



Standards Alignment

Block #1: Introduction to Robotics and Computer Science



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Learning Standards by Robo Wunderkind Lesson



Lesson	Standards
1. Meet Robo!	CCSS: K-2 – W.2.6, SL.2.4, MP.2 ISTE: 1 Empowered Learner, 4 Innovative Designer, 5 Computational Thinker, 6 Creative Communicator, 7 Global Collaborator CSTA: K-2 – 1A-CS-01, 1A-CS-02, 1A-CS-03 NGSS: K-2 – K-2-ETS1-1
2. Program Your First Robo!	CCSS: K-2 – W.1.2, W.1.7, W.2.6, SL.2.4, MP.5 ISTE: 1 Empowered Learner, 4 Innovative Designer, 5 Computational Thinker, 6 Creative Communicator, 7 Global Collaborator CSTA: K-2 – 1A-CS-02, 1A-CS-03, 1A-AP-09, 1A-AP10, 1A-AP-11, 1A-AP-12, 1A-AP-13, 1A-AP-14, 1A-AP-15 NGSS: K-2 – 1-PS4-1, K-2-ETS1-1
3. Robo Lights Up the Classroom	CCSS: K-2 – W.1.2, W.1.7, W.2.6, SL.K.3, SL.2.4, MP.2 ,MP.5 ISTE: 1 Empowered Learner, 2 Digital Citizen, 3 Knowledge Constructor, 4 Innovative Designer, 5 Computational Thinker, 6 Creative Communicator, 7 Global Collaborator CSTA: K-2 – 1A-CS-01, 1A-CS-02, 1A-CS-03, 1A-CS-05, 1A-CS-08, 1A-AP-09, 1A-AP10, 1A-AP-11, 1A-AP-12, 1A-AP-13, 1A-AP-14, 1A-AP-15 NGSS: K-2 – 1-PS4-2, 1-PS4-4, K-2-ETS1-1
4. Robo-car Drives Around	CCSS: K-2 – SL.K.3, RI.2.1, W.1.2, W.1.7, W.1.8, W.2.8, SL.1.1, MP.2 ,MP.5 ISTE: 1 Empowered Learner, 2 Digital Citizen, 3 Knowledge Constructor, 4 Innovative Designer, 5 Computational Thinker, 6 Creative Communicator, 7 Global Collaborator CSTA: K-2 – 1A-CS-01, 1A-CS-02, 1A-CS-03, 1A-CS-05, 1A-CS-08, 1A-AP-09, 1A-AP10, 1A-AP-11, 1A-AP-12, 1A-AP-13, 1A-AP-14, 1A-AP-15 NGSS: K-2 – 1-PS4-4, K-2-ETS1-1

Lesson	Standards
<p>5. Robo's First Journey</p>	<p>CCSS: K-2 – SL.K.3, W.2.8, MP.2, MP.5 ISTE: 1 Empowered Learner, 2 Digital Citizen, 3 Knowledge Constructor, 4 Innovative Designer, 5 Computational Thinker, 6 Creative Communicator, 7 Global Collaborator CSTA: K-2 – 1A-CS-01, 1A-CS-02, 1A-CS-03, 1A-CS-05, 1A-CS-08, 1A-AP-09, 1A-AP10, 1A-AP-11, 1A-AP-12, 1A-AP-13, 1A-AP-14, 1A-AP-15 NGSS: K-2 – 1-PS4-4, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3</p>
<p>6. Robo Travels to Toytown</p>	<p>CCSS: K-2 – SL.K.3, W.2.6, W.2.8, MP.2, MP.5 ISTE: 1 Empowered Learner, 2 Digital Citizen, 3 Knowledge Constructor, 4 Innovative Designer, 5 Computational Thinker, 6 Creative Communicator, 7 Global Collaborator CSTA: K-2 – 1A-CS-01, 1A-CS-02, 1A-CS-03, 1A-CS-05, 1A-CS-08, 1A-AP-09, 1A-AP10, 1A-AP-11, 1A-AP-12, 1A-AP-13, 1A-AP-14, 1A-AP-15 NGSS: K-2 – 1-PS4-4, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3</p>
<p>7. Robo Looks Around</p>	<p>CCSS: K-2 – SL.K.3 SL.K.3, SL.1.1, W.2.6, W.2.8, MP.2, MP.5 ISTE: 1 Empowered Learner, 2 Digital Citizen, 3 Knowledge Constructor, 4 Innovative Designer, 5 Computational Thinker, 6 Creative Communicator, 7 Global Collaborator CSTA: K-2 – 1A-CS-01, 1A-CS-02, 1A-CS-03, 1A-CS-05, 1A-CS-08, 1A-AP-09, 1A-AP10, 1A-AP-11, 1A-AP-12, 1A-AP-13, 1A-AP-14, 1A-AP-15 NGSS: K-2 – 1-PS4-4, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3</p>
<p>8. Robo Meets Friends</p>	<p>CCSS: K-2 – SL.K.3, SL.1.1, W.K.7, W.2.6, W.2.8, MP.2, MP.5 ISTE: 1 Empowered Learner, 2 Digital Citizen, 3 Knowledge Constructor, 4 Innovative Designer, 5 Computational Thinker, 6 Creative Communicator, 7 Global Collaborator CSTA: K-2 – 1A-CS-01, 1A-CS-02, 1A-CS-03, 1A-CS-05, 1A-CS-08, 1A-AP-09, 1A-AP10, 1A-AP-11, 1A-AP-12, 1A-AP-13, 1A-AP-14, 1A-AP-15 NGSS: K-2 – K-2-PS2, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3</p>

Lesson	Standards
<p>9. Robo Makes a Surprise</p>	<p>CCSS: K-2 SL.K.3, SL.1.1, W.K.2, W.K.7, W.1.2, W.2.2, W.2.6, W.2.8, MP.2, MP.5</p> <p>ISTE: 1 Empowered Learner, 2 Digital Citizen, 3 Knowledge Constructor, 4 Innovative Designer, 5 Computational Thinker, 6 Creative Communicator, 7 Global Collaborator</p> <p>CSTA: K-2 – 1A-CS-01, 1A-CS-02, 1A-CS-03, 1A-CS-05, 1A-CS-08, 1A-AP-09, 1A-AP10, 1A-AP-11, 1A-AP-12, 1A-AP-13, 1A-AP-14, 1A-AP-15</p> <p>NGSS: K-2 – K-2-PS2, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3</p>
<p>10. What Does Your Robo Do?</p>	<p>CCSS: K-2 – SL.K.3, SL.1.1, W.K.2, W.K.7, W.1.2, W.2.2, W.2.6, W.2.8, MP.2, MP.5</p> <p>ISTE: 1 Empowered Learner, 2 Digital Citizen, 3 Knowledge Constructor, 4 Innovative Designer, 5 Computational Thinker, 6 Creative Communicator, 7 Global Collaborator</p> <p>CSTA: K-2 – 1A-CS-01, 1A-CS-02, 1A-CS-03, 1A-CS-05, 1A-CS-08, 1A-AP-09, 1A-AP10, 1A-AP-11, 1A-AP-12, 1A-AP-13, 1A-AP-14, 1A-AP-15</p> <p>NGSS: K-2 – K-PS2-2, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3</p>

Comprehensive List of Standards Addressed in Robo Wunderkind Lessons

CCSS – Common Core State Standards

CCSS English Language Arts –

The Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects (“the Standards”) are the culmination of an extended, broad-based effort to fulfill the charge issued by the states to create the next generation of K–12 standards in order to help ensure that all students are college and career ready in literacy no later than the end of high school.

Writing Standards: (W)

- W.K.2** – Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
- W.K.7** – Participate in shared research and writing 7. projects (e.g., explore a number of books by a favorite author and express opinions about them).
- W.1.2** – Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.
- W.1.7** – Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions).
- W.1.8** – With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- W.2.6** – With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
- W.2.8** – Recall information from experiences or gather information from provided sources to answer a question.

Reading Standards: (RI – Reading Informational Text)

- RI.2.1** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
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Speaking and Listening Standards: (SL)

- SL.K.3** – Ask and answer questions in order to seek help, get information, or clarify something that is not understood.
- SL.1.1** – Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.

- a. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
- b. Build on others' talk in conversations by responding to the comments of others through multiple exchanges.
- c. Ask questions to clear up any confusion about the topics and texts under discussion.

SL.2.4 – Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.

CCSS Mathematical Standards

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.

MP. 2 – Reason abstractly and quantitatively.

MP. 5 – Use appropriate tools strategically.

ISTE – International Society of Technology Education

Today's students must be prepared to thrive in a constantly evolving technological landscape. The ISTE Standards for Students are designed to empower student voice and ensure that learning is a student –driven process of exploration, creativity and discovery no matter where they or their teachers are in the thoughtful integration of ed tech.

- 1 Empowered Learner** – Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
- 2 Digital Citizen** – Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.
- 3 Knowledge Constructor** – Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
- 4 Innovative Designer** – Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

- 5 Computational Thinker** – Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.
 - 6 Creative Communicator** – Students communicate clearly and express themselves creatively for a variety of purposes using platforms, tools, styles, formats and digital media appropriate for their goals.
 - 7 Global Collaborator** – Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.
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CSTA – K-12 Computer Science Teachers Association

Today's students must be prepared to thrive in a constantly evolving technological landscape. The ISTE Standards for Students are designed to empower student voice and ensure that learning is a student-driven process.

Computing Systems

- 1A-CS-01** – Select and operate appropriate software to perform a variety of tasks, and recognize that users have different needs and preferences for the technology they use.
- 1A-CS-02** – Use appropriate terminology in identifying and describing the function of common physical components of computing systems (hardware).
- 1A-CS-03** – Describe basic hardware and software problems using accurate terminology
- 1A-CS-05** – Store, copy, search, retrieve, modify, and delete information using a computing device and define the information stored as data.
- 1A-CS-08** – Model daily processes by creating and following algorithms (sets of step-by-step instructions) to complete tasks.

Algorithms & Programming

- 1A-AP-09** – Model the way programs store and manipulate data by using numbers or other symbols to represent information.
- 1A-AP-10** – Develop programs with sequences and simple loops, to express ideas or address a problem.
- 1A-AP-11** – Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.
- 1A-AP-12** – Develop plans that describe a program's sequence of events, goals, and expected outcomes.
- 1A-AP-13** – Give attribution when using the ideas and creations of others while developing programs.
- 1A-AP-14** – Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.
- 1A-AP-15** – Using correct terminology, describe steps taken and choices made during the iterative process of program development.

NGSS – Next Generation Science Standards

Students in kindergarten through fifth grade begin to develop an understanding of the four disciplinary core ideas: physical sciences; life sciences; earth and space sciences; and engineering, technology, and applications of science. In the earlier grades, students begin by recognizing patterns and formulating answers to questions about the world around them.

K-PS2 Motion and Stability: Forces and interactions

- K-PS2-2** Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.
- 1-PS4** Waves and their Applications in Technologies for Information Transfer
- 1-PS4-1** Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
- 1-PS4-2** Make observations to construct an evidence-based account that objects can be seen only when illuminated.
- 1-PS4-4** Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.

K-2.Engineering Design

- K-2-ETS1-1** Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
- K-2-ETS1-2** Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
- K-2-ETS1-3** Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.