

# K-12 AI Literacy Framework Template

## Introduction

This framework provides a comprehensive, grade-appropriate approach to developing AI literacy in K-12 students. It can be customized to meet the specific needs of your school, classroom, or district. The framework addresses seven key components of AI literacy while providing differentiated guidelines for elementary, middle, and high school students.

## Component 1: Understanding How AI Works

### Elementary School (K-5)

- **Core Concept:** AI is a smart computer tool that learns from information
- **Key Vocabulary:** AI, computer, robot, learning, patterns
- **Sample Activities:**
  - Compare AI to a "super smart computer that can learn"
  - Draw pictures of what students think AI looks like
  - Play simple pattern recognition games
  - Watch age-appropriate videos about how computers learn

### Middle School (6-8)

- **Core Concept:** AI uses large amounts of data to identify patterns and make predictions
- **Key Vocabulary:** AI, GenAI, data, algorithms, predictions, patterns
- **Sample Activities:**
  - Identify AI tools they use daily (recommendation systems, voice assistants)
  - Play "Guess the next word" games to understand prediction
  - Create simple decision trees to understand algorithms
  - Compare different AI assistants' responses to the same question

### High School (9-12)

- **Core Concept:** AI systems, including Large Language Models, use complex algorithms to analyze data, recognize patterns, and generate predictions or content
- **Key Vocabulary:** Machine learning, large language models, neural networks, training data, generative AI
- **Sample Activities:**
  - Distinguish between different types of AI (predictive vs. generative)
  - Analyze how training data influences AI outputs
  - Experiment with prompt engineering across different AI tools
  - Research how human feedback shapes AI responses

## Component 2: Understanding Ethical Use Policies

### Elementary School (K-5)

- **Key Guidelines:**
  - Always tell your teacher when you use an AI helper
  - AI tools are like research helpers, not answer-givers
  - Never share personal information with AI
  - Give credit to AI when it helps you
- **Sample Permission Statement:** "AI helped me find information about \_\_\_\_\_"

### Middle School (6-8)

- **Key Guidelines:**
  - Use AI as a learning tool, not a substitute for your own thinking
  - Document when and how you use AI for school work
  - Understand when AI use is appropriate and when it isn't
  - Recognize that AI can make mistakes
- **Sample Attribution Format:** "I used [AI tool name] to help me with [specific task]. It helped me by [explanation], and then I [what you did with the information]."

### High School (9-12)

- **Key Guidelines:**
  - Follow specific class policies regarding AI use
  - Properly cite AI-generated content in your work
  - Maintain academic integrity when using AI tools
  - Be transparent about your AI use process

- **Sample Documentation Method:** AI Consultation Log (record prompts used, responses received, and how they were incorporated)

## Component 3: Effective Prompting Strategies

### Elementary School (K-5)

- **Question Helpers:**
  - "Explain [topic] like I'm in [grade level]"
  - "Give me 5 facts about [topic]"
  - "What are the main parts of [topic]?"
  - "How would you describe [topic] to a kid?"
- **Prompt Process:** Think → Ask → Check

### Middle School (6-8)

- **Strategy Framework:**
  - Be specific about what you want
  - Ask for explanations at your grade level
  - Request examples that help you understand
  - Break complex questions into smaller parts
- **Prompt Structure:** Context → Question → Format → Purpose

### High School (9-12)

- **Advanced Techniques:**
  - Specify your role and the AI's role
  - Include relevant context and constraints
  - Request specific formats or structures
  - Use iterative prompting (follow-up questions)
  - Experiment with different phrasings
- **Effective Prompt Components:** Context → Audience → Format → Tone → Purpose → Constraints

## Component 4: Evaluating AI Outputs

### Elementary School (K-5)

- **FACTS Checker:**
  - Find where the information comes from
  - Ask if it matches what you already know

- Check with a book or trusted website
- Think about why AI might be wrong
- Share with a teacher if you're not sure
- **Red Flags:** Information that sounds strange or doesn't make sense

## Middle School (6-8)

- **Evaluation Checklist:**
  - Does this information match what I've learned in class?
  - Can I find this information in at least one other reliable source?
  - Does the AI provide evidence for its claims?
  - Are there any obvious mistakes or strange statements?
  - Would my teacher consider this a good source?
- **Verification Strategy:** Cross-check key information with textbooks or approved websites

## High School (9-12)

- **Critical Analysis Framework:**
  - Accuracy: Verify facts with reliable sources
  - Relevance: Assess if the information addresses your specific needs
  - Bias: Look for slanted perspectives or missing viewpoints
  - Currency: Check if information might be outdated
  - Completeness: Identify important aspects the AI may have missed
- **Verification Process:** Triangulate information across multiple credible sources

# Component 5: Self-Monitoring Learning

## Elementary School (K-5)

- **Reflection Questions:**
  - What did I learn by myself?
  - What did AI help me with?
  - What new questions do I have now?
- **Visual Aid:** Use green/yellow/red stickers or markers to indicate "I did it myself" / "AI helped me" / "AI did most of it"

## Middle School (6-8)

- **Learning Journal Prompts:**
  - How did using AI help me understand this topic better?

- What parts of my work am I most proud of creating myself?
- What skills do I need to practice more without AI help?
- How would I approach this differently next time?
- **Metacognition Tool:** "My thinking" vs. "AI-assisted" color-coding system

## High School (9-12)

- **Analytical Reflection Framework:**
  - Process analysis: How did AI enhance or change my work process?
  - Contribution assessment: What unique value did I add beyond the AI?
  - Skill development: What skills am I building vs. outsourcing?
  - Learning outcome: How has this approach deepened my understanding?
  - Improvement plan: How can I better balance AI assistance and independent work?
- **Documentation Method:** AI usage statement with rationale for decisions

# Component 6: Distinguishing Human and AI Communication

## Elementary School (K-5)

- **Key Distinctions:**
  - AI doesn't have real feelings or experiences
  - AI learns from what other people write
  - AI can't truly understand jokes or feelings
  - People write from personal experiences
- **Activity:** Compare student-written stories with AI-generated stories

## Middle School (6-8)

- **Comparison Framework:**
  - Personal connection: AI lacks authentic personal experiences
  - Emotional understanding: AI simulates but doesn't feel emotions
  - Original thinking: AI recombines existing ideas rather than creating truly new ones
  - Contextual awareness: AI may miss important classroom context
- **Activity:** Analyze and improve AI-generated creative writing

## High School (9-12)

- **Advanced Analysis:**
  - Authentic voice: Identifying the qualities that make writing distinctly human
  - Contextual intelligence: Recognizing when AI misses important nuance or context
  - Emotional intelligence: Understanding the limitations of AI in emotional expression
  - Creative originality: Distinguishing between novel human creativity and AI pattern recognition
- **Activity:** Compare human and AI approaches to persuasive writing on personal topics

## Component 7: Evaluating AI Outputs (CRITIC Framework)

### Elementary School (K-5)

- **CRITIC Method:**
  - **C**heck if it makes sense
  - **R**ead it carefully
  - **I**dentify anything confusing
  - **T**alk to a teacher if unsure
  - **I**nvestigate with other sources
  - **C**orrect any mistakes you find
- **When AI Helps Best:** Simple facts, explanations of words, basic information

### Middle School (6-8)

- **CRITIC Method:**
  - **C**ontent relevance: Does it answer my specific question?
  - **R**eliability: Can I verify this information elsewhere?
  - **I**naccuracies: Are there any factual errors?
  - **T**one and style: Is this written at my level?
  - **I**ncomplete areas: What's missing that I need to add?
  - **C**ustomization needed: How do I need to adapt this for my purpose?
- **AI Strengths & Limitations Chart:**
  - Strong: Explaining concepts, organizing information, providing examples
  - Limited: Current events, classroom-specific information, personal experiences
  - Poor: Creative originality, emotional depth, specialized knowledge

## High School (9-12)

- **CRITIC Method:**
  - **C**redibility: How trustworthy is this information?
  - **R**elevance: How well does this address my specific needs?
  - **I**mpartiality: What perspectives or biases are present or missing?
  - **T**horoughness: What important aspects might be missing?
  - **I**ntegration potential: How can I incorporate this into my work while adding value?
  - **C**orrective needs: What aspects require human improvement or verification?
- **Decision Framework for AI Use:**
  - Appropriate uses: Brainstorming, summarizing information, getting feedback, explaining concepts
  - Limited uses: Research starting points (requiring verification), writing assistance (requiring significant revision)
  - Inappropriate uses: Substituting for critical analysis, replacing personal reflection, bypassing skill development

# Implementation Guide

## Step 1: Customize

- Select and adapt the components most relevant to your grade level and subject area
- Modify language to match your school's existing academic integrity and technology policies
- Adjust examples to align with your curriculum

## Step 2: Introduce

- Present the framework as a tool for empowerment, not restriction
- Demonstrate both appropriate and inappropriate AI use examples
- Practice using the evaluation frameworks with simple exercises

## Step 3: Integrate

- Build AI literacy into existing digital citizenship curriculum
- Create assignment-specific guidelines using the framework
- Develop assessment criteria that value both AI-assisted and independent work

## Step 4: Reinforce

- Regularly revisit and practice the frameworks
- Celebrate examples of responsible and creative AI use
- Update guidelines as AI technology evolves

# Sample Grade-Level Quick Guides

## Elementary School Quick Guide

- **AI Definition:** AI is a smart computer tool that helps answer questions and find information.
- **When to Use AI:** To learn new facts, understand difficult words, or get ideas.
- **When Not to Use AI:** For telling personal stories or showing what you've learned yourself.
- **Important Rules:**
  1. Always tell your teacher when you use AI
  2. Check AI answers with a book or trusted website
  3. Give credit to AI when it helps you
  4. Never share personal information with AI
- **How to Check AI Information:** Use the FACTS method!

## Middle School Quick Guide

- **AI Definition:** AI systems use data and algorithms to identify patterns, make predictions, and generate content.
- **Appropriate Uses:**
  - Brainstorming ideas for projects
  - Explaining concepts you find confusing
  - Organizing information you've collected
  - Getting suggestions for improvement
- **Inappropriate Uses:**
  - Having AI write entire assignments
  - Using AI answers without verification
  - Bypassing learning important skills
  - Sharing or using AI content without attribution
- **Documentation Required:** AI attribution statement for any AI-assisted work
- **Evaluation Method:** Use the CRITIC framework to assess AI outputs

## High School Quick Guide

- **AI Definition:** AI systems, including Large Language Models, use complex algorithms to analyze data, recognize patterns, and generate predictions or content based on vast training datasets.
- **Responsible Use Guidelines:**
  - Follow specific assignment guidelines regarding permitted AI use
  - Document all AI interactions with the Consultation Log
  - Verify information using credible sources

- Add substantial original thinking beyond AI suggestions
- Properly cite AI contributions in your work
- **Ethical Considerations:**
  - Academic integrity requires transparency about AI use
  - Skill development requires balance between AI assistance and independent work
  - Critical thinking means questioning and improving upon AI outputs
- **Decision Framework:** Use the detailed CRITIC method and refer to course-specific guidelines

# Appendix: Documentation Templates

## Elementary AI Helper Lo

Today I used an AI helper to learn about \_\_\_\_\_.

It helped me by \_\_\_\_\_.

I checked the information by \_\_\_\_\_.

I added my own ideas by \_\_\_\_\_.

## Middle School AI Documentation Form

Assignment: \_\_\_\_\_

AI tool used: \_\_\_\_\_

What I asked the AI: \_\_\_\_\_

How the AI responded: \_\_\_\_\_

How I verified the information: \_\_\_\_\_

How I improved or changed the AI response: \_\_\_\_\_

What I learned through this process: \_\_\_\_\_

## High School AI Consultation Log

Assignment: \_\_\_\_\_

Date: \_\_\_\_\_

AI tool(s) used: \_\_\_\_\_

Prompt 1: \_\_\_\_\_

Response summary: \_\_\_\_\_

Verification method: \_\_\_\_\_

Incorporation method: \_\_\_\_\_

Original contribution: \_\_\_\_\_

Prompt 2: \_\_\_\_\_

[continue as needed]

Reflection on process:

- How did using AI enhance my understanding? \_\_\_\_\_

- What unique value did I add beyond the AI? \_\_\_\_\_

- How might I improve my approach next time? \_\_\_\_\_

*This framework was developed based on the Modern Language Association's "Student Guide to AI Literacy" and Harvard Business Publishing's "Student Use Cases for AI" resources, adapted for K-12 educational settings.*

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