

Elective 7- Reading and Writing in Science with the CCSS
"Pluto or Bust"
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Pluto or Bust
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NASA scientists know a lot about our planetary system and its members but Pluto still remains somewhat mysterious. In 2006, NASA launched the New Horizons spacecraft set out to explore Pluto and its moon, Charon. The spacecraft arrived at Pluto in 2015 and was the first to explore the planet. It completed a six-month flyby study. Students are to complete the assignment below regarding exploration of Pluto and focus on reading and writing in Science:

1. Read "Pluto or Bust" in its entirety and annotate the reading using both margin notes/summaries of each paragraph as well as highlighting pertinent pieces of text
<https://spaceplace.nasa.gov/classroom-activities/en/>
2. Choose **one** of the listed writing prompts below and write a 3-paragraph response being sure to include **terminology from the Forces and Motion unit** of study (such as Newton's Laws of motion, speed, acceleration, net force, gravity and trajectory) as well as **textual evidence from "Pluto or Bust"**.

Writing Prompts:

1. The New Horizons spacecraft is small and lightweight. Why do you think the NASA scientists and engineers designed it this way? Use text evidence.
2. The spacecraft was launched by a very large Atlas rocket. Why do you think this is the approach NASA took and how would that help the rocket get to Pluto? Include text evidence.
3. The flight course past Jupiter isn't the most direct path to Pluto. Why add the distance? Use text evidence to thoroughly explain your answer.

Relevant Standards:
CCSS:

CCSS.ELA-Literacy.RL.8.1

Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.

CCSS.ELA-Literacy.RL.8.4

Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.

Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects. [Clarification Statement:

- MS-** Examples of evidence for arguments could include data
PS2- generated from simulations or digital tools; and charts displaying
4. mass, strength of interaction, distance from the Sun, and orbital periods of objects within the solar system.] [Assessment Boundary: Assessment does not include Newton's Law of Gravitation or Kepler's Laws.]

WHST.6-8

.1

Write arguments focused on discipline-specific content. (MS-PS2-4)

Conduct short research projects to answer a question (including a

WHST.6-8 self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

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(MS-PS2-1),(MS-PS2-2),(MS-PS2-5)