Milo's Smart Machine Adventure: Learning to Ask Detailed Questions and Prompts

STEAM Domain	*Learning Objectives*	*Story Connections*	*Assessment Opportunities*	*Extension Activities*
SCIENCE	Understand basic concepts of artificial intelligence and machine learning Explore how computers process and respond to input Investigate cause-and-effect relationships in technology Develop scientific vocabulary related to computing	The Idea Machine as a simplified AI model Input (prompts) and output (creations) demonstration Trial and error scientific method Milo's hypothesis testing with different prompts	Students explain how the Idea Machine works Compare/contrast human vs. machine creativity Design experiments with different prompt types Create diagrams of input-output processes	Research real AI applications Build simple "if-then" logic games Interview adults about technology changes Create a class "invention timeline"
TECHNOLOGY	Demonstrate digital literacy and responsible technology use Understand human-computer interaction principles Practice prompt engineering and clear communication with AI tools Explore different types of digital creation tools	Prompt engineering fundamentals Human-AI collaboration model Different output formats (art, stories, poems) Iterative improvement process	Students write effective prompts for various tasks Evaluate prompt clarity and specificity Create technology use guidelines Compare different AI tool capabilities	Use age-appropriate AI tools for creative projects Create "How to Talk to Computers" guides Design user interfaces for idea machines Build simple chatbots or decision trees
ENGINEERING	Apply design thinking process (empathize, define, ideate, prototype, test) Practice problem decomposition and systematic thinking	Milo's design challenge (creating the perfect card) Iterative improvement of prompts	Students design solutions to creative challenges Document their iteration process	Engineer simple machines or contraptions Design and build "Idea Machines" from cardboard

STEAM Cross-Curricular Connections & Core Learning Objectives

SmartTechKids

STEAM Domain	*Learning Objectives*	*Story Connections*	*Assessment Opportunities*	*Extension Activities*
	Understand iteration and improvement cycles Develop troubleshooting skills	Problem-solving through specification Breaking complex tasks into steps	Explain how they improved their approach Create step-by-step instruction guides	Create flowcharts for complex tasks Develop classroom helper robots(imaginary)
ARTS	Explore various artistic styles and creative expression Understand the creative process and artistic choices Practice descriptive language for visual communication Develop aesthetic appreciation and critical thinking	Different artistic styles shown by the Idea Machine Creative collaboration between Milo and AI Visual storytelling through pictures and words Family creativity and gift-making tradition	Students create art in multiple styles Write detailed descriptions of their artistic visions Critique and improve creative works Present their creative process to others	Create family gift projects Explore different art mediums and techniques Design book covers and illustrations Write and illustrate their own AI stories
MATHEMATICS	Practice logical reasoning and sequential thinking Understand patterns and systematic approaches Apply measurement and comparison concepts Develop precision in communication and instruction	Logical sequence of prompt improvement Pattern recognition ineffective communication Systematic approach to problem-solving Precision in descriptive language	Students create logical sequences of tasks Measure improvement in prompt effectiveness Graph success rates of different approaches Calculate efficiency of various methods	Create mathematical word problems about AI Design algorithms for everyday tasks Use data to improve creative processes Measure and compare creative output quality