

ALDEYA

EDUCATIONAL FRAMEWORK

FOR K-12 EDUCATORS

# The Aldeya Bloom's for *AI* Framework

*A Framework for AI-Assisted Learning  
in K-12 Classrooms*

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# The Original Still Stands

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The original Bloom's taxonomy thesis — that original human creation is the highest order of learning — remains the gold standard. This framework maps a parallel pathway for AI-assisted outputs, preserving rigor while preparing students for the workforce. Both pathways require the full knowledge base. Both require thinking. They apply it differently.

Bloom's taxonomy was built on the premise that the highest form of learning is original human creation: the ability to produce something new from what you know. The 2001 revision (Anderson & Krathwohl) reordered the taxonomy and placed Create at the top, reasoning that producing something original requires evaluative judgment, making creation the most cognitively complex task.

That reasoning still holds for original work. The original taxonomy should continue to be taught, practiced, and assessed at every grade level.

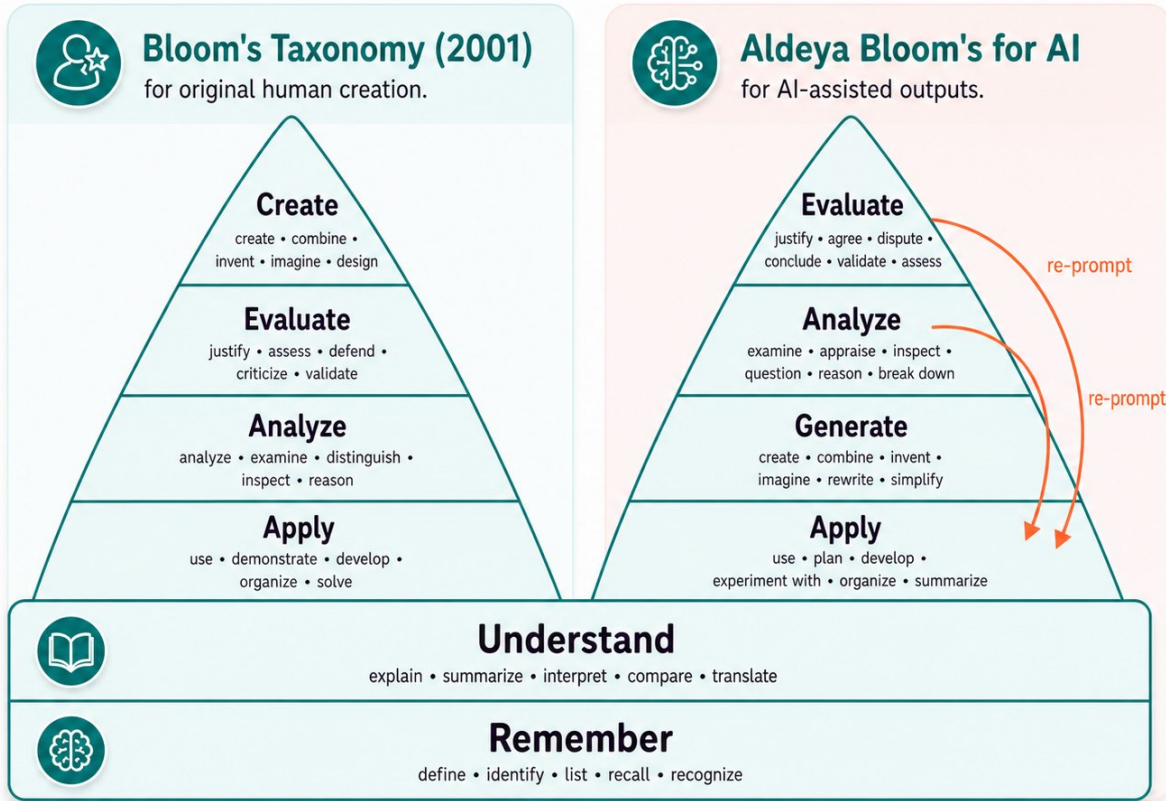
## THE CORE PRINCIPLE

Both pathways begin with the same foundation: **Remember and Understand**. The difference is what students do with that knowledge once they have it, and where the highest cognitive demand sits.

This framework does not replace Bloom's original. It maps what rigorous, intentional AI use should look like when AI-assisted outputs are appropriate — a parallel pathway that demands the same foundational knowledge and places the highest cognitive demand on evaluation and judgment, not creation.

# The Aldeya Bloom's for AI Framework

## Aldeya Bloom's for AI Framework



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# The New Bloom's

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AI is already in the workforce, and students are already using it whether schools introduce it or not. As of 2025, 84% of high school students reported using generative AI for schoolwork. 54% of students overall reported using AI for school, an increase of more than 15 percentage points in a single year, while only 35% of district leaders reported providing students with any AI training. Half of students said they worried about being falsely accused of using AI to cheat.

The question is no longer whether to address AI in school. It is how to teach students to work with it in a way that allows for rigorous learning.

The Aldeya Bloom's for AI framework maps the cognitive demands of that process. It is not a shortcut. It requires the same foundational knowledge as the original framework. The difference is in what students do with that knowledge and where the highest cognitive demands sit.

Research on AI and decision-making points to a consistent finding: AI cannot exercise judgment.

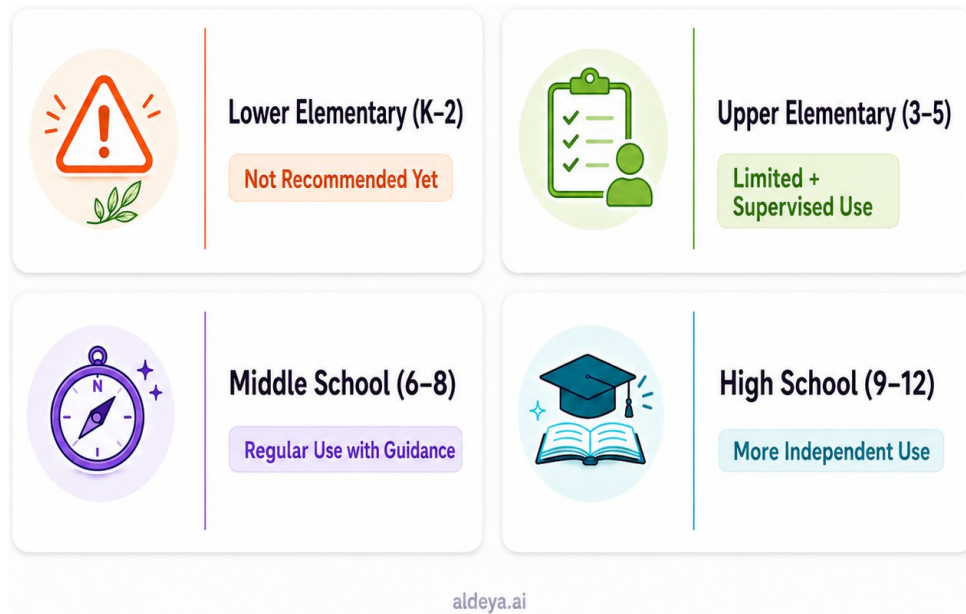
*"The tasks that require abstract thinking, ethical reasoning, contextual interpretation, and the ability to handle ambiguity — these are precisely the tasks where human cognition cannot be substituted."*

— Professor Andrew Likierman, London Business School (2025)

Judgment requires the combination of relevant knowledge, experience, and personal qualities to form opinions and make decisions. AI can process information and generate output, but it cannot weigh context, apply values, or account for the nuances of a specific situation.

Professor Andrew Likierman of London Business School argues that rather than diminishing the role of human judgment, AI makes it more essential. In an educational context, that means evaluation — the act of assessing, weighing, and defending a conclusion using knowledge and judgment — remains a distinctly human cognitive task.

# A Note on Developmental Readiness



## Lower Elementary (K-2): Not Recommended

Young students need to develop their foundational knowledge base and practice original creation first. The original framework should be the exclusive model. Skipping foundational work risks producing students who can prompt without comprehending.

## Middle School (6-8): Regular Use with Guidance

Students may engage more regularly with AI-assisted outputs. The teacher should ensure that original creation has been practiced first, and the framework should be taught explicitly rather than assumed.

## Upper Elementary (3-5): Limited + Supervised

AI-assisted work may be introduced in limited, supervised contexts, and only after students have demonstrated they can produce original work through the original framework on the same or similar content.

## High School (9-12): More Independent Use

Students can work more independently with AI-assisted outputs. Original creation should still be incorporated regularly. The evaluation step should be held to a high standard, including source verification and explicit defense of judgments.

# Leveled Classroom Examples

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The leveled examples that follow show the full Aldeya Bloom's for AI sequence so teachers can see how foundational knowledge connects to AI-assisted work.

In practice, the *new* cognitive demands of this framework live in the latter phases: Apply, Generate, Analyze, and Evaluate. The Remember and Understand steps look the same as they do in any well-designed lesson. Your existing planning for those phases continues to apply.

See: *Anatomy of a Good Prompt* in resources at the end of this document.

## HOW TO READ THESE EXAMPLES

Each example shows the complete six-phase sequence — from foundational Remember and Understand through the four AI-assisted phases.

The teacher note at the bottom of each example addresses prerequisite conditions and common pitfalls to watch for.

# ELA — Grades 3-5

Topic: Persuasive paragraph structure

## STANDARDS

- CCSS.ELA-LITERACY.W.5.1 — Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
- CCSS.ELA-LITERACY.RI.5.8 — Explain how an author uses reasons and evidence to support points in a text.
- CCSS.ELA-LITERACY.W.5.5 — With guidance and support, develop and strengthen writing as needed by planning, revising, and editing.

## REMEMBER

Students recall the parts of a persuasive paragraph: claim, reasons, evidence, and conclusion.

## UNDERSTAND

Students explain why each part matters and what makes a claim strong or weak.

## APPLY

Students write a prompt directing the AI. For example: "Write a short persuasive paragraph for a 5th grader arguing that schools should have longer recess. Include a clear claim, two reasons with evidence, and a one-sentence conclusion. Keep it to about 100 words."

## GENERATE

AI produces a persuasive paragraph following the prompt.

## ANALYZE

Students compare the AI's paragraph to a class rubric for persuasive writing. They identify which parts the AI included clearly, which parts are missing or weak, and where the reasons or evidence may not be convincing.

## EVALUATE

Students rate the paragraph against the rubric. They write two to three sentences explaining their rating, naming what would need to change for the paragraph to score higher.

## TEACHER NOTE

*This activity works best when students have already demonstrated their ability to write a persuasive paragraph on a different topic. Alternatively, the AI output can serve the second draft of their own thinking, not the first.*

# Social Studies — Grades 4-5

Topic: Causes of the American Revolution

## STANDARDS

- C3 Framework D2.His.14.3-5 — Explain probable causes and effects of events and developments.
- CCSS.ELA-LITERACY.RI.5.2 — Determine two or more main ideas of a text and explain how they are supported by key details.
- CCSS.ELA-LITERACY.W.5.8 — Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information.

## REMEMBER

Students recall key events, figures, and grievances: the Stamp Act, the Boston Tea Party, the concept of taxation without representation.

## UNDERSTAND

Students explain in their own words why colonists objected to British rule and what they wanted to change.

## APPLY

Students write a prompt directing the AI. For example: *"I am a 5th grader studying the American Revolution. Summarize the three most important causes of the Revolution from the colonists' perspective. Use simple language and no more than one paragraph per cause."*

## GENERATE

AI produces a summary of three causes.

## ANALYZE

Students compare the AI's summary to their class notes and textbook. Where does it match? What did the AI leave out? Did it get anything wrong?

## EVALUATE

Students assess the AI's summary. Is it accurate? Is it complete? Students write two to three sentences defending their judgment, citing their own knowledge as evidence.

## TEACHER NOTE

*This activity works best as a follow-up to original written work on the same topic. Students should have already demonstrated their ability to write an explanation of the Revolution's causes before comparing it to AI output.*

# Science — Grades 6-8

Topic: Causes and effects of climate change

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## STANDARDS

- NGSS MS-ESS3-5 — Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.
- CCSS.ELA-LITERACY.RST.6-8.1 — Cite specific textual evidence to support analysis of science and technical texts.
- CCSS.ELA-LITERACY.RST.6-8.8 — Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.

## REMEMBER

Students recall the greenhouse effect, key greenhouse gases, and the carbon cycle.

## UNDERSTAND

Students explain how human activity increases atmospheric CO<sub>2</sub> and why this affects global temperatures.

## APPLY

Students write a prompt directing the AI. For example: *"I am an 8th grader studying climate change. Explain one specific effect of rising global temperatures on coastal communities in the United States. Include at least two pieces of data and cite your sources."*

## GENERATE

AI produces an explanation with claims and citations.

## ANALYZE

Students compare the AI's response to their class materials. They identify which claims are supported by what they have learned, which claims they cannot verify, and where the AI may have overgeneralized or left out important context.

## EVALUATE

Students rate the AI's response on accuracy, completeness, and clarity. They write a paragraph defending their rating and identifying what they would need to research further before using this output in an assignment.

# Math — Grades 6-8

Topic: Linear equations and slope

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## STANDARDS

- CCSS.MATH.CONTENT.8.EE.B.5 — Graph proportional relationships, interpreting the unit rate as the slope of the graph.
- CCSS.MATH.CONTENT.8.F.B.4 — Construct a function to model a linear relationship between two quantities.
- Standards for Mathematical Practice 3 — Construct viable arguments and critique the reasoning of others.

## REMEMBER

Students recall the slope formula and the slope-intercept form of a linear equation ( $y = mx + b$ ).

## UNDERSTAND

Students explain what slope represents in a real-world context: rate of change, steepness, direction.

## APPLY

Students write a prompt directing the AI. For example: *"Write a word problem for an 8th grade math class that requires students to calculate slope using two points. The problem should involve a real-world situation. Show the setup but not the solution."*

## GENERATE

AI produces a word problem.

## ANALYZE

Students check whether the problem is mathematically sound. Can it be solved with the formula they know? Are the numbers reasonable? Does the real-world context make sense?

## EVALUATE

Students assess whether the problem would be a good assessment item. They identify what it tests well, what it does not test, and whether they would use it as written or revise it. Students must justify their decision.

# Science — Grades 9-12

Topic: CRISPR gene editing — ethics and applications

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## STANDARDS

- NGSS HS-LS3-1 — Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits.
- CCSS.ELA-LITERACY.RST.11-12.7 — Integrate and evaluate multiple sources of information presented in diverse formats.
- CCSS.ELA-LITERACY.WHST.11-12.1 — Write arguments focused on discipline-specific content.

## REMEMBER

Students recall how CRISPR works at a conceptual level, its current medical applications, and the key ethical questions it raises.

## UNDERSTAND

Students explain the distinction between somatic and germline gene editing and why that distinction matters ethically.

## APPLY

Students write a prompt directing the AI. For example: *"I am a high school student researching the ethics of CRISPR gene editing in humans. Summarize the three strongest arguments in favor of germline editing and the three strongest arguments against it. Cite peer-reviewed sources where possible."*

## GENERATE

AI produces a structured summary of arguments and citations.

## ANALYZE

Students evaluate the arguments the AI produced. Are the pro and con arguments equally developed? Are any arguments missing? Are the sources credible and verifiable? Students identify at least one gap or weakness in the AI's framing.

## EVALUATE

Students defend a position on germline editing using the AI output as one source among several. Their evaluation must explicitly address the strongest counterargument and explain why they find their position more persuasive. AI output alone is not sufficient evidence.

# Math — Grades 9-12

Topic: Statistics and data interpretation

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## STANDARDS

- CCSS.MATH.CONTENT.HSS.IC.B.6 — Evaluate reports based on data.
- CCSS.MATH.CONTENT.HSS.ID.A.2 — Use statistics appropriate to the shape of the data distribution to compare center and spread of two or more different data sets.
- Standards for Mathematical Practice 3 — Construct viable arguments and critique the reasoning of others.

## REMEMBER

Students recall measures of central tendency, standard deviation, and the concept of statistical bias.

## UNDERSTAND

Students explain what makes a data set reliable or unreliable and how sample size and selection affect conclusions.

## APPLY

Students write a prompt directing the AI. For example: *"Here is a data set showing test scores for 30 students across three class sections. [Paste data.] Identify the mean, median, and standard deviation for each section. Then describe any trends you observe and note any limitations in what this data can tell us."*

## GENERATE

AI produces calculations and a trend analysis.

## ANALYZE

Students check the AI's calculations against their own. They identify where the AI's trend analysis is supported by the data and where it draws conclusions the data does not fully support.

## EVALUATE

Students write a short statistical summary of the data, using the AI output as a reference but correcting any errors and adding their own interpretive judgment. They must note at least one conclusion the AI drew that they disagree with and explain why.

# Planning Questions

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## For Teachers: Before Introducing This Framework

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Before using the Aldeya Bloom's for AI framework in your classroom, sit with these questions.

- 1 Have my students demonstrated they can produce original work through the original Bloom's framework on this topic or a closely related one?
- 2 Is AI-assisted output the right tool for this learning goal, or would original creation serve the objective better?
- 3 What knowledge base do my students need in order to evaluate AI output critically on this topic? Have they built that base?
- 4 How will I assess whether students are genuinely evaluating the AI's output rather than accepting it?
- 5 What does strong evaluation look like for this assignment? What evidence will students need to cite?

## For Students: During AI-Assisted Work

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Before submitting any work that involved AI output, students should be able to answer these questions.

- 1 What did I already know about this topic before I wrote my prompt? Could I explain the topic without the AI's help?
- 2 Is the AI's output accurate? What in my notes, textbook, or prior knowledge supports or contradicts it?
- 3 What is missing, incomplete, or potentially biased in the AI's output?
- 4 Can I defend my evaluation of this output using evidence? Where does that evidence come from?
- 5 If I had to explain this topic to a classmate without using the AI's output, could I do it?

# Want to Go Deeper?

## CONTINUE LEARNING

This framework is one part of *Architects of the AI-Ready Classroom: How K-12 Teachers Can Lead AI-Assisted Learning Without Losing Rigor* — a practical guide covering lesson design, formative and summative assessment, and ethical AI use for educators. Find this and more resources at [aldeya.ai/links](https://aldeya.ai/links)

## Resources

The pages contain classroom-ready visuals for this framework document. Additional resources — including printable worksheets and professional development guides — are available at [aldeya.ai/links](https://aldeya.ai/links).

Resources in this document: AI Use Recommendations by Grade Level · A Closer Look at the Aldeya Bloom's for AI Framework · Anatomy of a Strong Prompt

For access to more resources, AI in Ed news, and hot takes, subscribe to Aldeya's free AI newsletter, Campana, by heading to [campana.aldeya.ai](https://campana.aldeya.ai)

# AI Use Recommendations by Grade Level

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## Lower Elementary (K–2)

### Not Recommended Yet

- Use the original framework only.
- Students need to build foundational knowledge and practice original creation first.
- Skipping foundational work risks students who can prompt without comprehending.



## Upper Elementary (3–5)

### Limited + Supervised Use

- AI-assisted work may be introduced in small, supervised contexts.
- Only after students can produce original work on the same or similar content.
- Original creation comes first.



## Middle School (6–8)

### Regular Use with Guidance

- Students may engage more regularly with AI-assisted outputs.
- Make sure original creation has been practiced first.
- Teach the framework explicitly rather than assuming students understand it.



## High School (9–12)

### More Independent Use

- Students can work more independently with AI-assisted outputs.
- Continue incorporating original creation alongside AI-assisted work.
- Hold evaluation to a high standard: verify sources and defend judgments clearly.

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aldeya.ai · When to use the Aldeya Bloom's for AI framework by grade band.

# A Closer Look at the Aldeya Bloom's for AI Framework

## A CLOSER LOOK... ..



### APPLY

Develop and organize a thorough prompt.



### GENERATE

Read the full output. Don't skim.



### ANALYZE

Inspect the output for anything wrong, incomplete, or biased.



### EVALUATE

Score it. Defend your score with evidence.

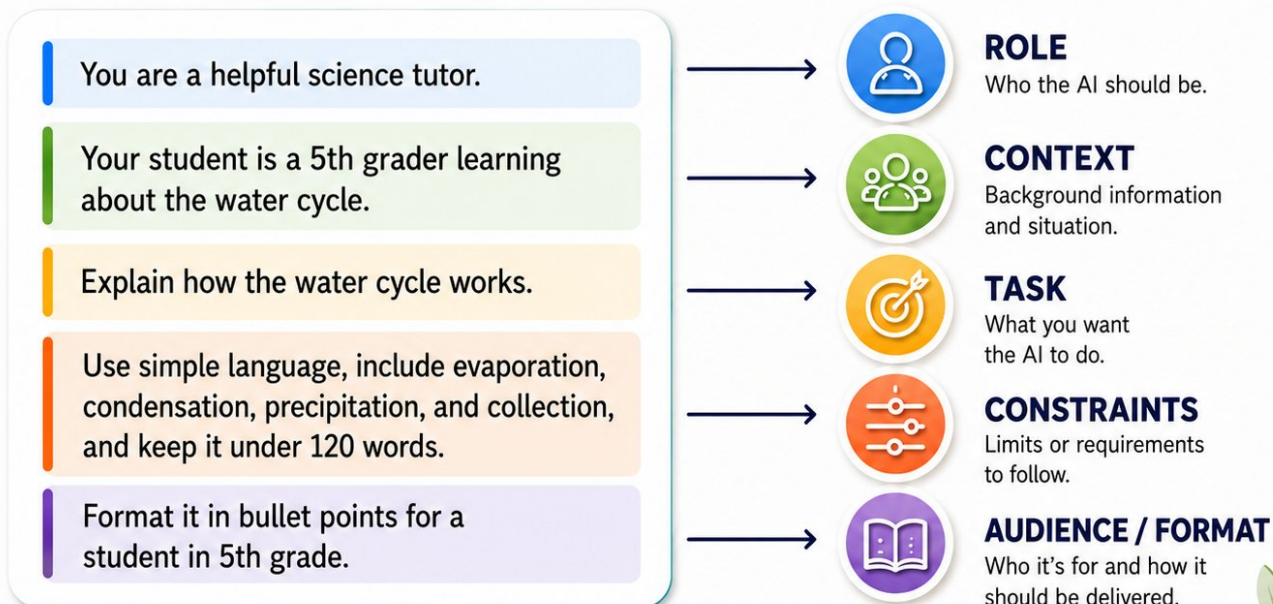
Re-prompt and try again  
*improve your input*



Remember → Understand → Apply → Generate → Analyze → Evaluate

aldeya.ai · Apply → Generate → Analyze → Evaluate, with the re-prompt loop.

## ANATOMY OF A STRONG PROMPT



The clearer your prompt, the more useful the output.  
**Be as specific as possible**

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