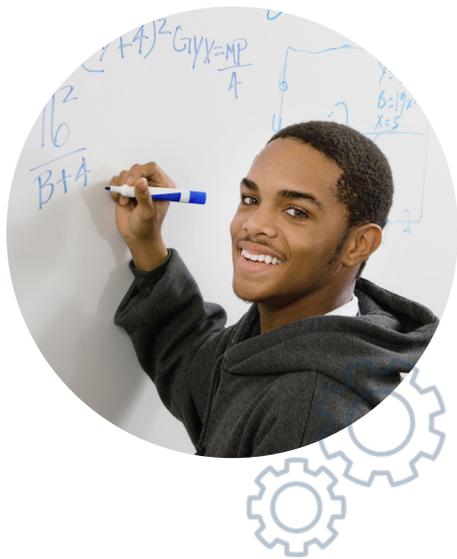




STUDENT ACTIVATION



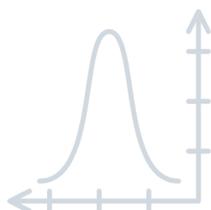
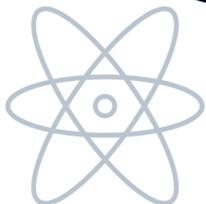
Payload Logistics Lead

OVERVIEW

A payload logistics lead is a professional with an advanced understanding of engineering and mechanics who models and simulates payloads and dynamic environments while working within spacecraft system constraints on mass, power, and volume.

EVALUATE YOUR INTEREST

- I enjoy STEM subjects like physics, computer science, algebra, and calculus.
- I enjoy thinking about complex ideas, and I understand implications of new ideas and how they can affect a current project. I think critically and am good at evaluating my options.
- I am a problem solver. I have a knack for asking smart questions that help others identify problems and issues. I work with others to formulate solutions to problems.
- I am a detail-oriented planner who can provide clear instructions that are easy for others to follow.



Payload Logistics Lead

STUDENT ACTIVATION (CONTINUED)



How does this career affect me?^{1,2}	What are some other similar careers?³	How does this career affect the world?²
<p>Many of the goods and services you enjoy every day are the products of missions that depend on payload logistics leads for their success.</p> <p>Smart phone facial recognition and cameras, cars with blind-spot monitoring or cruise control, and advanced imaging equipment for diagnosis and treatment of medical issues are all available in large part due to payload logistics work.</p> <p>You probably use things every day that can be added to that list: wireless earbuds, invisible braces, memory foam, gym equipment, forehead thermometers, computer touch pads, shock-absorbing athletic shoes, solar batteries, water filtration bottles, and scratch-resistant sunglasses or prescription lenses.</p> <p>You might even be able to help them out! More than 43 million students have participated in student experiments and activities associated with the International Space Station.</p>	<p>Aerospace engineers operate and maintain equipment used in developing, testing, producing, and sustaining new aircraft and spacecraft.</p> <p>Mechanical engineers design, develop, build, and test mechanical and thermal sensors and devices.</p> <p>Electronics engineers focus on specific equipment, such as the instrument panels in aircraft and spacecraft.</p> <p>Computer hardware engineers research, design, develop, and test computer systems and equipment used to measure activity in outer space or on Earth.</p>	<p>Private companies and government organizations employ payload logistics leads in multiple industries, such as aerospace product and parts manufacturing, scientific research, and development services, that contribute to the world's economy.</p> <p>Because improvements in things like power generation and energy storage, recycling and waste management, advanced robotics, health and medicine, transportation, engineering, computing and software, global positioning, and weather forecasting all play a role in creating our best future, it is important that we have people who help make them possible.</p> <p>Satellite data and other information from some payloads also give governments and industry the ability to monitor and reduce our carbon footprint.</p> <p>Space exploration tends to stimulate young people's interest in STEM careers and will allow us to continue to improve the lives of people everywhere.</p>



Payload Logistics Lead

STUDENT ACTIVATION (CONTINUED)



TAKE ACTION

- Consider conducting or reading an interview with a payload logistics specialist. Take note of information that particularly interests you to explore further. Share your results with your family or your class.
- Identify a device that has recently brought a new type of technology to the world, such as one of the “smart” home devices (personal assistants, smart speakers, etc.) that are becoming so popular. Make a list of the components of that technology that could be linked to the work of a payload specialist. Discuss with a friend or classmate what other devices use these same components.
- Select a computer program or application and make a step-by-step list of the process a user takes to get from the beginning (opening the app or program) to the end (fulfilling whatever need brought the user to the application in the first place). Analyze the process and brainstorm ways that it could be simplified or improved. Write your list of recommended improvements in a memo and share it with your teacher.
- Put your design skills to the test as you design a product or component to solve a problem that impacts your community. Follow the engineering design process as you identify the need; research the issue; brainstorm ideas; develop a solution; prototype, test, and evaluate your design; and improve the design.



¹ Student Spaceflight Experiments Program, an initiative of the National Center for Earth and Space Science Education in partnership with NanoRacks, LLC and NASA. www.ssep.ncesse.org.

² USA Today. <https://www.usatoday.com/story/money/2019/07/08/space-race-inventions-we-use-every-day-were-created-for-space-exploration/39580591>.

³ Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, Aerospace Engineers. <https://www.bls.gov/ooh/architecture-and-engineering/aerospace-engineers.htm>.