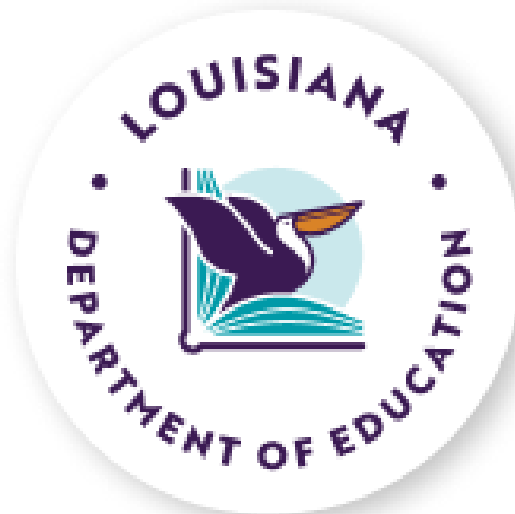


Louisiana Artificial Intelligence (AI) Competencies for K-12 Education



Vision

The Louisiana Department of Education (LDOE) envisions a future where Artificial Intelligence (AI) is a powerful tool to support learning, enhance teaching practices, and prepare students for careers. By equipping educators, leaders, and families with a foundational knowledge of AI, Louisiana schools will lead the nation in leveraging this technology to create safe, engaging, and innovative learning environments.

Why should all students develop AI literacy skills?

All students should develop AI literacy skills, as they are foundational to learning and future success. Skillful use of this emerging technology equips students to understand what AI is, apply it thoughtfully, use it ethically and safely, and connect their learning to future careers. Without it, students risk becoming passive consumers rather than critical thinkers and responsible creators in an AI-driven world. The AI Literacy Framework anchors Louisiana's Comprehensive Plan for AI. Represented by five areas, this framework provides a roadmap for actions at the state, system, school, and classroom levels.



**Pathways &
Partnerships
for the Future**



**Awareness &
Foundations**



**Responsible
Use & Critical
Thinking**



**Pedagogy
& Classroom
Applications**



**Support &
Leadership**

Developing AI Literacy Through Competencies

Developed through collaboration with educators, these competencies identify essential knowledge and skills students need to develop AI literacy across content areas. These competencies are closely aligned with the [Louisiana Student Standards for Computer Science](#) and should be part of an integrated approach to build AI Literacy.

Structure and Components of the Competencies

Organization by Grade Bands

The AI competencies are structured into four grade bands: early elementary (kindergarten–grade 2), elementary (grade 3–grade 5), middle (grade 6–grade 8), and high (grade 9–grade 12). This organization ensures that students are introduced to foundational concepts early and build upon them with increasing complexity and depth as they advance through each grade level.

In elementary grades, students are introduced to foundational AI concepts through guided exploration and everyday real-world examples. Instruction focuses on building vocabulary and helping students recognize that AI systems are **tools** created by people to follow instructions and analyze data. Students engage in simple problem-solving activities that involve noticing patterns and making observations. Real-world examples (e.g., smart home devices, learning applications) help students see how AI supports tasks. At this stage, emphasis is placed on responsible use. Students are encouraged to identify both the benefits of using AI and what learning might be missed if AI is relied on too heavily.

In middle school, students deepen their understanding of AI by applying AI tools to more structured tasks and collaborative projects. Students examine how AI systems process data and analyze AI-generated outputs for accuracy, bias, and limitations. Instruction highlights real-world uses of AI across industries (e.g., predictive maintenance in the skilled trades, health-monitoring technologies) so students can see AI as a tool that enhances human work. Ethical considerations become more explicit with reflection on societal impacts.

In high school, students engage with advanced AI concepts, focusing on critical thinking, system design, and societal impact. Students design and evaluate AI-powered projects and examine the trade-offs related to AI use. Instruction includes discussions on AI governance and the importance of transparency and accountability in AI systems. Real-world applications from fields such as healthcare, engineering, education, finance, and the skilled trades illustrate how AI is used across both technical and non-technical professions. Students are encouraged to connect AI skills to various college and career pathways and to articulate how AI literacy supports success in a wide range of fields.

AI Competencies by Grade Band

Kindergarten–Grade 2

- **Awareness and Foundations**

Target Skills

- Define AI in an age-appropriate way
- Recognize examples of AI in everyday life.
- Understand that AI follows human-created instructions.

- **Pedagogy and Classroom Applications**

Target Skills (*Not applicable*)

- ***AI use for research/writing exceeds developmental intent; focus remains foundational***

- **Responsible Use and Critical Thinking**

Target Skills

- Explain that AI is not human and does not have real emotions or feelings.
- Recognize that AI tools can sometimes give unfair or untrue answers.
- Explain why people should check AI outputs instead of trusting them automatically.
- Ask for adult support when AI responses feel confusing or concerning.
- Ask appropriate questions to better understand information generated through interactions with AI tools.

- **Support and Leadership**

Target Skills

- Recognize when an AI tool is not working as expected and try simple fixes.
- Describe the steps used to get a result from an AI tool and explain why choices were made using simple language.
- Compare AI-generated work with student work and identify which parts came from AI.

- **Pathways and Partnerships for the Future**

Target Skills

- Explain one way AI tools help people at home, school, or work.

Grades 3–5

- **Awareness and Foundations**

Target Skills

- Recognize that data used by AI systems can include numbers, words, images, or sounds.
- Explain that AI systems use patterns in data to make predictions or suggestions.
- Describe how changing the input (words, examples, choices) can change AI results.
- Explain that the quality and amount of data affect how well an AI works.
- Identify simple limitations of AI, including incorrect answers or missing information.

- **Pedagogy and Classroom Applications**

Target Skills

- Explain that AI systems use data and human-created instructions to make predictions or recommendations.
- Use AI as a supporting tool (idea generation, visualization) rather than a final answer.
- Check AI outputs against known facts or class materials before using them.
- Understand that AI does not have thoughts, feelings, or consciousness, even though it can perform human-like tasks.
- Demonstrate introductory use of AI tools by engaging with guided applications such as story generators, quiz applications, or drawing assistants.

- **Responsible Use and Critical Thinking**

Target Skills

- Discuss responsible AI use by recognizing basic considerations related to fairness, privacy, and accuracy.
- Explain the benefits of using AI to help complete tasks as well as the skills or learning that may be missed when relying too heavily on AI.
- Identify situations where AI decisions could be unfair or biased.
- Identify what personal information should or should not be shared when using AI tools.
- Explain how following rules and guidelines can help ensure AI is used safely and respectfully.
- Reflect on how AI tools might impact people differently and why it's important to consider these effects.

- **Support and Leadership**

Target Skills

- Compare AI-generated outputs with human-created work, identifying similarities, differences, strengths, and limitations of each in relation to the task goal.
- Support peers while troubleshooting potential issues with AI outputs and suggesting next steps.
- Use simple documentation (e.g., notes, labels) to show how AI was used.

- **Pathways and Partnerships for the Future**

Target Skills

- Describe how AI tools have changed how people learn, communicate, and work, using age-appropriate examples from school, community, and everyday life.

- Identify jobs and roles that use computing and AI to solve problems, including examples where people work together to design, test, and improve tools or systems.
- Explain why rules, guidelines, and laws exist for online and AI-supported spaces, and describe how following them supports safe and responsible participation in digital spaces.
- Identify opportunities where AI can assist in solving simple, real-world problems (e.g., fixing issues, monitoring systems, helping workers stay safe).

Grades 6–8

- **Awareness and Foundations**

Target Skills

- Explore foundational AI concepts like machine learning, natural language processing, and data classification.
- Explain how AI systems use models trained on data to make predictions.
- Evaluate whether an AI output is reasonable or inaccurate based on evidence.
- Describe how AI systems can influence people's decisions and behaviors.

- **Pedagogy and Classroom Applications**

Target Skills

- Use AI tools to complete classroom tasks and small projects (e.g., research, creative writing, or simulations).
- Use AI tools to analyze or visualize data, then verify outputs using other sources.
- Analyze outputs from AI: compare AI-generated content with human-generated content.
- Identify potential bias, errors, or limitations in AI outputs.

- **Responsible Use and Critical Thinking**

Target Skills

- Discuss ethical considerations in AI, including privacy and digital safety.
- Reflect on how AI decisions can impact individuals and communities differently.
- Propose ways AI systems could be used more fairly or responsibly.

- **Support and Leadership**

Target Skills

- Compare AI-supported solutions with human-developed solutions to evaluate effectiveness, efficiency, and appropriateness for a given problem or task.
- Troubleshoot AI-supported projects by adjusting inputs and evaluating outputs.
- Systematically document testing results, revisions, and decisions, explaining how changes utilizing the AI tool improved accuracy and reliability.
- Incorporate AI-supported resources into original work, providing appropriate citation.
- Engage in structured peer review of AI-supported work, offering and receiving feedback focused on problem-solving strategies, clarity, and responsible tool use.

- **Pathways and Partnerships for the Future**

Target Skills

- Identify major computing and AI-related advancements and explain how new technologies build on prior ideas.
- Explain how past computational discoveries influence current AI tools and systems, using examples from education, industry, and everyday life.
- Collaborate in teams to design and develop computational or AI-supported projects, distributing tasks, setting timelines, and refining work based on feedback.
- Analyze how access to computing and AI tools can impact learning, careers, and the community.
- Connect AI-driven projects to future pathways, explaining how teamwork and innovation support college, career, and civic readiness.

Grades 9–12

- **Awareness and Foundations**

Target Skills

- Explain how abstractions allow AI systems to function without showing all details.
- Explain and describe the impacts of uncertainty and the limitations of data used by AI systems.
- Apply and evaluate data analysis techniques to identify patterns represented in AI systems.
- Describe and critique how algorithmic feedback loops in AI systems can shape perceptions, reinforce a limited data set, and limit the sources of information that may inform the individual user.

- **Pedagogy and Classroom Applications**

Target Skills

- Design projects that integrate AI tools for problem-solving or creative work.
- Use AI tools to support complex analysis, simulations, or data pipelines.
- Document how AI is used in workflows or projects.
- Refine AI-supported models or visualizations based on testing and evidence.
- Compare classical algorithms and machine learning approaches, explaining how control structures, data flow, and optimization methods influence AI system design and performance.

- **Responsible Use and Critical Thinking**

Target Skills

- Evaluate the reliability, bias, and usefulness of AI-generated information.
- Evaluate data quality of datasets before training AI models by assessing validity, accuracy, and completeness, and clearly document uncertainty and limitations in AI predictions.
- Debug AI-generated outputs, test models using a variety of datasets, and document evaluation criteria, including accuracy, fairness, and reliability.
- Engage in discussions about the societal and ethical impacts of AI.

- Analyze how AI systems handle personally identifiable information (PII), evaluate trade-offs between personalization and privacy, and recommend appropriate safeguards in AI applications.
- **Support and Leadership**
 - Target Skills
 - Contrast AI-specific laws and regulations and debate arguments for and against specific regulatory decisions.
 - Explain the importance and implications of data provenance for transparency, accountability, and trust in AI systems.
 - Critique algorithmic feedback loops in social media and recommendation systems, including their role in reinforcing bias, polarization, or misinformation in AI outputs.
 - Apply systematic troubleshooting strategies to AI-supported systems.
 - Develop independent AI-powered projects or research, integrating responsible AI practices.
 - Critically evaluate AI systems for fairness, accuracy, and ethical implications.
 - Design and implement interdisciplinary AI-powered projects that integrate hands-on skills and computational thinking, demonstrating how AI can enhance real-world systems, workflows, and problem-solving in trades, technical fields, and other applied contexts.
- **Pathways and Partnerships for the Future**
 - Target Skills
 - Understand regulatory, privacy, and intellectual property considerations in AI use.
 - Connect AI skills to college and career pathways by identifying relevant postsecondary opportunities, internships, apprenticeships, and industry-recognized credentials [including Career and Technical Education (CTE)-aligned and microcredential options], and articulate how AI and computational thinking skills apply across both computer science and non-computer science fields.
 - Explain how AI enhances and augments human expertise across career pathways, including skilled trades, by demonstrating how AI literacy supports innovation, safety, efficiency, and leadership rather than replacing human work.
 - Use industry-aligned tools and workflows in collaborative AI projects.
 - Explore real-world applications of AI across fields (e.g., healthcare, finance, education, engineering, and skilled trades).
 - Mentor peers or younger students in responsible AI use.