



# **The SAGE Encyclopedia of Out-of-School Learning**

## **LEGO and LEGO Foundation**

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Over its 85-year history, LEGO has established its distinctive plastic bricks as a near-universally recognized brand. It has sustained an image perhaps unique among commercial toy brands for creative, imaginative, and educational potential, both within schools and at home. The LEGO Group lists its brand values as imagination, creativity, fun, and learning. It has developed, in part through its connections with the LEGO Foundation, a philosophy or ethos of play for learning that is promoted and pursued in global campaigns and projects. Because of these claims, and the widespread investment in LEGO's educational potential, changes to the marketing and design of the toy in recent decades have proved controversial. This entry discusses the LEGO Group, the history of the LEGO brand, the LEGO System of Play, claims about the play that LEGO enables and its relationship to learning, and the work of the LEGO Foundation.

### The LEGO Group and LEGO History

The LEGO Group, which designs, manufactures, and distributes the distinctive bricks, is a family company, its name derived from the Danish words *leg godt* ("play well"). It was founded in 1932 by Ole Kirk Kristiansen in the Danish town of Billund. The company began with the production of wooden toys, developing plastic interlocking bricks in the 1940s. The design and technical specifications of the bricks sold today were patented in 1958.

From the simple sets of uniform blocks in the late 1950s, LEGO bricks and sets have gradually become more diverse and complex. Architectural details such as windows, and wheels and motors for the construction of vehicles, were introduced in the 1960s, along with the larger DUPLO bricks for younger children. The year 1968 saw the opening of the first LEGOLAND theme park in Billund. In the 1970s, dollhouse-style specialized pieces were introduced, as were the LEGO Technic and the space-themed sets. Both the educational robotic system, MINDSTORMS, and the first media tie-in sets (Winnie the Pooh and Star Wars) were launched in the late 1990s. In 1999, Mitch Resnick of the Massachusetts Institute of Technology was appointed the LEGO Papert Professor of Learning Research. LEGO Group's investment in learning and play research demonstrates its aims to establish its products as educational as well as entertaining.

### The LEGO System of Play

LEGO bricks' educational and creative possibilities are predicated on the LEGO System of Play—the principle that all LEGO bricks and sets should be compatible. This principle is realized through the characteristic studs on the top of LEGO bricks and the tubes underneath or inside them between which the studs click and are held, facilitating the connection of pieces from any and all LEGO sets. The LEGO system then is at once a set of technical characteristics, a marketing strategy, and an ethos or philosophy: The LEGO Group asserts that LEGO play should not be limited to the completion of any particular model or theme but should be open ended and imaginative. The universal studs and tubes allow the cross-fertilization of narrative or symbolic themes across sets. This means that not only can children construct models according to instructions accompanying any particular LEGO set, but they can also make any other model, vehicle, building, or world that they desire. Indeed, it is a common characteristic of everyday LEGO play that new sets tend to get dumped into a large box containing a jumble of other sets—sometimes inherited from older siblings or other family members—mixed up and ready for less prescriptive and more creative play. It is this "free play" that underpins LEGO's corporate ethos, its reputation as an educational toy, and its

popular reception among generations of children and parents and that elicits such strong reactions when this principle is seen to be compromised through themed, franchised, or gendered sets.

### **Creativity, Play, and Learning**

In its emphasis on free play and imagination, the LEGO Group's vision of the potential of its products for learning in everyday life foregrounds and celebrates interrelated notions of free play, creativity, imagination, and even "dreaming," albeit coupled with logic and systemic thinking that construction toys might offer. Thus, this vision asserts, LEGO facilitates "systematic creativity" and hands-on learning, combining imagination and free play with reasoning.

Claims for this synergy among imaginative play, systematic thinking, and learning have been a factor in LEGO's ethos and marketing from the 1950s onward. The emphasis on open-ended play distinguishes LEGO from both the construction toys that preceded it—from wooden blocks with architectural details to more engineering-inspired kits such as Meccano—and the toys that structured and directed their use and play more closely. LEGO sets were sold without instructions until the mid-1960s, with only the illustrated box lids to offer suggestions for the kinds of models children might construct.

David Gauntlett, who has worked with LEGO's Learning Institute and Foundation, notes that over the past decade LEGO has embraced and supported the new informal and amateur pedagogical spaces and practices afforded by the Internet's participatory media. Digital connectivity links LEGO's website and children's stop-motion animations using LEGOs shared on YouTube with support and guidance on model building and animating offered by both children and adult fans across a range of online spaces, amounting to an informal but extensive culture of learning and sharing.

The ethos of openness, imagination, and creativity has been popularly accepted, as is evident in the widespread critiques of any change to the LEGO sets and marketing over the decades. Critical and journalistic reaction to the recent expansion into transmedia licensing, films, and merchandising—from *Star Wars* to *Harry Potter*—echoes similar outcries at the introduction of instructions, specialized bricks (e.g., "home" sets and trains), and themed or narrative sets such as LEGO Space in the 1970s to *Ninjago* and *Atlantis* today. It is widely assumed that such developments put limits on children's imaginative play and learning with LEGO, with educators and journalists engaging in comment and debate on the topic.

A number of academic and journalist commentators have questioned LEGO's design of themed sets explicitly marketed for girls, notably the Friends line, introduced in 2012. As with other commercial toys marketed along gender lines, it has been argued, Friends limits the range of imaginative and play practices. LEGO sets for boys tend to be framed with action and adventure narratives, whereas girls' sets tend toward domestic or consumerist themes. Again, given LEGO's unique status in the toy market as an open-ended and creative system, and its own claims to transcend commercial entertainment, many see media and gendered themes as a betrayal of its creative and educational potential.

To date, however, there has been little empirical research on children's everyday play with LEGO, so it is far from clear whether recent design and marketing strategies have fundamentally changed the ways in which children play with, and learn from, LEGO. The few ethnographic accounts that do describe LEGO play suggest a wide range of play and

learning approaches, tastes, and aptitudes, from diligently constructing complicated models according to instructions for display at one end of the spectrum to the free-form construction of fantastical and nonsensical worlds, vehicles, and characters from a mix of old and new LEGO pieces, themes, and specialization lost in the jumble of the box into which it has all been tipped and accumulated over years or generations.

### The LEGO Foundation

A key aspect of LEGO that aims to engage with creativity and learning beyond the production and marketing of toys is the LEGO Foundation, which works with other organizations to promote learning through play. Founded by Edith and Godtfred Kirk Christiansen in 1986, it is separate from the LEGO Group, but its activities are funded by its ownership of 25% of the shares in LEGO Group, an arrangement established in 1999. Initially, the Foundation's activities were concentrated on the LEGO Learning Institute, an organization it set up in 1999 to disseminate research on children, education, creativity, and play within LEGO and beyond. The foundation states its aims as encouraging a range of cognitive and practical abilities beyond conventional school curricula, abilities it presents as crucial for children's futures. These include empathy, collaboration, critical thinking, and creative problem solving. Play, the foundation asserts, is one of the most significant ways in which young children develop these skills. In 2009, the foundation shifted its focus to initiating projects with underprivileged children around the world, initially in South Africa and later in Ukraine. It offers training and donates LEGO products, aiming to work with parents, teachers, social entrepreneurs, institutions, and governments.

The foundation states that it shares the mission of the LEGO Group to "inspire and develop the builders of tomorrow" (LEGO Foundation, n.d.-a). Its charitable and policy research resonates strongly with LEGO's commercial corporate image and the materiality of the LEGO products themselves. The foundation asserts that LEGO is unique in its capabilities to channel both artistic expression and practical problem solving. So though its vision of educational play is linked closely to the LEGO Group ethos, it has developed through research and campaigns a more guided and instrumental trajectory for children's play to lead to learning.

The LEGO Foundation's first large-scale play-based learning project was established in South Africa in 2008, working with partner organizations, training teachers and practitioners, and developing play-based tools and curricula to encourage "governments, school systems, teachers and parents to embrace and use learning through play" (LEGO Foundation, n.d.-b). Other projects include working with UNICEF and charities such as Right to Play. The foundation's research is conducted through a network of academic researchers and institutions including the Massachusetts Institute of Technology and the University of Cambridge. Along with entering into these close collaborations, the foundation aims to influence policy and research on play and creativity in learning more broadly. For example, the foundation's Cultures of Creativity report argues that children's innate imagination needs to be nurtured for adult life and industry through a system of learning for creativity.

Lori Landay's study of the LEGO Foundation notes that the foundation has built on the technical and marketing dimensions of the LEGO system of play to establish a research-based theory of play and learning, an ethos or ideology of play and connectivity for creativity, learning, and development. Moreover, foundation research chimes with LEGO Group's expansion of its products from physical toys to digital media, including video games and online virtual worlds. The LEGO Learning Institute addresses play and creativity in the age of

digital media in its 2009 report *Systematic Creativity in the Digital Realm*. The report explores the implications of digital spaces for play and learning, stating that

children today see play spaces as fluid and connected between bricks and bits, or physical and virtual environments. Children know what is real and what is not, but they perceive the boundaries as more fluid and full of connecting links. (Ackermann, Gauntlett, Wolbers, & Weckstrom, 2009, p. 4)

In a conclusion that resonates across the LEGO Foundation's outreach activities and the commercial strategies of the LEGO Group, the report asserts that these new spaces of play can augment and enrich play and everyday learning rather than distract children from them.

**See also** [Everyday Creativity](#); [Playful Learning](#); [Popular Culture](#); [Toys](#)

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