SPECIFIC STEM CATEGORIES: 4-6 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 investigating with guidance **Organisms** • Observing patterns and understanding what plants and animals (including humans) need to survive • Understanding how parents engage in behavior to help offspring survive **Ecosystems** • Understanding that plants need sunlight and water to grow • Understanding how animals disperse seeds and pollinate plants **Evolution, Heredity, and Genetics** • Observing and comparing plants and animals in different habitats • Observing that plant and animal offspring are similar, but not identical to, their parents **Matter** • Classifying materials by observable properties, and understanding that some materials are best suited for different purposes (e.g. plastic to float) • Understanding reversible and irreversible changes caused by heating or cooling • Understanding how an object made of a small set of pieces can be disassembled and made into a new object	**Insect Lore Live Butterfly Garden** A science kit that enables children to observe the life cycle of real butterflies up close. 

RATING CRITERIA

Area	Criteria
Science	**Forces, Energy, and Waves** • Exploring the effect of push and pull motions on objects • Observing the effect of sunlight on Earth's surface • Understanding the link between sound and vibrations • Understanding that objects in darkness can be seen when illuminated, and the effect of placing objects in the path of a beam of light **Earth and Astronomy** • Observing patterns in the sun, moon and stars • Observing how the amount of daylight changes through the year • Understanding that some Earth events happen slowly (e.g. erosion of rocks) and some happen quickly (e.g. volcanic explosions) **Earth's Systems and Human Activity** • Observing weather patterns • Understanding how plants and animals (including humans) can change the environment to suit their needs (e.g. a squirrel digging in the ground to hide its food) • Exploring how wind and water shape the land, and where water is found on Earth (as a solid or liquid) • Understanding the relationship between the needs of different plants and animals (including humans) and the places they live • Understanding the purpose of weather forecasting to prepare for, and respond to, severe weather • Understanding how to reduce the impact of humans on the land, water, air, and/or other living things in the local

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Area	Criteria	Example Toy
Technology	**Digital Tools** • Using basic devices and software applications **Digital Citizenship** • Engaging in positive, safe, legal and ethical behavior when using technology **Innovation and Creation** • Using a deliberate design process for generating ideas, testing theories, and creating innovative artifacts (e.g. 3D printing, computer programs, robotics, simulations, virtual representations, prototypes) • Creating original works or responsibly repurposing or remixing digital resources into new creations **Computational Thinking** • Using algorithmic thinking to develop a sequence of steps (e.g. coding) to create and test automated solutions	**VTech Kidizoom Twist** A working camera that allows children to experiment with taking and editing photos, plus camera technology such as zoom. 
Engineering	**Applied Science** • Exploring solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment (e.g. reusing paper and recycling cans and bottles) • Designing and building a device that uses light or sound to solve the problem of communicating over a distance (e.g. paper cup and string "telephones") • Designing a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs (e.g. clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales) • Testing different materials to determine which materials have the properties that are best suited for an intended purpose	**Magformers Amazing Transform Wheel Set** A construction set that allows children to build simple working vehicles, introducing them to wheels. 

RATING CRITERIA

Area	Criteria	Example Toy
Engineering	• Comparing solutions designed to slow or prevent wind or water from changing the shape of the land • Designing and building a structure that will reduce the warming effect of sunlight on Earth's surface **General Engineering** • Defining problems and identifying how they can be solved through the development of a new object or tool • 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	*See example on page 18.*
Mathematics	**Numbers and Operations** • Counting to 100 by ones and 10s • Understanding place value, grouping in 10s and ones • Representing, adding and subtracting whole numbers with objects and numerals within 20 **Shapes and Measurements** • Identifying and describing basic 2D and 3D shapes (e.g. squares, triangles, cubes, and cones) in different sizes and orientations • Modelling and drawing 2D and 3D shapes, and composing larger shapes from smaller ones (e.g. two triangles to make a square) • Describing and comparing measurements • Understanding iterating, the mental activity of building up the length of an object with equal-sized units • Telling and writing time in hours and half-hours using analog and digital clocks **Analysis** • Counting the number of objects in categories • Representing and interpreting data with up to three categories	**Bigjigs Toys My First Wooden Fractions Puzzle** A puzzle that encourages children to practice matching wooden numbers, shapes and fractions.