Course: Florida Coding Fundamentals | Module: System Administration

Lesson 3.1: Operating Systems

Description	In this lesson, students will learn about the basic functions and types of operating systems. Students will also explore the process for upgrading and updating operating systems.
Objective	Students will be able to: • Explain the purpose of operating systems • Identify the main types of operating systems • Analyze the upgrade and installation process for operating systems
Activities	3.1.1 Notes: Multi Task Challenge! 3.1.2 Video: Intro to Operating Systems 3.1.3 Article: Types of Operating Systems 3.1.4 Article: Operating Systems Practice 3.1.5 Free Response: OS Updates and Upgrades 3.1.6 Article: Windows Update Simulation 3.1.7 Free Response: Operating Systems Step Inside 3.1.8 Check for Understanding: Operating Systems Quiz
Prior Knowledge	• This is an introductory lesson and does not require prior knowledge.
Planning Notes	• There are multiple components and activities to this lesson. Consider when you will complete activities as a class and when students will complete activities independently or with a partner. • There is an alternative handout that accompanies this lesson. It can be used in place of the first assignment for an unplugged activity. Determine how and if this handout will be used.
Standards Addressed	
Teaching and Learning Strategies	**Lesson Opener:** • Have students brainstorm and write down answers to the discussion questions listed below. Students can work individually or

in groups/pairs. Have them share their responses. [5 mins]

Activities:

- Complete the *Multi-Task Challenge*! [5 mins]
  - You can use the handout in place of this activity as an unplugged version.
- Watch the *Operating Systems* lesson video. [7-12 mins]
- Read through the *Types of Operating Systems* article. [10-12 mins]
  - This topic and lesson contain a lot of vocabulary. Consider having students create a picture glossary for the new vocabulary.
- Complete the *Operating System Ordering Activity*. [5 mins]
  - This activity is a quick check for understanding.
- Complete the *OS Updates and Upgrades* activity. [10-15 mins]
  - Guide students through their research. Remind them of good search engine techniques.
- Work through the *Windows Update Simulation*. [5 mins]
  - Compare and contrast the students' current OS system and the one shown in the simulation.
- Complete the *Operating Systems Step Inside* activity. [5-10 mins]
  - Encourage creativity.
- Complete the *Operating Systems Quiz*. [5-10 mins]
  - This quiz can be used as an Exit Ticket for the lesson.

Lesson Closer:

- Have students reflect and discuss their responses to the end-of-class discussion questions. [5 mins]

Discussion Questions

Beginning of class:

- Describe a time when your computer did not do what you intended it to do.
  - *Answers may vary, but the goal here is to connect the specific challenge to the difficulty of speaking with computers.*
- What makes a computer a computer?
  - *Answers may vary, sample responses: the ability to perform computations quickly, the ability to access a wide variety of software or applications, the ability to connect to the internet*
- Have you ever had to upgrade your phone or computer software? What has that experience been like?
  - *Answers may vary, students may discuss the new features, the time, the need to restart, how they are informed of the upgrade, how some apps will stop running without the upgrade, the bugs that come with an upgrade*

End of Class:

- What are three things that the operating system is in charge of?
  - *The operating system controls hardware, runs software, provides a file structure, and manages and allocates memory.*

	- What are the three main types of operating systems?
	    ○ *Windows, MacOS and Linux.*
	- Write a haiku (5-7-5) that describes the importance of the operating system on a device.
	    ○ *Sample haiku: Without the OS/Hardware would be without life/Blank screen forever*

Resources/Handouts	[Multitask Challenges (Student)](#) [Multitask Challenges (Teacher)](#)

Vocabulary

Term	Definition

Modification: Advanced	Modification: Students Needing Additional Support	Modification: English Language Learners
- Challenge students to research the differences between the main operating systems. How are they similar? What makes them different?	- Print out video slides for students to reference - *Installing an OS* exercise: check-in with students after they have completed the first set of questions before moving on to the Windows OS questions to ensure they understand the key ideas. Alternatively, allow students to answer the Mac OS questions after the Mac OS video and then the Windows OS questions after the simulation.	- Print out video slides for students to reference - Allow students to use a dictionary to translate keywords: operating system, software