chosen device.

## Computer Science Lesson 2

**Standards Taught:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
Computer that can run Python software  Book: <i>Coding Projects in Python</i> found <a href="#">here</a>		Read and work through the <i>Your First Program</i> section of the book found on pages 22-23. Then, complete the <i>Variables</i> section on pages 24-27.

### Computer Science Lesson 3

**Standards Taught:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
Computer that can run Python software  Book: <i>Coding Projects in Python</i> found <a href="#">here</a>		Read and work through the <i>Making Decisions</i> section of the book found on pages 28-31. Then, complete the <i>Loopy Loops</i> section on pages 32-35.

## Computer Science Lesson 4

**Standards Taught:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
Computer that can run Python software		Read and work through the <i>Animal Quiz</i> section of the book found on pages 36-41. Then, complete the <i>Hacks and Tweaks</i> section on pages 42-43.
Book: <i>Coding Projects in Python</i> found <a href="#">here</a>		

## Computer Science Lesson 5

**Standards Taught:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
<p>Computer that can run Python software</p> <p>Book: <i>Coding Projects in Python</i> found <a href="#">here</a></p>		<p>Read and work through the <i>Functions</i> section of the book found on pages 44-47. Then, complete the <i>Fixing Bugs</i> section on pages 48-51.</p>

## Computer Science Lesson 6

**Standards Taught:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
<p>Computer that can run Python software</p> <p>Book: <i>Coding Projects in Python</i> found <a href="#">here</a></p>		<p>Read and work through the <i>Password Picker</i> section of the book found on pages 52-56. Then, complete the <i>Hacks and Tweaks</i> section on page 57.</p>

## Computer Science Lesson 7

**Standards Taught:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
<p>Computer that can run Python software</p> <p>Book: <i>Coding Projects in Python</i> found <a href="#">here</a></p>		<p>Read and work through the <i>Modules</i> section of the book found on pages 58-59, the <i>Nine Lives</i> section found on pages 60-65, and the <i>Hacks and Tweaks</i> section on pages 66-69.</p>



## Computer Science Lesson 8

**Standards Taught:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
<p>Computer that can run Python software</p> <p>Book: <i>Coding Projects in Python</i> found <a href="#">here</a></p>		<p>Read and work through the <i>Robot Builder</i> section of the book found on pages 72-78. Then, complete the <i>Hacks and Tweaks</i> section on pages 79-81.</p>

## Computer Science Lesson 9

**Standards Taught:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4,

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
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. Focus on cooperation and collaboration as well as sticking to deadlines for each part of the process.

## Computer Science Lessons 10-11

**Standards Taught:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
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:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
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:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

### Materials:

Computer that can run Python software

Book: *Coding Projects in Python* found [here](#)

### Preparation:

### Implementing the Lesson:

Read and work through the *Kaleido-sprial* section of the book found on pages 82-89.

## Computer Science Lesson 14

**Standards Taught:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
<p>Computer that can run Python software</p> <p>Book: <i>Coding Projects in Python</i> found <a href="#">here</a></p>		<p>Read and work through the <i>Starry Night</i> section of the book found on pages 90-96. Then complete the <i>Hacks and Tweaks</i> section on page 97.</p>

## Computer Science Lesson 15

**Standards Taught:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
Computer that can run Python software  Book: <i>Coding Projects in Python</i> found <a href="#">here</a>		Skip to Chapter 4 of the book. Read and work through the <i>Countdown Calendar</i> section of the book found on pages 110-119.

## Computer Science Lesson 16

**Standards Taught:** 7.AP.1, 7.AP.2, 7.AP.3, 7.AP.4

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
<p>Computer that can run Python software</p> <p>Book: <i>Coding Projects in Python</i> found <a href="#">here</a></p>		<p>Skip to Chapter 5 of the book. Read and work through the <i>Caterpillar</i> section of the book found on pages 158-165. Then complete the <i>Hacks and Tweaks</i> section found on pages 165-167.</p>



## Computer Science Lesson 17

**Standards Taught:** 7.NI.1

**Materials:**

**Preparation:**

**Implementing the Lesson:**

Watch the video [here](#) about standards and protocols that computers and devices use to transmit data across networks and the Internet. Draw a diagram of the protocols commonly used to send an email (as seen on the video). Then, write a paragraph about how these protocols are necessary for the email to work properly and what would happen if one of them failed.

## Computer Science Lesson 18

Standards Taught: 7.DA.1

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
Software that can produce data graphs		<p>Use the data found <a href="#">here</a>. Choose a year listed in the data. Create the graphs listed below based on this data and cite the chart as your source.</p> <p>Graph 1: The population of Utah in your chosen year by age Graph 2: The population of Utah in your chosen year by sex Graph 3: The number of minors (age 17 and under) compared to legal adults (18+) in your chosen year</p> <p>Discuss with an adult what you can learn from the data and graphs and how this information may be useful to lawmakers, doctors, or other professionals.</p>

## Computer Science Lesson 19

**Standards Taught:** 7.CS.1, 7.IC.1

<b>Materials:</b>	<b>Preparation:</b>	<b>Implementing the Lesson:</b>
		<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 and cultural practices. 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. Discuss tradeoffs that have affected society in both positive and negative ways with regards to technology. Examples include: constant communication, attention disorders, mental illness, recreation, and family connections.</p> <p>Finally, discuss challenges some may experience when trying to access this technology. Examples may include: financial limits, physical differences such as blindness, deafness, or limited use of hands, lack of electricity, lack of resources needed to build technology, etc. Discuss ideas for overcoming these challenges. Then, help your child research work that has already been accomplished in that area.</p>