

SPECIFIC STEM CATEGORIES: 4-6 YEARS

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

RATING CRITERIA

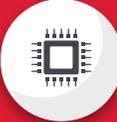
| Area | Criteria | Example Toy |
|---|--|--|
| Science  | <p>Scientific Practices</p> <ul style="list-style-type: none"> • Planning and investigating with guidance <p>Organisms</p> <ul style="list-style-type: none"> • Observing patterns and understanding what plants and animals (including humans) need to survive • Understanding how parents engage in behavior to help offspring survive <p>Ecosystems</p> <ul style="list-style-type: none"> • Understanding that plants need sunlight and water to grow • Understanding how animals disperse seeds and pollinate plants <p>Evolution, Heredity, and Genetics</p> <ul style="list-style-type: none"> • Observing and comparing plants and animals in different habitats • Observing that plant and animal offspring are similar, but not identical to, their parents <p>Matter</p> <ul style="list-style-type: none"> • 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 | <p>Insect Lore Live Butterfly Garden</p> <p>A science kit that enables children to observe the life cycle of real butterflies up close.</p>  |

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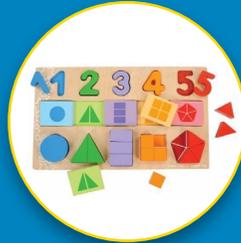
| Area | Criteria | |
|---|---|--|
| Science  | <p>Forces, Energy, and Waves</p> <ul style="list-style-type: none"> • Exploring the effect of push and pull motions on objects • Observing the effect of sunlight on Earth's surface • Understanding the link between sound and vibrations • Understanding that objects in darkness can be seen when illuminated, and the effect of placing objects in the path of a beam of light <p>Earth and Astronomy</p> <ul style="list-style-type: none"> • 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) <p>Earth's Systems and Human Activity</p> <ul style="list-style-type: none"> • 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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| Technology  | <p>Digital Tools</p> <ul style="list-style-type: none"> Using basic devices and software applications <p>Digital Citizenship</p> <ul style="list-style-type: none"> Engaging in positive, safe, legal and ethical behavior when using technology <p>Innovation and Creation</p> <ul style="list-style-type: none"> 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 <p>Computational Thinking</p> <ul style="list-style-type: none"> Using algorithmic thinking to develop a sequence of steps (e.g. coding) to create and test automated solutions | <p>VTech Kidizoom Twist</p> <p>A working camera that allows children to experiment with taking and editing photos, plus camera technology such as zoom.</p>  |
| Engineering  | <p>Applied Science</p> <ul style="list-style-type: none"> 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 | <p>Magformers Amazing Transform Wheel Set</p> <p>A construction set that allows children to build simple working vehicles, introducing them to wheels.</p>  |

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|--|---|---|
| Engineering  | <ul style="list-style-type: none"> 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 <p>General Engineering</p> <ul style="list-style-type: none"> 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 | <p>See example on page 18.</p> |
| Mathematics  | <p>Numbers and Operations</p> <ul style="list-style-type: none"> 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 <p>Shapes and Measurements</p> <ul style="list-style-type: none"> 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 <p>Analysis</p> <ul style="list-style-type: none"> Counting the number of objects in categories Representing and interpreting data with up to three categories | <p>Bigjigs Toys My First Wooden Fractions Puzzle</p> <p>A puzzle that encourages children to practice matching wooden numbers, shapes and fractions.</p>  |