

**Middle School Computer Applications Curriculum
Quarterly Schedule
McGlynn Middle School & Andrews Middle School**

Grades: 6, 7, 8

Length: 9–10 weeks per quarter

Standards: Massachusetts Digital Literacy & Computer Science (DLCS)

Shared Quarterly Structure (All Grades)

Weeks	Focus Area
1–2	Digital Citizenship & Digital Literacy
3–4	Computational Thinking
5–7	Coding Fundamentals
8	Data & Computing Systems
9–10	AI Foundations & Culminating Project

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Grade 6 – Foundations & Exploration

Instructional Focus: Exposure, guided practice, confidence-building, concrete examples

Student Output: Short programs, reflections, visual projects

Assessment Differentiation: Participation, completion, basic understanding

Week (s)	Unit / Timing	Emphasis	Key Topics	Resources
1-2	Unit 1: Digital Citizenship	Understanding what it means to be a good digital citizen Recognizing safe vs. unsafe online behavior	Online rules & digital etiquette Cyberbullying awareness Digital footprint basics	Common Sense Media (Grades 4–6 lessons) Code.org Digital Citizenship Videos
3-4	Unit 2: Computational Thinking	Step-by-step thinking Hands-on unplugged activities	Sequencing Algorithms using everyday tasks Debugging unplugged activities	Code.org CS Explorations unplugged lessons Amazon Future Engineer problem-solving projects
5-7	Unit 3: Coding Fundamentals	Introductory block-based coding Heavy scaffolding	Events and sequences Simple loops Debugging with teacher guidance Interactive story or animation	Code.org CS Explorations Scratch
8-10	Unit 4: Data, Systems & AI	Awareness and vocabulary Machine learning understanding	Input/output concepts Hardware vs. software What is AI What different types of AI are there? (examples students recognize) Coding project OR AI poster / video explaining how AI is used in daily life	Day of AI (Intro lessons) https://dayofai.org/units/how-do-machines-learn Code.org data lessons

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Grade 7 – Application & Problem Solving

Instructional Focus: Applying concepts, making choices, beginning independence

Student Output: Functional programs, explanations, collaboration

Assessment Differentiation: Functionality, explanation, collaboration

Week(s)	Unit / Timing	Emphasis	Key Topics	Resources
1-2	Digital Citizenship	Decision-making and responsibility	Online identity & reputation Privacy & password management Evaluating online information	Common Sense Media (Grades 6–8 lessons) Code.org
3-4	Computational Thinking	Applying CT to solve real problems	Decomposition Pattern recognition Writing algorithms using flowcharts	Code.org CS Explorations Amazon Future Engineer design challenges
5-7	Coding Fundamentals	Logic and problem-solving in code	Loops & conditionals Variables (introductory) Debugging independently Game or simulation with user interaction	Code.org CS Discoveries Scratch enrichment
8-10	Data, Systems & AI	Understanding systems and data use	Variables & user input Hardware troubleshooting AI training data & bias (intro) Coding project OR AI case study presentation	Day of AI (Middle School modules) Bias In AI Amazon Future Engineer AI lessons

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Grade 8 – Design, Analysis & Impact

Instructional Focus: Independence, critical thinking, real-world connections

Student Output: Multi-step programs, presentations, ethical analysis

Assessment Differentiation: Design quality, logic, analysis, presentation

Week(s)	Unit / Timing	Emphasis	Key Topics	Resources
1-2	Digital Citizenship	Ethics, leadership, and long-term impact	Digital law & ethics Media bias & misinformation Responsible social media use	Common Sense Media (Grades 8+) Student-led discussions & scenarios
3-4	Computational Thinking	Abstract thinking and optimization	Algorithm efficiency (conceptual) Multiple solutions to one problem Pseudocode	Code.org CS Discoveries Amazon Future Engineer logic challenges- App Lab
5-7	Coding Fundamentals	Designing and improving solutions	Variables & conditionals Nested loops Debugging and iteration Student-designed app or game with defined goals	Code.org CS Discoveries Optional text-based exposure (Python examples, teacher-led)
8-10	Data, Systems & AI	Ethics, impact, and future careers	Data collection & representation Network basics AI ethics, bias, and societal impact Capstone project connecting CS or AI to a real-world problem	Day of AI (Ethics & impact lessons) https://dayofai.org/units/how-do-machines-learn-with-coding Amazon Future Engineer career pathways

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