



Careers in Science

Lesson plan

Objective:

1. Understand that there is a broad spectrum of careers that fall within the scientific realm
2. Understand that different scientific careers require different levels of education and result in different pay scales
3. Understand what to expect from specific careers in science (i.e., a day in the life of an academic scientist; focus on careers of interest to your specific group)

Background information:

Explain to students that careers in science include being a doctor, nurse, vet, researcher, or teacher/professor but that there are also many other options that can be related to non-scientific fields such as law, business, or media.

With so many careers in science out there it is impossible for this lesson plan to provide an exhaustive list. The information below covers some of the most common careers in science:

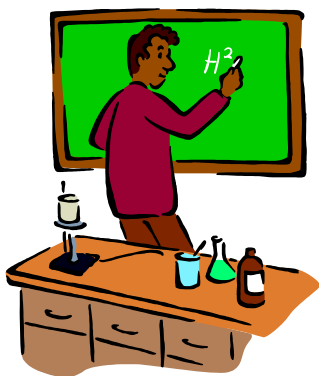
Lab technician/research assistant/lab manager

Duties: Assist in collection of data; set up, operate, and maintain laboratory instruments. Lab techs are trained to perform chemical, cellular, physiological, and behavioral assays. They must develop expert knowledge of laboratory equipment and may also work with animals used in research.

Education: 4-year bachelor's degree in a science field or a high school degree + 4 years of experience in a related field.

Salary: \$30,000-40,000/year

Personality traits: A lab tech must be well organized and good at multi-tasking. The job requires a lot of attention to detail, patience and excellent team-working skills.



Science Teacher

Duties: Use creativity to develop lesson plans with different teaching techniques (lectures, projects, exhibits, field trips). Monitor, assist, correct, and grade student results by preparing assignments and tests for in-school preparation and homework. Communicate with parents to report academic progress of their students. Update professional knowledge by attending faculty meetings and conferences.

Education: 4-year bachelor's degree in education with a minor in a relevant science field and a state

PARTICIPATION

This station is designed for 10-15 students.

TIME

- Activity 10-20 min

TEACHING TIPS

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certification. Experience coordinating academically-oriented clubs and extracurricular activities are preferable.

Salary: \$35,000-55,000/year

Personality traits: A science teacher must be able to maintain order in the classroom, must be patient, understanding and confident in his/her knowledge. A teacher should motivate and inspire students to understand and love science.

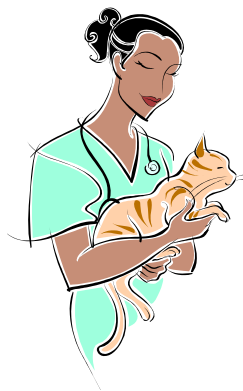
Veterinary technician

Duties: Vet techs are like nurses for animals. They may perform laboratory tests, assist with dental care, prepare tissue samples, take blood samples, and assist veterinarians in a variety of other diagnostic tests. Veterinarians and vet techs can work either with domestic animals or in a biomedical research setting.

Education: At least a 2-year associate's degree from a community college or a 4-year bachelor's degree. Some colleges offer degrees in veterinary technology.

Salary: \$28,000-43,000/year.

Personality traits: People who would like to combine their love for science and medicine with animal work are best suited for this job.



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PhD Scientist

Duties: There are two major kinds of scientists: academic & industry. Academic scientists work at universities and are usually the Principal Investigator of their own lab. Responsibilities in this position include writing grants to obtain funding, designing experiments, writing papers to publish results, mentoring graduate students or postdoctoral fellows, ensuring that research is conducted ethically, and teaching. Industry scientists usually work for a pharmaceutical or

biotech company, where responsibilities can include developing a particular type of drug and testing side effects.

Education: 4-year bachelor's degree plus a 5-year doctorate degree. Typically, at least one post-doctoral fellowship is required for academia.

Salary: Post-doctoral fellow: \$40,000 - 45,000; faculty member: \$55,000 - \$100,000; industry job: \$60,000 - above \$150,000

Personality traits: Scientific curiosity, persistence, patience, dedication, ability to work under pressure, and excellent speaking and writing abilities are some important assets to achieve a successful career as a PhD scientist.

Joint Degrees:

MD/PhD: This degree is designed for students who want both medical and research education. Typically people who pursue this degree split their time



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between patient care and conducting research. To earn this degree, the first two years of medical school are completed, then approximately 3 years of dissertation research to earn a PhD before going back to medical school for third and fourth year clinical rotations.

PhD/MBA: This degree is helpful for those interested in starting a biotech company or running your own consulting firm. At Wake Forest, all classes for your PhD are completed in your first two years, and MBA classes are at night during your third and fourth year of grad school.

PhD/JD: This degree is useful for those who want to practice law with a focus on science, such as a patent lawyer who must be able to understand the scientific and technical innovations of their client's invention. Patent lawyers must have a license through the United States Patent and Trademark Office.

Additional information is provided on the handout given to students.

Facilitating the activity:

Ask students what they are interested in, and **tailor the station to their interests**. If they are interested in something other than science (law or business), make sure you talk about possible careers that can be related to science in their areas of interest. Regardless of students' interests, remember to cover careers that span a variety of education and income levels. Try not to focus on salary too much but more on the duties required of a particular career and what kind of personality fits well with what career.

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