Concept: COMPUTING SYSTEMS			
Subconcept	**Measurable Learner Objective**	**DOK**	**Instructional Strategies/Student Activities/ Resources**
Devices	Use a computing device to perform a variety of tasks for an intended outcome	1-4 (depends on activity)	Mouse usage, keyboard, ipad touch screen, Chromebooks, robotics ● Keyboarding ● Word processing
Hardware & Software	4.CS.HS.01 Model how information is processed in order to flow through hardware and software.	1	● Networking Diagram with arrows to show the information flow between devices ● Word processing ● Keyboarding ● Nearpod lesson-The Internet of Things ● Kahoot on computer parts
Troubleshooting	4.CS.T.01 Identify simple hardware problems and apply strategies for solving problems that may occur during use.	2,3	● Rebooting the computer ● Checking the power ● Force shut down of an application

Concept: NETWORKS & THE INTERNET			
Subconcept	**Measurable Learner Objective**	**DOK**	**Instructional Strategies/Student Activities/ Resources**
Network Communication & Organization	4.NI.NCO.01 Review how information changes when sent and received over physical or wireless paths. (Information is broken into smaller parts, sent to the destination and then reassembled into a whole.)	1	Discuss “bits” and “bytes” and how information is binary with 0’s and 1’s ● Binary necklace-black and white beads for the two variables, make their first name

Cybersecurity	4.NI.C01 Discuss real-world cybersecurity problems and identify strategies for how personal information can be protected.	1	• Common sense media/digital footprint: Our online tracks

Concept: DATA & ANALYSIS			
Subconcept	**Measurable Learner Objective**	**DOK**	**Instructional Strategies/Student Activities/ Resources**
Storage	4.DA.S.01 Introduce different storage locations and how to share documents	1	Cloud storage Google drive Shared drives
Collection, Visualization & Transformation	4.D.CVT.01 Organize and present collected data visually.	2	charts, graphs, tables, surveys, forms, prezi, google slides
Inference and Models	4.DA.IM.01 Determine how the accuracy of conclusions are influenced by the amount of useful and reliable data collected.	3	Weather temperature Show me read vote Colors Literature read aloud discussions Nonfiction reports

Concept: ALGORITHMS & PROGRAMMING			
Subconcept	**Measurable Learner Objective**	**DOK**	**Instructional Strategies/Student Activities/ Resources**

Algorithms	4.AP.V.01 Compare and simplify multiple sets of instructions for accomplishing the same task.	3	Compare different paths robot can take on a grid Verbally, kinesthetically, robot devices or programming language "Algorithms" "Coding"
Control	4.AP.C.01 Create a program using control structures to solve a problem within a program, collaboratively or independently.	2,3	Examples: sequence, conditionals, interactive-looping, variables
Modularity	4.AP.M.01 Break down the steps needed to solve a problem.	3,4	"Decompose" Tynker Code.org Blockly Coding Option for advanced students: modify, remix or incorporate portions of an existing program into one's own work to develop something new or add more advanced features
Program Development	4.AP.PD.01 & 4.AP.PD.03 & 4.AP.PD.04 Collaborate to plan the development of a program while solving simple problems and share program with others.	3	Sequencing, repetition, conditionals, debugging ● https://code.org/curriculum/unplugged ● https://docs.google.com/document/d/1rX6Uw1PpqSK-7WarwM7ZNvFqJ_YrfTQNVCG_ZzWUbEk/edit

Concept: IMPACTS OF COMPUTING			
Digital Citizenship			
Subconcept	**Measurable Learner Objective**	**DOK**	**Instructional Strategies/Student Activities/ Resources**
Culture	4.IC.C.01 Give examples of technologies that have changed the world and express how those technologies influence, and	2	● History of technology ● Show websites that have pictures of devices for special needs ● https://www.timeforkids.com/g34/best-inventions-2018/

	are influenced by, cultural practices		• Show students the accessibility features of the Chromebook, ipad, etc.
	4.IC.C.01 Identify possible problems and how computing devices have built in features for increasing accessibility to all users.	1	
Social Interaction	4.IC.SI.01 Develop a code of conduct, explain and practice grade-level appropriate behavior and responsibilities while participating in an online community. Identify and report inappropriate behavior and know how to report cyberbullying.	2	Strong passwords, recognizing spam, citing online sources Digital citizenship • Nearpod lesson: Super digital citizens • Common sense media: digital passport game
Safety, Law & Ethics	4.IC.SLE.01 & 4.AP.PD.02 Discuss the social impact of violating intellectual property rights. Cite sources.	1	Plagiarism Copyright Infringement Citing Sources https://www.commonsense.org/education/digital-citizenship/lesson/a-creators-rights-and-responsibilities
	4.IC.SLE.02 Discuss and understand the implications of a negative digital footprint.	1	

Concepts: INQUIRE **Build new knowledge through research and critical thinking**			
Subconcept	**Measurable Learner Objective**	**DOK**	**Instructional Strategies/Student Activities/ Resources**
Research tools/print and media	Independently use and apply basic tools for research.	2	• Books • Reference-dictionary, encyclopedia, maps, atlas, thesaurus • Online sources, websites, World Book Online, You tube • Brainpop

			• Online library catalog • Library organizational structures
	Select and use navigational features, digital and print.	2	• Cover • Spine • Author • Illustrator • Title • Title page • Body • Copyright • Publisher • Place of publication • Table of contents • Index • Call number • Glossary • Appendix • Bibliography • Hyperlink • Menu bars • Search boxes
Source credibility	Recognize with assistance that not all sources are credible	1	• fact/opinion • Gaps in information • Relevance in relationship to the topic • Timeliness • Recognize that sources may contradict or varify others • Identify varying viewpoints in multiple sources • primary/secondary sources • Explain how viewpoint affects bias