

BIOCHEMIST

Biochemists study the chemical and physical makeup of living things and biological processes.

Biochemists seek to understand the roles of chemical compounds and processes that occur in living things. They will study cell development, growth, and heredity to develop products and processes that improve our lives. Some biochemists develop tests used to detect diseases, genetic disorders, and other illnesses. They first will conduct basic research to understand what is occurring. Then, they will apply research to solving a particular problem. Biochemists study mutations in organisms that lead to cancer and other diseases. They also study genetic mutations in organisms that lead to cancer and other diseases. They also study genetic mutations in organisms that lead to cancer and other diseases.



BOTANIST

Botanists study plant life and how the environment affects different species.

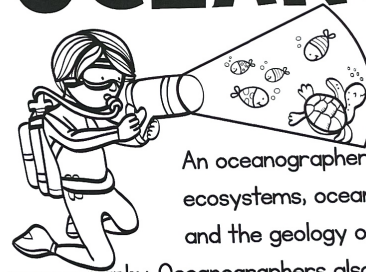
Botanists study various parts of plants, from the microscopic level to the ecosystem level. They may analyze the physiological processes (like photosynthesis), the evolutionary history, or their current relationships with their environment. Some botanists will study how plants respond to stresses like pests, climate change, and diseases. Others will study how a species of plant invades an area and changes the ecosystem. Botanists can conduct experiments to develop environmentally safe ways to control weeds, diseases, and pests. Some others may try to find uses for plants as medicines, tools, biofuels, or even fabrics. Botanists can work for pharmaceutical companies, museums, parks, botanical gardens, seed companies, or biotechnology firms. Some spend a majority of their time outside, while others may work primarily in laboratories and offices.



If you are interested in becoming a botanist, you should take classes in math, chemistry, physics, and biology in high school. Once you enter college, you'll need at least a four-year degree. If you want to focus on research or teach botany at a college, you'll need a Ph.D. No matter the path you take, you'll want to focus on topics like plant anatomy, plant systems, cell biology, plant development, and environmental science.

OCEANOGRAPHER

Oceanographers study the Earth's oceans and their contents, and surrounding environment.



An oceanographer studies a wide range of topics, including marine life, ecosystems, ocean circulation, plate tectonics, properties of the ocean, and the geology of the seafloor. There are many specialties within oceanography. Oceanographers also do a variety of tasks: they can visit locations to collect samples, analyze seawater components like the impact of chemicals on marine organisms, conduct laboratory tests on samples, use chemistry to understand how ocean currents move seawater around the world, make geologic maps and charts, study waves, currents, and coastal erosion, write scientific reports, and/or present their findings to clients and colleagues.

In order to become an oceanographer, you'll want to take as many Earth science, biology, chemistry, physics, mathematics, and computer science courses as you can. In college, students would first earn a Bachelor's degree in chemistry, physics, or marine biology before moving on to an advanced degree in oceanography program.

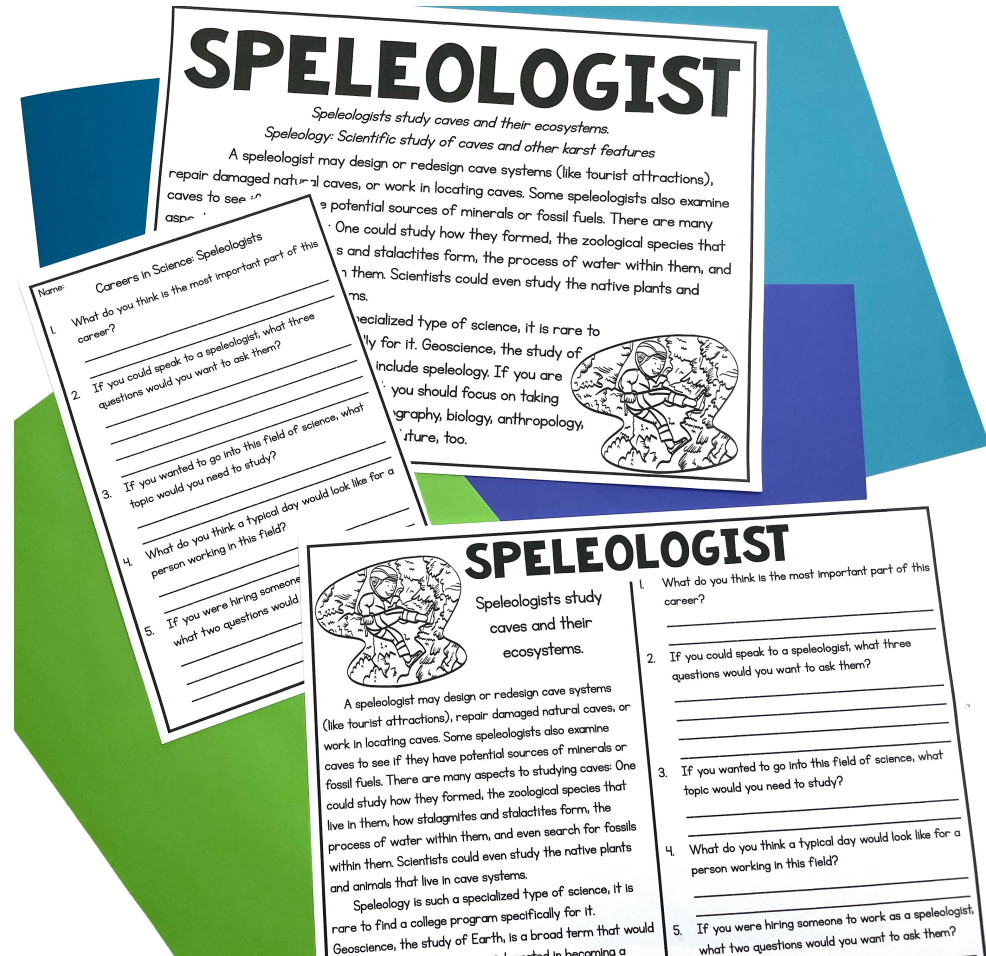
- Archaeologist
- Astronomer
- Biochemist
 - Botanist
- Climatologist
 - Ecologist
- Forensic Scientist
- Geologist
- Laboratory Technician
 - Marine Biologist
 - Neuroscientist
 - Oceanographer
 - Pharmacologist
 - Speleologist

Careers in Science

Informational Articles

Two Print Versions Available:

- Full Page Informational Article on STEM Career + Separate 1/2 Page of Questions about Career
- Informational Article & Questions on the Same Page



Careers in Science Informational Articles

SPELEOLOGIST

Speleologists study caves and their ecosystems.

Speleology: Scientific study of caves and other karst features

A speleologist may design or redesign cave systems (like tourist attractions), repair damaged natural caves, or work in locating caves. Some speleologists also examine potential sources of minerals or fossil fuels. There are many aspects to studying caves: One could study how they formed, the zoological species that live in them, how stalagmites and stalactites form, the process of water within them, and even search for fossils and animals that live in cave systems. Scientists could even study the native plants and animals.

Speleology is such a specialized type of science, it is rare to find a speleologist. Geoscience, the study of Earth's physical structure and processes, includes speleology. If you are interested in geoscience, you should focus on taking courses in geology, geography, biology, anthropology, and earth science, too.



Name: _____
Careers In Science: Speleologists

1. What do you think is the most important part of this career?

2. If you could speak to a speleologist, what three questions would you want to ask them?

3. If you wanted to go into this field of science, what topic would you need to study?

4. What do you think a typical day would look like for a person working in this field?

5. If you were hiring someone to work in this field, what two questions would you ask?

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ARCHAEOLOGIST

Archaeologists study past human activity by excavating, dating, and analyzing physical remains.

Archaeologists might study the million year old fossils in Africa or they might study the 20th century buildings in New York City. No matter where they are, archaeologists work to analyze the physical remains of the past: human culture. Within archaeology, there are specializations like bioarchaeology (the study of animals), paleo-anthropology (the study of ancient humans), paleo-ecology (the study of ancient plants), and lithics (the study of stone tools). Archaeologists also study the physical remains of past sites, which can be any place where people have lived.



ASTRONOMER

Astronomers study planets, stars, and other celestial bodies. Astronomers focus on the study of space, which includes galaxies, stars, and planets above us. They can study how stars and planets change over time, how the solar system will evolve over time, and how the universe is changing.

Astronomy is the study of celestial objects and phenomena that originate outside the Earth's atmosphere. It is a scientific discipline that involves observing and measuring the properties of celestial objects and the interactions between them. Astronomers use a variety of instruments, including telescopes, spectrographs, cameras, and computers, to collect data and analyze it. They also use their knowledge of physics to understand the underlying processes that govern the behavior of celestial objects.



PHARMACOLOGIST

Pharmacologists are medical scientists who work to develop new medications. A pharmacologist studies how medicine works. Sometimes, people think that pharmacologists and pharmacists are the same. Pharmacists are health care providers who dispense medications and provide patient education. Pharmacologists are scientists who study the effects of drugs on the body. They work to develop new medications and to understand how existing medications work.

Pharmacologists work in a variety of settings, including pharmaceutical companies, government agencies, and academic institutions. They may work in the laboratory, in the clinic, or in the field. They may also work in regulatory agencies, where they ensure that medications are safe and effective. Pharmacologists play a vital role in the development and use of medications.

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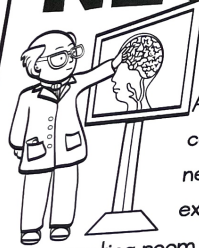
A speleologist may design or redesign cave systems (like tourist attractions), repair damaged natural caves, or work in locating caves. Some speleologists also examine the geology of caves, the biology of cave ecosystems, and the history of cave use. There are many different types of speleologists, and each has a different focus. Some speleologists are interested in the geology of caves, while others are interested in the biology or the history of caves.

NEUROSCIENTIST

Neuroscientists are scientists who focus on the study of the nervous system.

A neuroscientist studies the brain and its impact on behavior. There are many branches of neuroscience, and neuroscientists can cover several branches at the same time. For example, a neuroscientist might work as a neurosurgeon, where they would perform surgery on the brain. Or they might work as a neurophysiologist, where they would study the electrical activity of the brain. Whatever they do, neuroscientists try to understand how the brain works and how it affects behavior.

In order to become a neuroscientist, you would need to earn a degree in neuroscience. You can first earn a bachelor's degree in biology, psychology, or neuroscience. Then, you would go to school for a master's degree or a Ph.D. in neuroscience. You would also want to gain research experience, either through internships or by working in a lab.

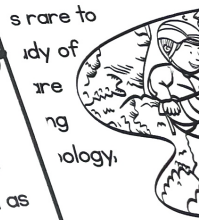
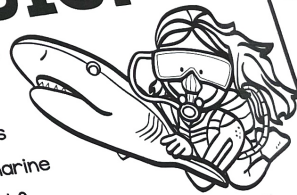


MARINE BIOLOGIST

Marine biologists study the organisms and ecosystems in the ocean and other saltwater environments.

Marine biologists are scientists who study the plants and animals that live in the ocean. People who specialize in marine biology can focus on many different aspects of oceans and life in the ocean. They can study the ocean currents, how human behaviors impact the ocean, or even how ocean environments produce medicines. Marine biologists often split their time between the laboratory and the field. They may work in the field, like on a boat, or in a laboratory. They'll take the data that's collected in the field to their laboratory to continue studying. As with most science careers, marine biology is an umbrella term and there are many specializations within this career, such as marine mammalogy, marine botany, marine zoology, and marine microbiology.

In order to become a marine biologist, you'll need a degree in marine science, biology, ecology, oceanography, or zoology. A Ph.D. is needed in order to work in a research position. You'll also need strong research skills, be able to work well with a team, and have a passion for the ocean.



SPELEOLOGIST



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ARCHAEOLOGIST

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Archaeologists might study the million year old fossils in the 20th century buildings in New York City. They are, archaeologists work to analyze the past in hopes of understanding human history. There are specializations like bioarchaeology (remains), zoo-archaeology (the study of ancient plants), and lithics (the study of ancient tools). Archaeologists work at archaeological sites where physical remains of past human activity play there are prehistoric settlements. These sites are as large as prehistoric settlements. One of the most important tools that was left behind is the stone tool that was left behind. Archaeologists use these artifacts to learn about the people who lived there.

To become an archaeologist, you should develop skills in science, English, and history. You'll need excellent writing skills, while also being able to apply these skills in the field and analyze data. The typical college degree for an archaeologist is a Bachelor's degree.

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4. What do you think a typical day would look like for a person working in this field?

5. If you were hiring someone to work as an archaeologist, what two questions would you ask them?

CLIMATOLOGIST



Climatologists study weather patterns over a period of time.

Climatologists are similar to meteorologists in that they study weather; however, climatologists focus on a much longer timescale and study trends over months, years, or even centuries. Climatologists will study and interpret data, maps, photographs, and charts to predict long and short scale patterns. They'll often use weather stations, satellites, or radar stations to look at things like cloud coverage, snow packs, and glacier sizes. Climatologists can also study oceans and volcanic eruptions since they can alter the climate. They'll also use computer models to help predict patterns and prepare forecasts, then will make scientific presentations based on their findings. Some scientists in this field will work with government agencies, nonprofit organizations, or even archaeology departments at major colleges and universities.

In order to become a climatologist, you'll want to earn a Bachelor's degree in climatology, meteorology, or atmospheric science. These focus heavily on math and physics, as well as agriculture, biology, and natural sciences. If you want to focus on research, you'll need to earn at least a Master's degree that focuses on climatology.

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