

Kentucky Summative Assessments



Grade 8 On-Demand Writing Released Prompt 2022

Directions: Select each tab to read the passages and answer the following question.

from “Why Space Exploration Is a Job for Humans”

by Jared Keller

- 1 When the Space Shuttle Atlantis rolled to a stop in July 2011, NASA bid farewell to the nation’s symbol of manned spaceflight. The Obama administration has scrapped NASA’s plan to return humans to the Moon by 2020, which was behind schedule because of technical and budgetary problems. As financial constraints threaten the possibility of future ventures into outer space, many in the astronomical community are advocating for the increased use of unmanned robotic spacecraft, arguing that they will serve as more efficient explorers of planetary surfaces than astronauts. The next giant leap, then, will be taken with robotic feet.
- 2 Dr. Ian A. Crawford thinks it should be otherwise. A professor of planetary sciences at Birkbeck College, London, Crawford makes the case for human space exploration in a new paper entitled “Dispelling the myth of robotic efficiency: why human space exploration will tell us more about the Solar System than will robotic exploration alone,” published recently in the journal *Astronomy and Geophysics*. If the goal of space travel is to expand our knowledge of the universe, argues Dr. Crawford, exploration will be most effective when carried out by astronauts rather than robots on the surface of a planet.
- 3 At the core of Crawford’s argument is that human beings are much better at performing the type of geological fieldwork that makes planetary exploration scientifically valuable: they’re faster and significantly more versatile than even the most advanced autonomous probes. “People who argue for robotic exploration argue for more artificial intelligence, the capacity for robots to make more complex decisions that somehow leads to increased efficiency,” explains Crawford. “But one of the things that make them cheap is miniaturization. You can make robots more intelligent and efficient to a certain point, but they won’t get smaller and therefore cheaper.” With miniaturization, he explains, comes a depletion in the number of scientific instruments a probe can carry, the number of samples it can collect, and its ability to cover more ground. “[Mars rovers] Spirit and Opportunity are fantastic things on Mars, but the fact that they’ve traveled as far in eight years as the Apollo astronauts traveled in three days speaks volumes.” At a certain point, the costs of developing ‘smarter’ (but not better equipped) autonomous rovers will exceed the meager gains in scientific collection and outstrip existing scientific budgets.

Keller, J. (2012, April 4). Why space exploration is a job for humans. *The Atlantic*. Retrieved from <https://www.theatlantic.com>

From “Why Space Exploration Is a Job for Humans” by Jared Keller, *The Atlantic*, April 4, 2012. © 2012 Atlantic Media, Inc.

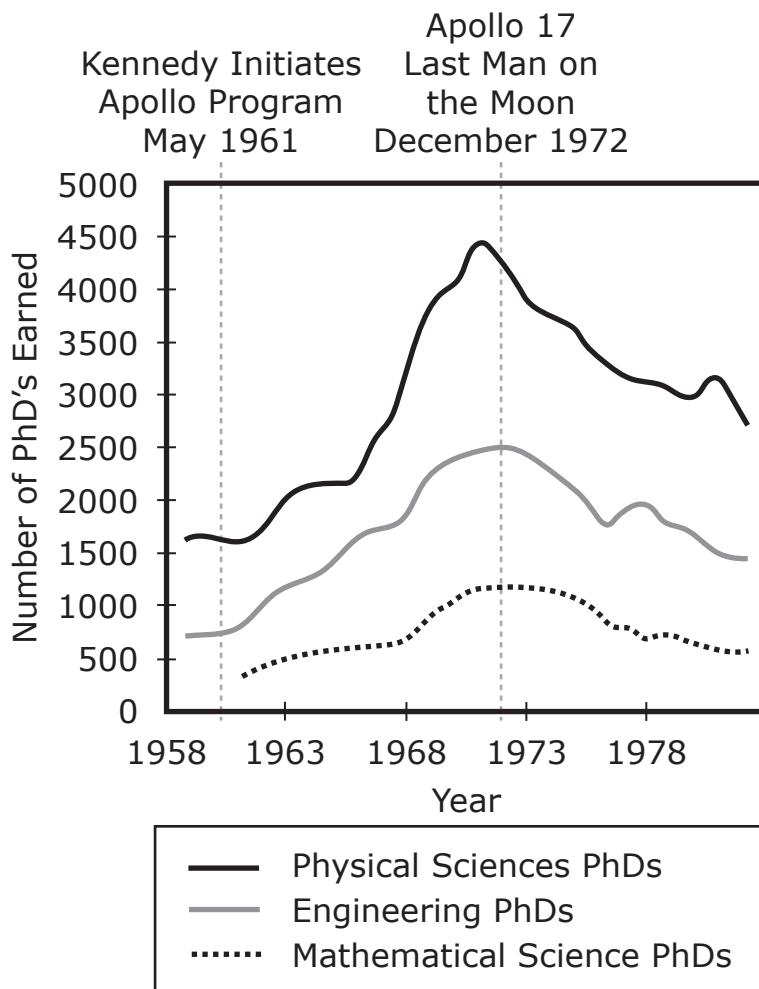
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Directions: Select each tab to read the passages and answer the following question.

from “Benefits Stemming from Space Exploration”

by the International Space Exploration Coordination Group

- Investment in the Apollo Moon exploration programme in the 1960s correlates with the level of technical education later attained by students (Figure 3), suggesting that the programme’s high public profile and dramatic achievements had a widespread influence on the level of US technical education.



Source: Siegfried, W.H., “Space Colonization—Benefits for the World,” Space Technology and Applications International Forum, 2003



- 2 A 2009 survey found that fifty percent of the internationally renowned scientists who published in the prestigious journal *Nature* during the previous three years had been inspired by Apollo to become scientists; 89 percent of the respondents also agreed that human spaceflight inspires younger generations to study science.
- 3 One of the lessons from Apollo is that having a visible space exploration programme is important in encouraging young people to pursue science, technology, engineering, and mathematics (STEM) fields. Such a programme will also send a message to students that they have the possibility of long-term exciting careers in science and technology.
- 4 Today, many space exploration missions include components designed to stimulate young people's interest in STEM. More than 2 million teachers and 43 million students from 49 countries have participated in student experiments and activities associated with the International Space Station (ISS). In some cases, scientists enlisted the help of students to conduct their investigations aboard the ISS, and in other cases students designed space experiments themselves. For example, a programme inviting students to design scientific experiments for implementation on the ISS has attracted the interest of tens of thousands of young people.

International Space Exploration Coordination Group, NASA. (2013, September). Benefits stemming from space exploration. Retrieved from <https://www.nasa.gov/sites/default/files/files/Benefits-Stemming-from-Space-Exploration-2013-TAGGED.pdf>

From "Benefits Stemming from Space Exploration"—Public Domain/International Space Exploration Coordination Group, NASA

Directions: Select each tab to read the passages and answer the following question.

***from* “Debating Manned Moon Missions”**

by Kenneth R. Fletcher

- 1 We asked experts in science and space policy to discuss their views on manned space missions.

John Logsdon

Director of Space Policy Institute, George Washington University

- 2 The main goal is sending people beyond earth’s orbit starting with the moon, eventually getting to Mars, and perhaps beyond. The moon is the first step. We don’t know how to go to Mars yet. The moon is a destination of value in its own right, because there is lots we can do there that will help us learn how to go to Mars.

- 3 This is not primarily about science, and therefore not primarily about the discovery of fundamental new knowledge. It is to test the belief that humans are destined to live in other places in addition to earth. In order to do that, they have to be able to live off the land and do something worthwhile. Exploration lets us find out whether both of these are possible. . . .

Steven Weinberg

Winner of the 1979 Nobel Prize in Physics

Cosmologist, University of Texas

- 4 Manned missions to space are incredibly expensive and don’t serve any important purpose. It isn’t a good way of doing science, and funds are being drained from the real science that NASA does. Sending people to space may be a great show, but so much of what you do has to be built around the necessity of keeping people safe and alive that science takes a second place. Above all, it’s an incredible waste of money. For the cost of putting a few people on a very limited set of locations on Mars we could have dozens of unmanned, robotic missions roving all over Mars and still have money left over to allow the more astronomical sciences to go forward. Unmanned missions have been tremendously important in making this a golden age of astronomy.
- 5 Very often the case is made that putting people into space pushes technology and that’s good for technology on earth. I think that’s nonsense. The kind of technological stimulus we would get from unmanned space exploration is much greater. It would involve developing robotics and computer programs that could deal with things in real time without people around. That’s the sort of thing that’s tremendously useful on earth. The only thing you learn by developing the technology to put people into space, is how to put people into space.



Fletcher, K. (2008, July). Debating manned Moon missions. *Smithsonian Magazine*. Retrieved from <https://www.smithsonianmag.com>

From "Debating Manned Moon Missions" by Kenneth R. Fletcher, *Smithsonian*, July 2008. © 2008 Smithsonian Media.

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On-Demand Writing Directions: Carefully read the prompt below. Then read the provided texts. Enter your essay in the space provided.

Human Space Exploration

Write a well-organized essay arguing whether the people of Earth should continue to pursue manned exploration of space, or focus solely on robotic missions instead. Support your argument with evidence from the texts.



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