Student Competencies for Emerging Technologies & Artificial Intelligence

Purpose and Scope

The Student Competencies for Emerging Technologies & Artificial Intelligence (AI) articulate what Oklahoma students should know and be able to do when engaging with modern intelligent technologies, from kindergarten through grade 12. These competencies are intended to complement, not replace, the 2023 Oklahoma Academic Standards for Computer Science (OAS-CS) by providing districts and teachers with clear, grade-level learning targets that reflect current national trends in computer science education.

Using these Competencies

Because the Oklahoma State Department of Education has not yet adopted additional AI standards legislatively, these competencies serve as a voluntary framework that districts may integrate into existing computer science (CS) courses or related STEM subjects. They maintain the OAS-CS coding structure (e.g., 3.ET.AI.02, where "3" indicates grade level, "ET.AI" represents the Emerging Technologies & AI strand, and "02" identifies the specific objective) so that teachers can see immediately how each outcome aligns with the core CS standards and practices.

Why AI Competencies Matter

- Build a foundational understanding of how AI systems collect data, recognize patterns, and make decisions.

- Develop the critical-thinking and ethical-reasoning skills needed to design, evaluate, and use AI responsibly.

- Prepare students for emerging careers that increasingly rely on data literacy, machine learning, automation, and human-AI collaboration.

Implementation

Districts may introduce these competencies through computer science lessons in elementary and middle school and through dedicated computer science courses in high school.

Student Competencies for Emerging Technologies & Artificial Intelligence

Kindergarten (K)	First Grade (1)	Second Grade (2)	Third Grade (3)	Fourth Grade (4)	Fifth Grade (5)
K.ET.AI.01 With guidance, identify examples of artificial intelligence (AI) in daily life (e.g., digital assistants, smart devices).	1.ET.AI.01 With guidance, describe how artificial intelligence (AI) helps people complete tasks in their daily lives.	2.ET.AI.01 With guidance, explain how artificial intelligence (AI) systems learn from patterns and make simple decisions.	3.ET.AI.01 Identify and explain how artificial intelligence (AI) systems collect and use data to make decisions.	4.ET.AI.01 Compare human and artificial intelligence (AI) decision-making processes in simple scenarios.	5.ET.AI.01 Model how artificial intelligence (AI) systems use input data to make predictions and recommendations.
Communicating About Computing		Developing and Using Abstractions		Communicating about Computing	Creating Computational Artifacts
Additional competencies and practices begin in grade three.			3.ET.AI.02 Explore simple pattern recognition tasks that AI systems can perform.	4.ET.AI.02 Investigate how AI systems learn from examples and feedback.	5.ET.AI.02 Evaluate the benefits and limitations of using AI systems in everyday situations.
			Developing and Using Abstractions	Testing and Refining Computational Artifacts	
			3.ET.AI.03 Explore how AI systems work with different types of information (text, images, sounds).	4.ET.AI.03 Explain how the amount of training data affects the accuracy of an AI system's predictions.	5.ET.AI.03 Investigate how AI systems represent and process different types of data to solve problems.
			Developing and Using Abstractions		

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Sixth Grade (6)	Seventh Grade (7)	Eighth Grade (8)
6.ET.AI.01 Investigate how artificial intelligence (AI) systems process and classify data to identify patterns.	7.ET.AI.01 Model how artificial intelligence (AI) systems use algorithms to make more complex decisions over time.	8.ET.AI.01 Evaluate the role of artificial intelligence (AI) in various fields (e.g., healthcare, transportation, education).
Developing and Using Abstractions		Communicating About Computing
6.ET.AI.02 Explore and discuss ethical considerations in AI decision-making.	7.ET.AI.02 Analyze how incorrect training data can affect AI system outputs.	8.ET.AI.02 Compare different types of AI learning approaches (supervised, unsupervised, reinforcement).
Communicating About Computing	Testing and Refining Computational Artifacts	Developing and Using Abstractions
6.ET.AI.03 Create simple experiments to demonstrate how AI systems can learn from training data.	7.ET.AI.03 Design and test simple AI models that solve specific problems.	8.ET.AI.03 Develop and implement basic AI algorithms to solve real-world problems.
Testing and Refining Computational Artifacts	Creating Computational Artifacts	
Additional competencies and practices begin in grade seven.	7.ET.AI.04 Analyze the environmental impacts of AI systems, including energy consumption and resource usage.	8.ET.AI.04 Design simple AI systems that incorporate transparency and explainability features.
	Communicating About Computing	Creating Computational Artifacts

Student Competencies for Emerging Technologies & Artificial Intelligence

High School	
Ninth and Tenth Grades: Level 1 (L1)	**Eleventh and Twelfth Grades: Level 2 (L2)**
L1.ET.AI.01 Analyze and compare different artificial intelligence (AI) architectures and their applications.	L2.ET.AI.01 Design and develop complex artificial intelligence (AI) systems that incorporate multiple types of learning approaches.
Developing and Using Abstractions	Creating Computational Artifacts
L1.ET.AI.02 Explore, select, and use appropriate AI tools and frameworks to design and implement AI solutions.	L2.ET.AI.02 Design AI solutions that embed fairness, transparency, privacy, sustainability, and bias mitigation from problem scoping through deployment.
Creating Computational Artifacts	
L1.ET.AI.03 Evaluate the societal implications of AI technologies, including privacy and security concerns.	L2.ET.AI.03 Create AI solutions that interact with and adapt to human feedback.
Communicating About Computing	Creating Computational Artifacts
L1.ET.AI.04 Demonstrate how AI systems can be trained and optimized using different learning techniques.	L2.ET.AI.04 Evaluate and optimize AI systems for efficiency, accuracy, and adherence to ethical principles.
Testing and Refining Computational Artifacts	
L1.ET.AI.05 Create and evaluate model cards or documentation that explain AI system capabilities, limitations, and intended uses.	L2.ET.AI.05 Evaluate and document AI solutions, explaining ethical safeguards, environmental impacts, limitations, and intended uses to different stakeholders.
Communicating About Computing	
L1.ET.AI.06 Analyze how AI systems represent and reason with different data modalities (text, images, audio, video).	L2.ET.AI.06 Develop methods to explain AI decision-making processes and their ethical implications (e.g., fairness, transparency, and intellectual property) to different stakeholders.
Developing and Using Abstractions	Communicating About Computing