



# Your STEAM toy accreditation report

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## About the report

This STEAM accreditation report has been produced by a reviewer for Dr Gummer's Good Play Guide™, in partnership with The Toy Association™, for your information. **You may publish the report in part or in full**, but must include full credit to Dr Gummer's Good Play Guide for the content, along with the year the report was published.

## About the report

The following report looks at whether or not your toy or game meets the criteria in three (3) areas of the The Toy Association™'s Science, Technology, Engineering, Arts, and Mathematics (STEAM) toy assessment framework (Gummer & Taylor, 2020):

- Characteristics of a 'good toy'
- Prime STEAM attributes
- Specific STEM categories

### Report details

**Name of toy or game**

**Edx- My Gears® Transport Set; Machine Set: Animal Set**

**Company name**

**Edx education**

**Target age**

**6+**

**Reviewer name**

**Nikita Chan**

**Date of the review**

**06 – 07 – 2022; Addendum for Machine and Animal Sets added on 03 – 08 – 2022**



## Report overview

This section summarizes the criteria ratings for the different areas of the STEAM framework awarded to your toy or game. If your product has passed the requirements, it also details what accreditation(s) you may be able to use on packaging, websites, printed material and throughout all digital and traditional marketing platforms to add credibility to your campaigns.

### **Important note**

To get a balanced impression of the review, we strongly recommend that you read all sections of the report and discuss this with us if required.



## Report overview

**Edx – My Gears® Transport Set** has passed the requirements for all aspects of a good toy (Section III), has the criteria for all six (6 of 6) of the prime STEAM attributes (Section IV), and meets the multi-disciplinary criteria required for the specific STEM categories (Section V). Therefore, your toy or game meets the requirements to be categorized as a STEAM toy, according to The Toy Association™'s definition.

### **ADDENDUM I:**

**My Gears® Machine Set** is aimed at the same starting age as **My Gears® Transport Set**, does not remove qualified features, and provides the following additional features:

- Chains to connect the gears and enhance understanding of engineering principles

### **ADDENDUM II:**

**My Gears® Animal Set** is aimed at the same starting age as **My Gears® Transport Set**, does not remove qualified features, and provides the following additional features:

- Animal models promotes imaginative play

This means that you will receive The Toy Association™'s official STEAM Stamp of Approval and the official Good Toy Guide stamp of Approval to use on packaging, websites, printed material, and throughout all digital and traditional marketing platforms to add credibility to your campaigns. Furthermore, you can enjoy the benefits of extensive marketing and promotional campaigns delivered by Dr Gummer's Good Play Guide™.

We hope you find this report useful and informative. If you have any questions, please do not hesitate to contact us.



## Report overview

### Rating summary tables

#### Characteristics of a 'good toy'

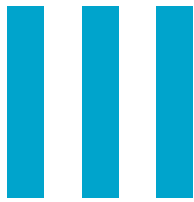
Characteristic	Rating		
	Poor	Good	Excellent
Fun & engaging	Excellent		
Easy to use	Excellent		
Skill development	Good		
Inclusive	Good		

#### Prime STEAM attributes

Attribute	Rating		
	Poor	Good	Excellent
Real world relevance	Excellent		
Active involvement	Excellent		
Arts	Good		
Logical thinking	Excellent		
Free exploration	Excellent		
Step-by-step learning	Good		

#### Specific STEM categories

Category	Rating			
	None	Minor	Moderate	High
Science	Minor			
Technology	Not at all			
Engineering	Moderate			
Mathematics	Minor			



## Characteristics of a 'good toy'

This section summarizes the feedback from independent playtesting of your toy or game. This includes:

- Fun & engagement
- Ease of use
- Skill development
- Inclusivity

### Section overview

#### **PASS**

Edx- My Gears® Transport Set has been rated 'Good' or 'Excellent' for all four characteristics of a 'good toy. This means that the toy is fun to play with, is accessible to most children, and has good play value. Children are likely to choose to play with the toy and be able to use it as intended, so they can benefit from the educational value of the toy.





## Characteristics of a 'good toy'

### About the characteristics of a 'good toy' review

The purpose of this section was to understand whether the toy or game is fun to play with, is accessible to most children, and has good play value. For children to benefit from the educational value of the toy or game, it needs to be something they will choose to play with and be able to use as intended.

The toy or game was tested with a number of children on multiple occasions by trained Dr Gummer's Good Play Guide™ observers. This helps to provide reliable, honest feedback. Children were of approximately the target age described in Section I. To encourage natural behavior, testing was carried out in familiar play settings, such as an after-, club.

Toys or games must be rated 'Good' or 'Excellent' for all four (4) characteristics of 'good toys' to pass this section.

<b>Characteristics of a 'good toy' rating scale:</b>	<b>Poor</b>	<b>Good</b>	<b>Excellent</b>
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## Characteristics of a 'good toy'

### Fun & engagement

The fun and engagement rating refers to the extent that children enjoy playing with the toy or game, the frequency, and the length of play.

<p>An excellent rating for fun and engagement means that many children of the target age enjoyed playing with the toy or game, some for prolonged periods of time. Some children remained keen to play regularly and it may have been very engaging for specific groups of children.</p> <p>This rating was given for the following reasons: Children were observed to open the box immediately and to play with the transport set for a long time even after finished building the eight models in the handbook. In addition to that, children enjoyed the flexibility of the transport set, it allows them to use their imagination and creativity to build models. For example, children would immediately start using the pieces to build things without following the instructions. Yet, it might be worth adding more pieces to the set, as it would make the toy more enabling for children to build different structures and further engage with it. The children that gravitated to the transport set the most were 7-to-8-year-olds.</p> <p><i>"I think this piece goes here."</i> stated a 6-year-old girl while building her tower.</p> <p><i>"It's a wheel cycle thing. These are like unicorns. This one goes here."</i> stated a 7-year-old girl while building her model.</p>	<b>Excellent</b>
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### Ease of use

The ease of use rating refers to the extent that most children in the target age group can use the toy or game as intended.

<p>An excellent rating for ease of use means that children of the target age were able to use the toy or game to its full capacity with minimal third-party help.</p> <p>This rating was given for the following reasons: Overall, children were able to enjoy the maximised benefits generally as they found the transport set easy to use and the instructions relatively easy to follow. Children aged 6 or under might require more assistance from adults to guide them when they use the toy for the first time; however, children aged a bit older – 7 or 8 had no problem</p>	<b>Excellent</b>
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## Characteristics of a 'good toy'

building their models without any adult's assistance. Additionally, children also found the pieces very sturdy and easy to connect. "It wasn't too hard but it takes time to make it." stated a 5-year-old boy while interacting with the toy.

### Skill development

The skill development rating refers to the extent that the toy or game helps children develop age-appropriate soft and hard skills.

A good rating for skill development means that the toy or game has substantial benefit to a child's development in at least one age-appropriate skill area for children of the target age.

This rating was given for the following reasons:  
For children aged 6 to 8, playing with the transport set serves to support gains in reading and following instructions, as well as sophisticated play.

Good

### Inclusivity

The inclusivity rating refers to the extent that the toy or game is designed for and marketed to children of different genders, backgrounds, and abilities.

A good rating for inclusivity means that the toy or game appears to be designed to be a gender-neutral product without any obvious barriers to children who are likely to play with it. Product packaging and marketing does not have a negative representation of minority groups or overly stereotyped behavior.

This rating was given for the following reasons:  
No gender bias was observed. No overly stereotypical behavior is propagated by the packaging nor the actual toy.

Good

# IV

## Prime STEAM attributes

This section summarizes the feedback from independent expert review of your toy or game. This includes:

- Real world relevance
- Active involvement
- Arts
- Logical thinking
- Free exploration
- Step-by-step learning

### Section overview

#### **PASS**

Your toy has been rated 'Good' or 'Excellent' for all six (6) of the prime STEAM attributes. This means that it encourages the hands-on, logical, and creative experience that should be at the core of a STEAM toy, at an age-appropriate level.

# IV

## Prime STEAM attributes

### About the prime STEAM attributes review

The purpose of this section of the report was to understand whether the toy or game affords all of the attributes that should underlie a STEAM toy. This means that the toy or game encourages children to be active participants in their learning, promotes left and right-brain thinking, and has clear links to the real world to help children understand the purpose of what they are learning. It also encourages children out of their comfort zone to allow the gradual progression of knowledge and skills.

The product was assessed with a combination of expert review and the product testing described in Section III.

Toys or games must be rated 'Good' or 'Excellent' for all six (6) prime STEAM attributes to pass this section.

<b>Prime STEAM attributes rating scale:</b>	<b>Poor</b>	<b>Good</b>	<b>Excellent</b>
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### Real-world relevance

The real-world relevance rating refers to the extent that the toy or game relates to and/or represents real-world applications.

An excellent rating for real-world relevance means that the toy or game has clear relevance and application to the real world. The toy or game allows hands-on observation and use.

This rating was given for the following reasons:  
Building the My Gears® Transport Set mimics building car models and prototypes for larger scale projects (like science and engineers use). Interacting with the gears and joints, for example, supports hands-on learning of the mechanics behind this type of dynamic structure.

Excellent

### Active involvement

The active involvement rating refers to the extent that the toy or game allows physical, hands-on involvement.

An excellent rating for active involvement means that children of the target age can be actively and independently involved in the learning experience. They can look at and physically manipulate materials to further their understanding and/or solve problems.

This rating was given for the following reasons:  
Children were observed to be highly engaged and involved with the building process. Children generally had no particular issues while building the models with the pieces and were able to be actively involved in the learning process. The Transport Set encourages active and independent participation as children 7 – 8 could use the manual to build the models without issues while the younger ones 5 – 6 were also able to have a hands-on and voluntary engagement with the toy with their own imagination.

*“it wasn't too hard but it takes time to make it”* – commented by a 5-year-old boy while building his model.

Excellent

### Arts

The arts rating refers to the extent that the toy or game encourages children to use both the left (logical) and right (creative) sides of their brain. For example, expressing themselves through the arts such as design, drama (including pretend play), dance, music, history, or language.

A good rating for arts means that the toy or game gives children some opportunities to tap into their creative and imaginative skills to support divergent thinking. Children have some chances to use both the left (logical) and right (creative) sides of their brain, but this is limited.

This rating was given for the following reasons:

This Transport Set generally encourages imagination and creativity amongst children to build their own models. However, it is worth noting that the artistic and imagination aspect would be further maximised by adding more pieces and other objects that have relevance to the set (e.g. characters to drive the car or interact with the other models). This will increase the flexibility and freedom for children to play around with the toy and ideally, play repeatedly and continuously.

*"It would be better if there were people or objects you can connect it too."* – 6-year-old girl commented while building her model.

*"Maybe some quick easy models to build as some are quite long. Not enough pieces."* – Parent who was observing the play session.

Good

### Logical thinking

The logical thinking rating refers to the extent that the toy or game requires logic, such as trial and error or problem-solving.

An excellent rating for logical thinking means that the toy or game allows children to identify and apply solutions to problems independently. The toy or game promotes learning through trial and error and/or investigative learning and encourages children to explore logic principles.

This rating was given for the following reasons:

Building with this Transport Set provided opportunities for trial and error learning. It supports following instructions, making comparisons and analysis, which are foundational for developing logical thinking.

*"Child didn't look at the instructions and just started to build, she used trial and error adding and connecting pieces together..."* – commended by a caregiver while observing the child play.

Excellent

### Free exploration

The free exploration rating refers to the extent that children can explore the toy or game on more than one occasion, thereby reinforcing their learning and promoting curiosity.

An excellent rating for free exploration means that the toy or game gives children the freedom to repeatedly explore their own ideas.

This rating was given for the following reasons:

Repeat use is encouraged and it can spur innovation to move beyond the use of the first set of instructions. This can be an open ended product with multiple alternative designs/models. Compatibility with other kits in their line can support building models on a grander or smaller scale. The kit also allows children to play with it in more than one setting by having it well-made and easy to transport.

*“Played for a long time, even after building the results.”* – commented by a caregiver of the child during the play session.

**Excellent**

### Step-by-step learning

The step-by-step learning rating refers to the extent that the toy or game gradually builds confidence through guidance, parent support, and/or increasing levels of challenge.

A good rating for step-by-step learning means that the toy or game allows children to continually extend and apply their knowledge, reinforcing learning within their comfort zone. Activities included with the toy or game offer different levels of challenge appropriate for children of the target age, gradually increasing in difficulty, to help children grow their confidence.

This rating was given for the following reasons:

Building with this set can encourage using past experiences to alter future tactics. The children's active and repeated participation hones physical, cognitive, and creative skills directly associated with using this set. Additional guidance for adults and activities can be included in the set to further support the child's learning to extend their knowledge past their comfort zone.

**Good**





## Specific STEM categories

This section summarizes the feedback from independent expert review of your toy or game. This includes:

- Science
- Technology
- Engineering
- Mathematics

### Section overview

#### **PASS**

Your toy has been rated 'Minor', 'Moderate', or 'High' for two (2) or more of the specific STEM categories. This means that it provides age-appropriate learning opportunities across multiple disciplines, as required by the STEAM approach.

### About the specific STEM category review

This section of the evaluation identifies the learning goals the toy or game has the potential to support. To be a STEAM toy, a toy or game must help children's learning within two or more of the STEAM subjects. This means that it supports the multidisciplinary approach that is core to STEAM.

To assess this, the toy or game was reviewed against learning goals adapted from a collection of US learning standards. The target age in Section I was used to identify the age-appropriate criteria. This assumes that children outside of the target age group will not be able to play with the toy or game due to usability, will not enjoy it because it is too easy or challenging for them, or it will not find it appealing due to their current interests.

Toys or games must be rated 'Minor', 'Moderate', or 'High' for at least two STEM categories to pass this section.

<b>Specific STEM categories rating scale:</b>	<b>None</b>	<b>Minor</b>	<b>Moderate</b>	<b>High</b>
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## Specific STEM categories

### Science

Depending on the target age of the toy or game, the Science learning goals may include learning to use scientific practices to carry out investigations as well as the study of biology (e.g. organisms, ecosystems, evolution, heredity, genetics), chemistry (e.g. matter), physics (e.g. forces, energy, waves), astronomy, and/or Earth science (e.g. Earth's systems). It does not include social sciences.

When the toy or game is used as intended with children of the target age, it has minor potential to support children's learning within the Science category. The learning goals that may be supported include:

#### **Matter**

- **7 – 9 years \*this product has a starting age of 6-years-old**
  - Understanding how an object made of a small set of pieces can be disassembled and made into a new object, this gear set fulfilled this purpose by allowing children to build and dismantle their models using small compartments and rebuild them into something different.

**Minor**

### Technology

Depending on the target age of the toy or game, the Technology learning goals may include developing digital literacy skills including using digital tools to create and innovate, gather information, and collaborate with others on a global scale; and/or using computational thinking, such as coding and programming, and/or digital citizenship (the responsible use of technology).

When the toy or game is used as intended, with children of the target age, it does not have potential to support any of the current Technology learning goals in the STEAM framework.

**None**

### Engineering

Depending on the target age of the toy or game, the Engineering learning goals may include understanding how things work and applying this knowledge to design solutions to problems with set criteria and constraints; learning to design, construct, test, compare, and critically evaluate solutions; and/or designing solutions to science-based problems (such as preventing erosion).

When the toy or game is used as intended, with children of the target age, it has moderate potential to support children's learning within the

**Moderate**

## Specific STEM categories

Engineering category. The learning goals that may be supported include:

### **General Engineering**

- **7 – 9 years \*this product has a starting age of 6-years-old**
  - Comparing the strengths and weaknesses of two objects designed to solve the same problem, i.e. to compare different pieces for building certain models.
  - 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, for children can use and thus compare different models that they build.

## Mathematics

Depending on the target age of the toy or game, the Mathematics learning goals may include learning numbers and operations including number order, addition, subtraction, multiplying, dividing, and fractions; and/or learning the properties of shapes, how to use measurements (e.g. time, length, and volume), data analysis, and/or algebra.

When the toy or game is used as intended, with children of the target age, it has minor potential to support children's learning within the Mathematics category. The learning goals that may be supported include:

### **Shapes and Measurements**

- **AGE 7 – 9 years \*this product has a starting age of 6-years-old**
  - Describing and comparing 2D shapes by sides and angles
  - Building and drawing 2D and 3D shapes

Minor

## References

GUMMER, A., & TAYLOR, A. (2021). Science, Technology, Engineering, Arts, & Mathematics Toy Assessment Framework. The Toy Association™. Retrieved from "[https://www.toyassociation.org/App\\_Themes/toyassociation\\_resp/downloads/research/reports/steam-ta-framework.pdf](https://www.toyassociation.org/App_Themes/toyassociation_resp/downloads/research/reports/steam-ta-framework.pdf)"

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