Rendezvous with a Comet
Alignment with
Common Core & 21st Century

Common Core: English Language Arts	Mission Activity
RI.5/6/7.1: Quote accurately from a text when explaining what the text says...	While working in Mission Control, students conduct research by reading informational text and answer questions.
RI.5/6/7.4: Determine the meaning of general academic and domain-specific words and phrases in a text...	Students work with their teammates to understand and use vocabulary specific to their team and mission.
SL.5/6/7.1: Engage effectively in a range of collaborative discussions...building on others' ideas and expressing their own.	Students engage in communication and problem solving in order to successfully accomplish mission objectives.
Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.	During the mid-brief, students analyze information presented by Flight Director in order to determine fate of their mission.
Adapt speech to a variety of contexts and tasks...	Students communicate with teammates across simulators using provided protocol. Students engage in communication with teammates, Flight Director and Commander.
Common Core: Mathematics	**Mission Activity**
5.NBT.4 & 5.NBT.7: Use place value understanding to round decimals to any place & add, subtract, multiply, and divide decimals to hundredths...	While working in Mission Control, students calculate averages based upon readings they receive from the astronauts in the Spacecraft.
5.MD.5: Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	Students collect mass and calculate the volume of meteoroids.
5.G.2: Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in context of situation.	Students must locate the comet using right ascension and declination. They must also use x, y coordinates to determine where to launch the probe.
6.SP.5: Summarize numerical data sets in relation to their context.	Students analyze data they receive from the Space Station in order to determine if results are acceptable or not.
7.SP.2: Use data from a random sample to draw inferences about a population with an unknown characteristic of interest.	Students analyze medical results to determine if crew working in the Space Station is healthy.
21st Century Learning	**Mission Activity**
Make Judgments and Decisions, Solve Problems	Students make judgments and solve problems.
Communicate Clearly and Collaborate with Others	Students communicate in and across the simulators to work with their teammates.
Access, Use, Manage and Evaluate Infomation	Students analyze data to accomplish mission objectives.
Apply Technology Effectively	Students use computers to obtain information and communicate.
Be Flexible, Work Independently, Interact Effectively With Others	During emergencies, students respond to new information and procedures.
Manage Projects and Be Responsible to Others	Students must complete tasks during the mission timeframe.

Rendezvous with a Comet
Alignment with
Next Generation Science Standards

RENDEZVOUS WITH A COMET®

Next Generation Science: Science & Engineering Practices	Mission Activity
4. Analyzing and interpreting data	While working in Mission Control, students are responsible for recording, analyzing, and interpreting the data that they are given by their teammates in the Space Station.
5. Using mathematics and computational thinking	Students record, calculate and analyze data.
6. Constructing explanations (for science) and designing solutions (for engineering)	Students in Mission Control must use the information and data they are given by their teammates in the Space Station to construct an argument based on the information they are presented with.
7. Engaging in argument from evidence	They must construct an argument from evidence during the mid-mission briefing, when the group as a whole is presented with a list of criteria and must decide what to do next.
8. Obtaining, evaluating, and communicating information.	While students are in the Space Station, they obtain information and data and must communicate this information to Mission Control.
Next Generation Science: Disciplinary Core Ideas	**Mission Activity**
5-ESS1: Earth's Place in the Universe 5-ESS3: Earth and Human Activity 5-PS2: Motion and Stability; Forces and Interactions 5-LS1: From Molecules to Organisms: Structures & Processes	Students use their knowledge about comets to intercept and launch a probe to the comet. They must conduct research during the mission and work to keep the crew safe.
MS-ESS1: Earth's Place in the Universe MS-ESS2: Earth's Systems MS-ESS3: Earth and Human Activity	Students use their knowledge about comets to intercept and launch a probe to the comet. They must conduct research during the mission and work to keep the crew safe.
Next Generation Science: Crosscutting Concepts	**Mission Activity**
2. Cause and effect	When an oxygen emergency occurs, students must solve the emergency or abort the mission.
3. Scale, proportion, and quantity	Students use beakers, graduated cylinders, geiger counter, balance to monitor environment of the Space Station.
6. Structure and function	Students must build a probe to meet up with a comet.
Nature of Science	**Mission Activity**
1. Scientific Investigations Use a Variety of Models 2. Scientific Knowledge is Based on Empirical Evidence	Students use variety of lab equipment, calculators, equipment and techniques to complete investigations.
5. Science is a Way of Knowing	Students make measurements, record observations and analyze data in order to contribute to their role in the mission.
7. Science is a Human Endeavor	Students take on the role of flight controllers and astronauts during their mission.