Orbie's Space Walk

How teachers can use it:

Because Orbie's Space Walk is a browser-based game, teachers have the option to use it in the classroom or at home. It can be played on any internet enabled device. Students will receive a certificate for completing a category which teachers may use as evidence of student mastery of the programming basics and content knowledge. Orbie's Space Walk is intended for content practice and review, not as an introduction or instruction on new content.

The Tennessee state standards covered in each question category are listed below. The Numbers category uses Tennessee Math standards, the Life Science, Earth Science, and Engineering categories use the 2018 Tennessee Science standards, and the Computer Science category uses the International Society for Technology in Education (ISTE) standards.

NUMBERS	
Kindergarten	
K.OA.A.3	Decompose numbers less than or equal to 10 into addend pairs in more than one way (e.g., 5 = 2 + 3 and 5 = 4 + 1) by using objects or drawings. Record each decomposition using a drawing or writing an equation.
K.OA.A.4	Find the number that makes 10, when added to any given number, from 1 to 9 using objects or drawings. Record the answer using a drawing or writing an equation.
1st Grade	
1.OA.A.1	Add and subtract within 20 to solve contextual problems, with unknowns in all positions, involving situations of *add to*, *take from*, *put together/take apart*, and *compare*. Use objects, drawings, and equations with a symbol for the unknown number to represent the problem. (See Table 1 - Addition and Subtraction Situations)
1.OA.A.2	Add three whole numbers whose sum is within 20 to solve contextual problems using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
1.OA.B.3	Apply properties of operations (additive identity, commutative, and associative) as strategies to add and subtract. (Students need not use formal terms for these properties.)
1.OA.B.4	Understand subtraction as an unknown-addend problem. *For example, to solve 10 – 8 = ___, a student can use 8 + ___ = 10.*
1.OA.C.5	Add and subtract within 20 using strategies such as counting on, counting back, making 10, using fact families and related known facts, and composing/ decomposing numbers with an emphasis on making ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9 or adding 6 + 7 by creating the known equivalent 6 + 4 + 3 = 10 + 3 = 13).
1.OA.D.7	Understand the meaning of the equal sign (e.g., 6 = 6; 5 + 2 = 4 + 3; 7 = 8 - 1). Determine if equations involving addition and subtraction are true or false.
1.OA.D.8	Determine the unknown whole number in an addition or subtraction equation, with the unknown in any position (e.g., 8 + ? = 11, 5 = ? - 3, 6 + 6 = ?).
2nd Grade	
2.OA.A.1	Add and subtract within 100 to solve one- and two-step contextual problems, with unknowns in all positions, involving situations of *add to*, *take from*, *put together/take apart*, and *compare*. Use objects, drawings, and equations with a symbol for the unknown number to represent the problem.
2.OA.B.2	Fluently add and subtract within 30 using mental strategies. By the end of 2nd grade, know from memory all sums of two one-digit numbers and related subtraction facts.

LIFE SCIENCE	
Kindergarten	
K.LS3.1	Make observations to describe that young plants and animals resemble their parents.
1st Grade	
1.LS1.1	Recognize the structure of plants (roots, stems, leaves, flowers, fruits) and describe the function of the parts (taking in water and air, producing food, making new plants).
1.LS1.2	Illustrate and summarize the life cycle of plants.
1.LS1.3	Analyze and interpret data from observations to describe how changes in the environment cause plants to respond in different ways.
2nd Grade	
2.LS1.1	Use evidence and observations to explain that many animals use their body parts and senses in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air.
2.LS1.2	Obtain and communicate information to classify animals (vertebrates-mammals, birds, amphibians, reptiles, fish, invertebrates-insects) based on their physical characteristics.
2.LS1.3	Use simple graphical representations to show that species have unique and diverse life cycles
2.LS2.1	Develop and use models to compare how animals depend on their surroundings and other living things to meet their needs in the places they live.
2.LS2.2	Predict what happens to animals when the environment changes (temperature, cutting down trees, wildfires, pollution, salinity, drought, land preservation).
2.LS3.1	Use evidence to explain that living things have physical traits inherited from parents and that variations of these traits exist in groups of similar organisms.

EARTH SCIENCE	
Kindergarten	
K.ESS2.1	Analyze and interpret weather data (precipitation, wind, temperature, cloud cover) to describe weather patterns that occur over time (hourly, daily) using simple graphs, pictorial weather symbols, and tools (thermometer, rain gauge).
K.ESS2.2	Develop and use models to predict weather and identify patterns in spring, summer, autumn, and winter.
K.ESS3.1	Use a model to represent the relationship between the basic needs (shelter, food, water) of different plants and animals (including humans) and the places they live.
K.ESS3.2	Explain the purpose of weather forecasting to prepare for, and respond to, severe weather in Tennessee.
1st Grade	
1.ESS1.1	Use observations or models of the sun, moon, and stars to describe patterns that can be predicted.
1.ESS1.2	Observe natural objects in the sky that can be seen from Earth with the naked eye and recognize that a telescope, used as a tool, can provide greater detail of objects in the sky.
1.ESS1.3	Analyze data to predict patterns between sunrise and sunset, and the change of seasons.
2nd Grade	
2.ESS1.1	Recognize that some of Earth's natural processes are cyclical, while others have a beginning and an end. Some events happen quickly, while others occur slowly over time.
2.ESS2.1	Compare the effectiveness of multiple solutions designed to slow or prevent wind or water from changing the shape of the land.
2.ESS2.2	Observe and analyze how blowing wind and flowing water can move Earth materials (soil, rocks) from one place to another, changing the shape of a landform and affecting the habitats of living things.
2.ESS2.3	Compare simple maps of different land areas to observe the shapes and kinds of land (rock, soil, sand) and water (river, stream, lake, pond).
2.ESS2.4	Use information obtained from reliable sources to explain that water is found in the ocean, rivers, streams, lakes, and ponds, and may be solid or liquid.

COMPUTER SCIENCE	
Kindergarten	
ISTE 1D	Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.
ISTE 2A	Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.
ISTE 2B	Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
ISTE 2D	Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.
ISTE 5D	Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.
ISTE 6A	Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
1st Grade	
ISTE 1D	Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.
ISTE 2A	Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.
ISTE 2B	Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
ISTE 2D	Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.
ISTE 5D	Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.
ISTE 6A	Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
2nd Grade	
ISTE1.D	Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.
ISTE 2A	Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.
ISTE 2B	Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
ISTE 2D	Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.
ISTE 5D	Students understand how automation works and use algorithmic thinking to

	develop a sequence of steps to create and test automated solutions.
ISTE 6A	Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

ENGINEERING	
Kindergarten	
K.ETS1.1	Ask and answer questions about the scientific world and gather information using the senses.
K.ETS2.1	Use appropriate tools (magnifying glass, rain gauge, basic balance scale) to make observations and answer testable scientific questions.
1st Grade	
1.ETS1.1	Solve scientific problems by asking testable questions, making short-term and long-term observations, and gathering information.
1.ETS2.1	Use appropriate tools (magnifying glass, basic balance scale) to make observations and answer testable scientific questions.
2nd Grade	
2.ETS1.1	Define a simple problem that can be solved through the development of a new or improved object or tool by asking questions, making observations, and gather accurate information about a situation people want to change.
2.ETS1.2	Develop a simple sketch, drawing, or physical model that communicates solutions to others.
2.ETS1.4	Compare and contrast solutions to a design problem by using evidence to point out strengths and weaknesses of the design.
2.ETS2.1	Use appropriate tools to make observations, record data, and refine design ideas.