Right Device Recommendations for Teaching and Learning Summary

	Lower Elementary Grades K-2 (ages 4-8)	Upper Elementary Grades 3-5 (ages 8-12)	Middle School Grades 6-8 (ages 12-14)	High School Grades 9-12 (ages 13-18)
Learning Activities	Develop fluency in reading. Build comprehension skills. Explore language through books, rhymes, and writing. Cultivate a strong foundation of mathematical skills. Learn addition and subtraction. Begin to understand more abstract mathematical concepts. Explore animals, nature, history and the wider world.	Increase mastery of basic literacy and writing skills through increased reading and literary analysis. Expand understanding of foundational math concepts. Continue to explore more complex problem solving. Develop cognitive and motor skills via stimulating activities and constructive teacher-student interaction.	Become more independent thinkers in preparation for high school. Understand themes from readings. Organize writing to demonstrate clear reasoning and credible research. Work with more abstract and complicated math concepts, and apply them to solve real-world problems.	Focus on college- and career-readiness skills: critical thinking, problem solving, collaboration, communication, creativity, and innovation. Read and analyze sophisticated and diverse texts. Synthesize learning across subjects. Apply complex mathematical computation and critical-thinking to real-world situations.
Teaching Strategy	Provide authentic interactivity to support learning.	Use a variety of teaching methods to support and encourage student development. Foster a friendly classroom environment in which children are challenged through focused, productive learning activities.	Focus on problem solving, computational thinking, exploration of multiple ways to approach issues and interactive lessons.	Create an authentic learning environment consisting of a wide array of learning activities, including content creation, productivity, research, collaboration, demonstration of knowledge, and access to supplementary and Internet materials.
Role of Technology	Inspire learning through purposeful, hands-on activities that further understanding of the subject matter and encourage both collaboration with peers and interaction with technology. Some students are able to use laptops, but some may lack the motor skills needed to operate a keyboard and mouse.	Support learning as teachers begin to integrate digital learning practices into a mix of traditional and student-centered learning processes. Increase student engagement. Enable regular monitoring of student progress via diagnostic platforms and data analysis.	Support independent, collaborative and inquiry-based problem-solving activities with more frequent use of digital resources. Connect learning to the world outside the school via the Internet through robust connectivity.	Transform the classroom with tools teachers and students can use to redesign learning activities, including high-end computing power for STEM, parallel program operations, and design curriculum. Enable students to increase their autonomy and control over their own pacing and progress with the right device and Internet access. Integrate formative assessment and self-reflection into lessons, reinforcing personalized learning.

	Lower Elementary Grades K-2 (ages 4-8)	Upper Elementary Grades 3-5 (ages 8-12)	Middle School Grades 6-8 (ages 12-14)	High School Grades 9-12 (ages 13-18)
Device Choices	**Students:** Tablets and 2-in-1s with touch or pen input enable collaboration and investigation of software and applications. Use for one-to-one access, pairs, small group collaborations, and/or classroom cart mobility. **Educators:** Mobile, full-featured 2-in-1s enable efficient classroom and communication management; creation of curriculum and digital content; reliable connection to personal learning communities for professional development; and access to the school's network and LMSs from anywhere, with the ability to store data or applications in the school's cloud.	**Students:** Tablets, Chromebook*, and 2-in-1s are best for this age group. **Educators:** Mobile, full-featured 2-in-1s, enable efficient classroom and communication management, creation and preparation of curriculum and digital content, reliable connection to personal learning communities, access to the school's network and LMSs from anywhere, and the ability to store data and applications in the school's cloud.	**Students:** Laptops, Chromebooks, and 2-in-1s are the best devices for this age group. **Educators:** For increased efficiency in classroom management, integrate technology into an ecosystem of interactive whiteboards, virtual learning platforms, and wireless connectivity. Form a digital portfolio for each student so parents and teachers can monitor progress, and teachers may personalize resources to each student's level as needed.	**Students:** A lightweight, flexible 2-in-1 or laptop can empower a learner with desktop performance, a full-sized keyboard with tablet capabilities, and an active stylus for easy annotating, drawing, or note taking. **Educators:** A laptop provides the flexibility, power and performance high school teachers need to manage their classroom effectively, integrate technology into an ecosystem of interactive whiteboards, provide virtual learning platforms and wireless connectivity, form a digital portfolio for each student to personalize learning, and access the school network and/or applications in the school's cloud from anywhere.

Maker

Maker education, closely associated with STEAM (science, technology, engineering, the arts, and math) is a project-based, hands-on approach to solving problems that is redefining teaching and learning spaces. It has gained popularity in the past decade as open-source software and hardware, digital tools, microcontroller platforms such as Arduino/Genuino, other low-cost electronics, robotics, and rapid prototyping tools such as 3D printers have become more easily accessible. Maker education is not set in stone by grade level or age. For students, it is more about building foundational skills and then expanding on those skills as they master different techniques. For teachers, safety is the biggest factor as they work to ensure that students at specific ages understand what they are doing and why.

Beginners (early elementary, ages 5-8)	Intermediate (upper elementary and middle school, ages 8-13)	Advanced (middle and high school, ages 13-18)	Teachers (of all grade levels)
Begin to learn reasoning and problem-solving skills via projects that introduce engineering, abstract and design thinking, and tangible programming concepts. Apply and reinforce skills learned through basic, hands-on activities that involve using tangible tools.	Shift focus from finding the right answer to asking the right questions and using the right tools. Develop diagnostic and problem-solving skills. Apply those skills to more complex activities. Projects may involve digital software programs and more advanced hardware tools such as laser cutters and 3D printers.	Apply the innovative process and skills learned previously to further enhance own learning and teach other students. Build, create, hack and innovate to address real-world problems. Using more complex hardware and software tools, bring electronics, programming and computational mathematics together in meaningful, powerful ways.	Shift the teaching process from transmitting knowledge to enabling students to solve problems on their own. Learn how to help students diagnose problems so that they, themselves, can create solutions. Immerse oneself in the maker movement. Attend professional development opportunities to learn how to drive a creative and innovative mindset and integrate maker into the classroom and curricula.