Montclair Public School District
Technology Scope and Sequence K-5
(Rev. August 18, 2015)

Introduction to the Scope and Sequence Document

The skills identified for each grade level align to both the New Jersey (2014) Core Curriculum Content Standards (CCCS) for Technology 8.1 EDUCATIONAL TECHNOLOGY as well as the Common Core State Standards (CCSS) for Mathematics and English Language Arts.

The scope and sequence roughly follows the NJCCCS 8.1, as follows:

A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations
B. Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
C. Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
D. Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
E. Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.
F. Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

English Language Arts Anchor Standards	Mathematics Standards
RL - Reading Standards for Literature; **RI** - Reading Standards for Informational Text; **W** - Writing; **SL** - Speaking and Listening; **L** - Language.	**MD –** Measurement and Data **G** - Geometry **EE** - Expressions and Equations **A** - Algebra **F** - Functions **SP** - Statistics and Probability **SMP** - Standards of Mathematical Practice

Most of the CCSS skills cover the skills that students will be required to have to take the online assessment.
Mathematical Standards of Practice (SMP) are also referenced as they encompass use of appropriate technology tools across various standards.

The Scope and Sequence identifies which grade levels the skills need to be Introduced (I), Reinforced (R) and Mastered (M).
Skills identified as Optional for Grade Level (O) are left to the discretion of the teacher who may choose to teach the skills to the students.

Elementary

A minimum of 30 instructional computer sessions are suggested to meet these requirements in K-5.

K-2 Suggestion

Standard A: 20 sessions
Standards B/C: 5 sessions
Standards D/E/F: 5 sessions

3-5 Suggestion

Standard A: 15 sessions
Standards B/C: 10 sessions
Standards D/E/F: 5 sessions

A: Technology Operations & Concepts		Alignment to NJCCCS/ CCSS	**Skills**	**K**	**1**	**2**	**3**	**4**	**5**
Demonstrate proficiency in the use of computers and applications as well as an understanding of the concepts underlying hardware, software and connectivity.	**Basic Operations**	CCSS skills NJCCCS-8.1.2.A.1	Turn on a computer and login	I	R	M	M	M	M
		NJCCCS-8.1.P.A.1	Use an input device to select an item and navigate the screen	I	R	M	M	M	M
		NJCCCS-8.1.P.A.2	Navigate the basic functions of a browser	I	R	M	M	M	M
		NJCCCS-8.1.P.A.3	Use digital devices to create stories with pictures, numbers, letters, and words.	I	R	M	M	M	M
		NJCCCS-8.1.P.A.4	Use basic technology terms in the proper contexts in conversation with peers and teachers (e.g. Camera, tablet, internet, mouse, keyboard, and printer).	I	R	M	M	M	M
		NJCCCS-8.1.P.A.5	Demonstrate the ability to access and use resources on a computing device	I	R	M	M	M	M
		CCSS skills NJCCCS-8.1.2.A.1	Use pointing device such as a mouse to manipulate shapes, icons; click on urls, radio buttons, check boxes; use scroll bar	I	R	M	M	M	M
		CCSS skills NJCCCS-8.1.2.A.1	Use desktop icons, windows and menus to open applications and documents	I	R	M	M	M	M
		CCSS skills	File management – saving documents	O	I	R	M	M	M
		CCSS skills NJCCCS-8.1.2.A.4; 8.1.2.5.A.1	Explain and use age-appropriate online tools and resources (e.g. tutorial, assessment, web browser)		I	R	M	M	M
		W 6	Keyboarding • Use proper posture and ergonomics • Locate and use letter and numbers keys with left and right hand placement. • Locate and use correct finger, hand for space bar, return/ enter and shift key • Gain proficiency and speed in touch typing	I	R	M	M	M	M
	Word Processing	W 5, W 6, W 10 NJCCCS-8.1.2.A.2; 8.1.5.A.2	Use a word processing application to write, edit, print and save simple assignments	I	R	M	M	M	M
		W 5, W 6, W 10 NJCCCS-8.1.2.A.2; 8.1.5.A.2	Use menu/tool bar functions (e.g. font/size/style/, line spacing, margins) to format, edit and print a document		I	R	M	M	M

A: Technology Operations & Concepts		Alignment to NJCCCS/ CCSS	Skills	K	1	2	3	4	5
	Word Processing (continued)	W.5, W6, W 10 NJCCCS-8.1.2.A.2, 8.1.5.A.2	Highlight text, copy and paste text		O	I	R	M	M
		W 5, W 6, W 10 NJCCCS-8.1.2.A.2; 8.1.5.A.2	Copy and paste images within the document and from outside sources. Insert and size a graphic in a document		I	R	M	M	M
		L 4	Proofread and edit writing using appropriate resources (e.g. dictionary, spell checker, grammar, and thesaurus).		O	I	R	M	M
Demonstrate proficiency in the use of computers and applications as well as an understanding of the concepts underlying hardware, software and connectivity.	**Spreadsheet (*Databases*/ Charts and Graphs)**	MD CCSS NJCCCS-8.1.2.A.5	Demonstrate an understanding of the spreadsheet as a tool to record, organize and graph information. Enter information into a spreadsheet and sort the information.			I	R	M	M
		MD NJCCCS-8.1.2.A.6 CCSS	Identify and explain terms and concepts related to spreadsheets/database (i.e. cell, column, row, values, labels, chart graph)			I	R	M	M
		MD NJCCCS-8.1.2.A.7 CCSS	Enter/edit data in spreadsheets and perform calculations using formulas. Enter information into database or spreadsheet and filter the information.			I	R	M	M
		NJCCCS-8.1.5.A.5, NJCCCS 8.1.5.A.6	Create and use a database to answer basic questions, Export data from a database into a spreadsheet; analyze and produce a report that explains the analysis of the data				I	R	M
		MD CCSS	Use mathematical symbols e.g. + add, - minus, *multiply, /divide, ^ exponents				I	R	M
		RI 7 NJCCCS-8.1.2.5.A.4	Use spreadsheets and other applications to make predictions, solve problems and draw conclusions. Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.				I	R	M
		NJCCCS-8.1.5.A.3	Use a graphic organizer to organize information about a problem or issue				I	R	M
I – Introduce	**R – Reinforce**	**M – Mastery (ability to teach others)**	**O – Optional for grade level**						

A: Technology Operations & Concepts (con't)		Alignment to NJCCCS/ CCSS	Skills	K	1	2	3	4	5
	Multimedia and Presentation Tools	W 6	Create, edit and format text on a slide		I	R	M	M	M
		W 6	Create a series of slides and organize them to present research or convey an idea			I	R	M	M
		W 6, SL 5	Copy and paste or import graphics; change their size and position on a slide			O	I	R	M
		W 6, SL 5	Use painting and drawing tools/ applications to create and edit work			I	R	M	M
		W 6, RL 7, CCSS skills	Watch online videos and use play, pause, rewind and forward buttons while taking notes	I	R	M	M	M	M
I – Introduce	**R – Reinforce**	**M – Mastery (ability to teach others)**	**O – Optional for grade level**						

B: Creativity & Innovation C: Communication & Collaboration			Skills	K	1	2	3	4	5
	Communi-cation and Collaboration	W 6 NJCCCS-8.1.5.B.1	Work collaboratively online with other students under teacher supervision. Collaborative to produce a digital story about a significant local event or issue based on first-person interviews.			I	R	M	M
		W 6, W 10 NJCCCS-8.1.2.C.1, 8.1.5.C.1	Use a variety of age-appropriate technologies (e.g. drawing program, presentation software) to communicate and exchange ideas. Engage in a variety of developmentally appropriate learning activities with students in other classes, school, or countries using various media formats such as online collaborative tools and social media. Engage in online discussions with learners of other cultures to investigate a world-wide issue from multi perspectives and source, evaluate findings and present possible solutions, using digital tools and online resources for all steps.		I	R	M	M	M
		W 6, W 10 NJCCCS 8.1.2.P.B.1; 8.1.2.B.1 SL 2, SL 5	Create projects that use text and various forms of graphics, audio, and video, (with proper citations) to communicate ideas. Create a story about a picture taken by the student on a digital camera or mobile device. Illustrate and communicate original ideas and stories using multiple digital tools and resources.	I	R	M	M	M	M
		W 6, W 10 NJCCCS-8.1.2.A.3 SL 3	Use teacher developed guidelines to evaluate multimedia presentations for organization, content, design, presentation and appropriateness of citations. Compare the common uses of at least 2 different digital applications and identify the advantages and disadvantages of using each.			O	I	R	M
		W 6, W 10 NJCCCS-8.1.P.C.1 SL 1	Use district approved Web 2.0 tools for communication and collaboration. Collaborate with peers by participating in interactive digital games or activities.			I	R	M	M
I – Introduce	**R – Reinforce**	**M – Mastery (ability to teach others)**	**O – Optional for grade level**						

D: Digital Citizenship		Alignment to NJCCCS/ CCSS	**Skills**	K	1	2	3	4	5
Demonstrate the responsible use of technology and an understanding of ethics and safety issues in using electronic media at home, in school and in society.	**Acceptable Use, Copyright and Plagiarism**	Digital Citizenship	Explain and demonstrate compliance with classroom, school rules (Acceptable Use Policy) regarding responsible use of computers and networks.	**I**	R	M	M	M	M
		NJCCCS-8.1.5.D.2	Explain responsible uses of technology and digital information; describe possible consequences of inappropriate us. Analyze the resource citations in online materials for proper use.	**I**	R	M	M	M	M
		NJCCCS-8.1.2.D.1; 8.1.5.D.1	Explain Fair Use Guidelines for the use of copyrighted materials,(e.g. text, images, music, video in student projects) and giving credit to media creators. Develop an understanding of ownership of print and nonprint information. Understand the need for and use of copyrights.		**I**	R	M	M	M
		Digital Citizenship	Identify and explain the strategies for the safe and efficient use of computers (e.g. passwords, virus protection software, spam filters, popup blockers).		**I**	R	M	M	M
		Digital Citizenship	Demonstrate safe email practices, recognition of the potentially public exposure of email and appropriate email etiquette.				**I**	R	M
		NJCCCS-8.1.5.D.3	Identify cyberbullying and describe strategies to deal with such a situation. Demonstrate an understanding of the need to practice cyber safety, cyber security and cyber ethics when using technologies and social media.	I	R	M	M	M	M
		NJCCCS-8.1.5.D.4	Recognize and describe the potential risks and dangers associated with various forms of online communications. Understand digital citizenship and demonstrate an understanding of the personal consequences of inappropriate use of technology and social media.		**I**	R	M	M	M
I – Introduce	**R – Reinforce**	**M – Mastery (ability to teach others)**	**O – Optional for grade level**						

E: Research and Information Fluency (These skills may be taught in collaboration with the library/media specialist.) **F: Critical thinking, problem solving, and decision making**			**Skills**	**K**	**1**	**2**	**3**	**4**	**5**
Demonstrate the ability to use technology for research, critical thinking, decision making, communication and collaboration, creativity and innovation.	**Research and Gathering Information**	RI 5, RI 7 NJCCCS-8.1.P.E.1; 8.1.2.E.1	Use age appropriate technologies to locate, collect, organize content from media collection for specific purposes, citing sources. Use the Internet to explore and investigate questions with a teacher's support. Use digital tools and online resources to explore a problem or issue.	I	R	M	M	M	M
		RI 5, RI 7	Perform basic searches on databases, (e.g. library, card catalog, encyclopedia) to locate information.			I	R	M	M
		RI 5, RI 7 NJCCCS-8.1.5.E.1	Evaluate teacher-selected or self-selected Internet resources in terms of their usefulness for research. Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.	I	R	M	M	M	M
		RI 7 NJCCCS-8.1.2.F.1; 8.1.5.F.1	Use content specific technology tools (e.g. environmental probes, sensors, and measuring devices, maps, simulations) to gather and analyze data. Use geographic mapping tools to plan and solve problems. Apply digital tools to collect, organize, and analyze data that support a scientific finding.		I	R	M	M	M
		RI 6, RI 7, RI 9	Use Web 2.0 tools (e.g. online discussions, blogs and wikis) to gather and share information.			O	I	R	M
		RL 7	Identify and analyze the purpose of a media message (to inform, persuade and entertain).	I	R	M	M	M	M
I – Introduce	**R – Reinforce**	**M – Mastery (ability to teach others)**	**O – Optional for grade level**						

http://fcit.usf.edu/matrix/gradelevel.php

FLORIDA - Technology Integration Matrix Grade Level Index

This page provides a breakdown of videos within the Technology Integration Matrix by grade level. Although you may be primarily interested in a particular level, we encourage you to view the ways in which technology is used in other grade levels. For example, you will find videos of high school classrooms in which the technology tools could be used in the same way with middle school or elementary level students. Some videos involve students from both middle and high school grades and some involve students from both middle and elementary grades. These videos appear in both lists below.

Elementary: 3-5

Entry

- Active - Social Studies: *Fertile Crescent*
- Active - Language Arts: *Keyboarding Skills*
- Collaborative - Math: *Bar Graph Assessments*
- Collaborative - Science: *States of Matter*
- Collaborative - Language Arts: *Story Visualization*
- Constructive - Math: *Multiplication Practice*
- Constructive - Science: *Lungs: Lungs-Individual and Community Choices*
- Constructive - Social Studies: *Geography Preview*
- Authentic - Math: *Math Skills Practice*
- Goal-Directed - Math: *Practicing Fractions*
- Goal-Directed - Social Studies: *Organizing Data*
- Goal-Directed - Language Arts: *Reading Assessment*

Adoption

- Active - Math: *Mini-Lesson Assessment*
- Active - Science: *Water Cycle Webquest*
- Active - Social Studies: *Historical Fiction Graphic Organizer*
- Collaborative - Math: *Electronic Base Ten Blocks*
- Collaborative - Science: *States of Matter*
- Collaborative - Social Studies: *Spanish Explorer Animation*
- Constructive - Language Arts: *Fluency Assessment*
- Authentic - Science: *Word of the Day- Science*
- Authentic - Social Studies: *This Day in History*
- Goal-Directed - Math: *Plotting Decimals on a Number Line*
- Goal-Directed - Social Studies: *Digital Portfolio*
- Goal-Directed - Language Arts: *Planning with Inspiration*

Adaptation

- Active - Social Studies: *Freedom Quilt Squares*
- Collaborative - Math: *Fraction Videos*
- Collaborative - Science: *Biome Movies*
- Collaborative - Social Studies: *Recycling PSA*
- Constructive - Math: *Graphing Motion*
- Constructive - Social Studies: *American Revolution Culminating Event*
- Goal-Directed - Social Studies: *Community Service Budget*
- Goal-Directed - Language Arts: *Planning with Inspiration*

Infusion

- Active - Science: *Culminating Presentations*
- Collaborative - Math: *Adding and Subtracting Fractions*
- Collaborative - Science: *Space Exploration*
- Collaborative - Social Studies: *Photo Essays*
- Constructive - Science: *The Ducklings Have Hatched!*
- Constructive - Social Studies: *Country Creation*
- Authentic - Social Studies: *African Water Crisis*
- Goal-Directed - Language Arts: *Digital Daily Planner*

Transformation

- Active - Math: *Base Systems*
- Active - Social Studies: *Virtual Vacation Travel Guides*
- Active - Language Arts: *Poetry Podcast*
- Constructive - Math: *Iditarod Project*
- Constructive - Language Arts: *Podcasting*
- Constructive - Science: *Invention Convention Podcast*
- Goal-Directed - Math: *Fraction and Decimal Review Podcast*
- Goal-Directed - Science: *Public Service Announcement*