SPECIFIC STEM CATEGORIES: 7-9 YEARS

The toy supports one or more learning goals in at least two STEM subjects.

RATING CRITERIA

Area	Criteria	Example Toy
Science	**Scientific Practices** • Planning and conducting investigations to produce data to serve as the basis for evidence to answer a question **Organisms** • Understanding that life cycles are diverse, but all organisms have in common birth, growth, reproduction, and death **Ecosystems** • Understanding that plants need sunlight and water to grow • Understanding how animals disperse seeds and pollinate plants • Understanding that some animals form groups to help with survival (e.g. obtaining food or defending themselves) **Evolution, Heredity, and Genetics** • Understanding that plants and animals have traits inherited from parents, and that these traits can be influenced by the environment • Observing and comparing plants and animals in different habitats • Exploring fossils to understand the organisms and the environments in which they lived long ago • Understanding how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing (e.g. plants with larger thorns may be less likely to be eaten, animals with better camouflage may be more likely to survive and reproduce) • Understanding that in a habitat some organisms can survive well, some survive less well, and some cannot survive at all	**TEDCO, Inc. Rainforest 3D Puzzle Set** A collection of eight rainforest animal puzzles for children to explore and compare, with information cards to support children's learning.

RATING CRITERIA

Area	Criteria
Science	**Matter** • Classifying materials by observable properties, and understanding that some materials are best suited for different purposes (e.g. plastic to float) • Understanding how an object made of a small set of pieces can be disassembled and made into a new object • Understanding reversible and irreversible changes caused by heating or cooling **Forces** • Understanding the impact of balanced and unbalanced forces on the motion of an object • Observing and measuring an object's motion to identify a pattern, that can be used to predict future motion (e.g. swinging on a swing) • Exploring the cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other **Earth and Astronomy** • Understanding that some Earth events happen slowly (e.g. erosion of rocks) and some happen quickly (e.g. volcanic explosions) **Earth's Systems** • Exploring how to slow the effect of wind and water in shaping the land • Understanding the different kinds of land and bodies of water, and where water is found on Earth (as a solid or liquid) • Describing typical weather conditions expected during a season using data in tables and graphs • Exploring information describing climates in different regions of the world

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RATING CRITERIA

Area	Criteria	Example Toy
Technology	**Digital Tools** • Using technology tools to support their learning (e.g. text to speech, audio, video, highlighting) • Using technology to seek feedback to inform learning (e.g. spellcheck, online search) • Using technology to demonstrate learning (e.g. digital posters, blogs) • Using basic devices and software applications • Solving technical problems (e.g. restarting a device, installing updates) and transferring this knowledge to new technologies **Digital Citizenship** • Understanding the permanence of their actions in the digital world • Engaging in positive, safe, legal and ethical behavior when using technology • Managing personal data to maintain digital privacy and security and being aware of data-collection technology used to track their navigation online **Information Gathering** • Using effective research strategies to locate information and other resources through digital tools (e.g. using multiple sources, video and audio clips) • Curating information from digital resources using a variety of tools (e.g. note taking, citation tools) • Actively exploring real-world issues and problems using digital tools	**Zing StikBot Studio** Poseable figurines that allow children to film and edit stop motion animations, using an app.

RATING CRITERIA

Area	Criteria
Technology	**Innovation and Creation** • Using a deliberate design process for generating ideas, testing theories, creating innovative artifacts (e.g. 3D printing, computer programs, robotics, simulations, virtual representations, prototypes) or solving authentic problems using technology • Using digital tools to plan and manage a design process that considers design constraints and calculated risks • Developing, testing and refining prototypes as part of a cyclical design process • Creating original works or responsibly repurposing or remixing digital resources into new creations • Customizing content to suit the intended audience **Computational Thinking** • Identifying problems that can benefit from technology-assisted methods such as data analysis, abstract models, and algorithmic thinking in exploring and finding solutions • Collecting (e.g. surveys) or identifying (e.g. big data) relevant data sets and using digital tools to analyze and represent the data to facilitate problem-solving and decision-making • Understanding how technology can be used for repetitive tasks (automation) and using algorithmic thinking to develop a sequence of steps (e.g. coding) to create and test automated solutions

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RATING CRITERIA

Area	Criteria	Example Toy
Engineering	**Applied Science** • Solving simple design problems by applying scientific ideas about magnets • Considering the merit of design solutions that reduce the impacts of a weather-related hazard (e.g. barriers to prevent flooding) **General Engineering** • Defining problems and identifying how they can be solved through the development of a new object or tool • Defining a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost • Developing simple drawings to illustrate how the shape of an object can help it function as needed to solve a problem • Comparing the strengths and weaknesses of two objects designed to solve the same problem • Generating and comparing multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem • Planning and carrying out fair tests to identify how a model or prototype can be improved	**Learning Resources Playground Engineering & Design Building Set** A playground-themed construction set that gives children engineering challenges, including using gears and levers.

RATING CRITERIA

Area	Criteria	Example Toy
Mathematics	**Numbers and Operations** • Counting in ones, fives, tens, and 100s • Recognizing digit place (e.g. 853 is 8 hundreds + 5 tens + 3 ones) • Addition and subtraction within 1,000 • Multiplying and dividing whole numbers within 100 • Understanding and comparing unit fractions (e.g. 1/2. 1/5) **Shapes and Measurements** • Using standard measurements in time, liquid volume, mass, and length • Describing and comparing 2D shapes by sides and angles • Building and drawing 2D and 3D shapes • Recognizing and measuring area as an attribute of 2D shapes • Partitioning circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc. • Working with time (analog and digital, to the nearest five minutes) and money (involving dollar bills, quarters, dimes, nickels, and pennies) **Analysis** • Representing and interpreting data with picture graphs and bar graphs	**Fat Brain Toys Splitting Image** A game that requires children to create symmetrical shapes using a mirror, to match a range of challenge cards.