NEVADA GOLD MINES

STUDENT ACTIVATION

Environmental Engineer

OVERVIEW

Environmental engineers are creative, problem-solving, leadership-oriented professionals who work to prevent and solve environmental problems. They use specialized understanding of science and mathematics to address environmental issues such as pollution, climate change, the spread of disease, and threats to wildlife species. They plan and conduct investigations of environmental issues and draft reports on their findings. They design improvements to waste disposal, recycling, and water distribution systems, and closely monitor these systems for signs of trouble. Environmental engineers help businesses adhere to government regulations and obtain permits. Finally, environmental engineers give corporations and government agencies advice on how to clean up places that have been contaminated with pollutants.

EVALUATE YOUR INTEREST

I love learning by doing. My favorite activities at school involve hands-on experiences such as labs, field trips, and research.

I am a collaborative leader who works well with others. During group activities, people turn to me for help overcoming challenges.

I enjoy bringing people together from different areas of expertise with different strengths.

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 highly organized multi-tasker who can keep track of several projects at once, each with many moving parts.

I am a rule follower, but also flexible. I can implement an existing plan, but make adjustments if problems arise.

I love seeing how the complicated science and math concepts I learn about in the classroom apply to the real world.

How does this career affect me?	What are some other similar careers?	How does this career affect the world?
From the production of goods and services to recreational activities at home with family, nearly all human activity leaves behind environmental footprints that can affect the health and safety of your local community. Environmental engineers design systems to minimize the footprints of these activities. They help manufacturers ensure production processes avoid releasing pollutants into the atmosphere. They make sure scarce resources such as water make it to your faucet as efficiently and cleanly as possible. In doing so, they contribute to preserving the health and safety of you, loved ones, and fellow citizens.	**Mining and geological engineers** design mines and wells to safely and efficiently extract fuel sources and minerals from below the Earth's surface. **Chemical engineers** apply scientific and mathematical principles to solve problems that involve fuel, drugs, food, and other products. **Civil engineers** design, build, and oversee infrastructure systems such as roads, pipelines, power lines, and sewage systems. **Industrial engineers** design systems for integrating labor, machines, materials, information, and energy resources to ensure efficient production of a good or service.	In an increasingly interconnected world, human activities and resource consumption contribute to global environmental problems that threaten public health, peaceful interactions between nations, and the maintenance of the natural world as we know it. Whether acting locally to design systems to minimize communities' environmental footprints or addressing broader issues such as climate change, environmental engineers will play a key role in creating a healthy and sustainable planet.

TAKE ACTION

- Join a science-oriented club at school that is involved with using principles of math and science to construct products, conduct outside research, or address community problems. Possibilities include robotics, the recycling club, or the engineering society. Establish as a personal goal working to earn the opportunity to occupy a leadership position on a specific project or within the group as a whole.
- Select a human activity that is of interest to you, such as production or consumption of a good or resource, and conduct research on that activity's environmental footprint. In doing so, consider these questions: What resources are needed for this human activity? How does extraction of these resources affect local and distant environments? What steps do humans take to minimize the environmental footprint of this activity?