



Course Overview: *Gaming Concepts: Applying Technology* (5th grade)

The fifth grade Applying Technology course invites students to apply technology skills in meaningful, creative, and collaborative ways. Through game design, coding, artificial intelligence, digital media, and esports analytics, students strengthen their digital literacy, practice emotional regulation, and develop responsible digital citizenship. Lessons are designed to support English Language Learners (ELLs) with accessible vocabulary, scaffolds, and opportunities to practice communication across multiple modes. By the end of the course, students see themselves not only as technology users but also as innovators, problem-solvers, and future-ready learners prepared to navigate an increasingly digital world.

Grade Level: 5

Length: Forty-five 45-minute lessons

National Standards

This comprehensive curriculum is guided by several nationally recognized knowledge and skill standards:

- **The International Society for Technology in Education 7 Standards (ISTE)** provide the competencies for learning, teaching and leading with technology, and are a comprehensive road map for the effective use of technology in schools worldwide.
- **The Collaborative for Academic, Social, and Emotional Learning Competencies (CASEL)** cover five broad and interrelated areas of competence for social and emotional learning.
- **Computer Science Teachers Association Standards (K12 CS)** are a core set of learning objectives designed to provide the foundation for a complete computer science curriculum and its implementation at the K-12 level.

Unit 1: Game Design Foundations

In this introductory unit, students explore how games are built and what makes them fun, fair, and engaging. They analyze favorite games to uncover goals, rules, challenges, and rewards, then create their own original characters, levels, and reward systems. Students write fair play rules, connecting gameplay to broader ideas of respect, sportsmanship, and digital citizenship.

Emotional regulation is emphasized as students learn how to manage frustration and encourage one another through the creative process. The unit concludes with a career connection to game design, showing students how their ideas and problem-solving skills link to real-world opportunities in interactive media.

Unit 2: Coding and Esports

In Unit 2, students bring their game design ideas to life through coding. Using Scratch, they learn foundational programming concepts such as loops, events, variables, and debugging. They explore fairness in coding by ensuring that their games are balanced and inclusive, while also refining projects with visuals and sound to improve the player experience. Students practice perseverance and patience as they tackle coding challenges, using “Debug Detective” strategies to solve problems step by step. The unit closes with a spotlight on careers in game development, helping students imagine how creativity and coding combine in professional pathways.

Unit 3: Artificial Intelligence in Esports

This unit introduces students to the world of artificial intelligence and its role in esports and everyday technology. Students train simple AIs to recognize patterns, explore how AI is used for anti-cheat systems and coaching, and engage in ethical debates about fairness and responsibility in AI. Lessons emphasize respectful discussion and emotional awareness, especially when exploring disagreements about technology’s role. Students storyboard creative AI tools—such as an AI coach or commentator—blending imagination with critical thinking. The unit ends with a career focus on AI innovators, encouraging students to think about how they might shape the future of technology.

Unit 4: Shoutcasting and Digital Media

In this communication-focused unit, students develop their voices as digital storytellers and shoutcasters. They learn how to analyze gameplay, script commentary, and deliver engaging broadcasts with energy and clarity. Along the way, they practice editing audio, providing constructive feedback to peers, and reflecting on safe and responsible media sharing. English Language Learners benefit from sentence frames, oral rehearsal, and voice recording tools that scaffold public speaking. Emotional regulation is woven in as students build confidence, manage nerves, and embrace feedback as part of the creative process. The unit culminates with a broadcast showcase that highlights student work and connects to careers in esports broadcasting.

Unit 5: Data and Esports Analytics

In the final unit, students explore how data helps players, teams, and industries make informed decisions. They collect and organize gameplay data, visualize it through charts and dashboards, and even use AI-supported tools to identify patterns. Students also learn about data ethics,

cybersecurity, and the importance of protecting personal information in digital spaces. Through these lessons, they strengthen their critical thinking and persistence while practicing clear communication of findings. The unit concludes with a look into careers in data analytics, helping students connect their new skills to the growing importance of data in technology and beyond.