

## Alignment of Alien Rescue with the Common Core

Alien Rescue was designed to meet the learning goals set out in the Common Core – English Language Arts & Literacy in Science and Technical Subjects, Grade 6-8. The following is a sample chart that identifies the features of Alien Rescue that address these standards.

Reference: <http://www.corestandards.org/ELA-Literacy/RST/6-8/>

<b>Science &amp; Tech. Subjects, Grade 6-8</b>	<b>Alien Rescue</b>
(RST.6-8.1) Cite specific textual evidence to support analysis of science and technical texts.	<p>Students read about spectra and learn matters comprise of compounds and how they can detect/know their compounds.</p> <p>Students read about the Sun, Earth, and Moon in the solar system database and illustrate where each object locates in our solar system and their revolution and rotation. Based on their model, they discuss how seasons and the length of the day are caused by the tilt and rotation of the Earth as it orbits the Sun.</p>
(RST.6-8.2) Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.	<p>Students learn about the atmospheres of other worlds in our solar system and compare it to their prior knowledge of Earth’s atmosphere.</p>
(RST.6-8.3) Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.	<p>Students plan and implement investigations throughout their work in Alien Rescue. They ask questions about the worlds in our solar system based on what the different species need, gather information from existing databases to develop hypotheses about the suitability of a world for a particular species, and select the scientific instruments necessary to gather the information they need to test their hypotheses.</p> <p>Students identify the biological characteristics and the habitats of alien species and compare how aliens adapt to certain environments. They investigate what kinds of internal and external stimuli each alien responds to.</p> <p>As students discuss their hypotheses, investigation plans, and findings with their classmates, they engage in critique of both</p>

	<p>their own and others' ideas. They support their opinions with scientific evidence gained through their investigations.</p> <p>Students collect information about the solar system using virtual tools, including a thermometer, barometer, magnetometer, mass spectrometer, spectrograph, seismograph, RADAR, and infrared, narrow angle, and wide angle cameras. Students record information in an online notebook.</p>
<p>(RST.6-8.4) Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 6-8 texts and topics</i>.</p>	<p>Students read about spectra and learn matters comprise of compounds and how they can detect/know their compounds.</p> <p>Students learn about the components of solar system: the Sun, the planets, the moons orbiting the planets, and asteroids and analyze the characteristics. They seek criteria to classify the planets, including physical characteristics and the distance from the Sun.</p>
<p>(RST.6-8.5) Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.</p>	<p>Galileo's contribution to the study of our solar system is discussed in several sections of the solar system database. Teachers are also encouraged to weave this information into class discussions.</p> <p>As students design probes, they learn about probe types, communication devices, power sources, and instruments that are used in the exploration of our solar system. They use the mission database to learn about the equipment used in space travel in the past.</p> <p>Students learn that the sun's energy travels to Earth, which is called 'radiation.' They recognize radiation as one of the three ways of heat transfer by electromagnetic waves, which includes visible light, infrared, and ultraviolet radiation. Discussion includes 'what other ways thermal energy can transfer?'</p>
<p>(RST.6-8.6) Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a</p>	<p>Students read about and discuss the forces that shape Io, a moon of Jupiter. They learn how Jupiter's gravitational pull causes</p>

<p>text.</p>	<p>volcanic activity on Io, and contrast Io with Earth.</p> <p>Students study the alien species to determine their needs. The teacher is encouraged to help students compare these species to ones on Earth to account for their structures. Discussion often includes an examination of how each species adapted to its environment and how these adaptations in turn affected their development of technology.</p> <p>Students learn about the body and the functions of the alien species. They discuss what functions are different from the human being for each species and which planets are appropriate to enable these species to function. By comparing aliens to the human being, they identify the functions of the systems of the human organism.</p>
<p>(RST.6-8.7) Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).</p>	<p>Students read about the history of space flight in the missions database, and use this information as a model in their design of probes.</p> <p>Students collect information about the solar system using virtual tools, including a thermometer, barometer, magnetometer, mass spectrometer, spectrograph, seismograph, RADAR, and infrared, narrow angle, and wide angle cameras. Students record information in an online notebook. Data returned from the instruments is presented in a variety of formats, including, percents, averages, and ranges.</p>
<p>(RST.6-8.8) Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.</p>	<p>Students learn about the characteristics of each planet in the solar system and investigate the potential and the requirements to support life.</p>
<p>(RST.6-8.9) Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</p>	<p>Students collect information about the solar system using virtual tools, including a thermometer, barometer, magnetometer, mass spectrometer, spectrograph, seismograph, RADAR, and infrared, narrow angle, and wide angle cameras. Students</p>

	<p>record information in an online notebook. (This can later be compared to text-based information- author comment, not part of original text)</p> <p>As students design probes, they learn about probe types, communication devices, power sources, and instruments that are used in the exploration of our solar system. They use the mission database to learn about the equipment used in space travel in the past.</p>
<p>(RST.6-8.10) By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.</p>	<p>Students learn about the characteristics of each planet in the solar system and investigate the potential and the requirements to support life.</p> <p>Students read about the Sun, Earth, and Moon in the solar system database and illustrate where each object locates in our solar system and their revolution and rotation. Based on their model, they discuss how seasons and the length of the day are caused by the tilt and rotation of the Earth as it orbits the Sun.</p> <p>Students read about radio waves and electromagnetic spectrum and get to know that spectra are divided by wavelengths. They learn how they notice radio waves in the real world.</p> <p>Students read about 'Craters,' impacts by meteors, in the concept database. They recognize natural events such as wind, water, and volcanoes destroy or cover craters. They discuss how weathering, erosion, or internal forces can impact the shape of craters.</p> <p>Students identify the characteristics of a world that define it, including atmospheric and surface features, chemical composition, temperature, magnetic field, and seismic activity.</p>

<b>CCSS Topic - Math</b>	<b>CCSS Reference</b>	<b>Defined</b>	<b>Alien Rescue</b>
The Number System	6.NS.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge)	Planet temperature ranges
	6.NS.7	Understand ordering and absolute value of rational numbers	Planet temperatures Gravity comparisons
	6.NS.7b	Write, interpret, and explain statements of order for rational numbers in real-world contexts.	Use comparative statements of planetary temperatures and gravity in alien placement justification
Expressions and Equations	6.EE.2c	Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems.	Use temperature conversion formulas (Kelvin to Celsius, etc...) Specific temperature values are given and must be converted
	6.EE.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set	Use temperature conversion formulas (Kelvin to Celsius, etc...) Use variables and write expressions to convert temperature units
	6.EE.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real world or mathematical problem.	Use ">" and "<" symbols to describe numeric values within the game Use these symbols when writing in the notebook and justifying alien placements