

Exploring Careers in Biotechnology



Introduction

Lesson Introduction

Career opportunities in biotechnology have grown significantly in the last decade. Historically, positions in this field have required masters and even doctoral level degrees; however, as a result of recent industry growth, different types of positions requiring different skill sets are now in high demand.

In order to fill the critical skill gap which has emerged, many associate and bachelor degrees now center on biotechnology careers in areas such as quality assurance, human resources, information technology, and manufacturing. Two-year community college graduates have trained to become biotechnology technicians, and many high school graduates have moved directly into biotech-related manufacturing positions. Whatever your students' aspirations for higher education are, there just might be a perfect career opportunity in biotechnology waiting for them!



Grade Level: Grades 9 - 12

Time Needed: 60 minutes

Learning Objectives

After completing this lesson, students will be able to:

1. Recognize how recent industry growth has created a new world of career opportunities in biotechnology
2. Expand their understanding of the different types of career opportunities available in the field of biotechnology and the varying levels of education required for those careers
3. Identify personal strengths which align to specific biotech careers

Next Generation Science Standards (NGSS)

As a result of activities for grades 9-12, all students will learn content in these areas:

Topics

- Careers in Biotechnology

Performance Expectation

- None

Dimension

Practices:

- Asking Questions
- Obtaining, evaluating, & communicating information

Disciplinary Core Ideas:

- None

Cross-Cutting Concepts:

- None



Materials

- Personal computers
- Internet access
- Press cards (for optional activity)



Instructional Approach

1. Introduce the concept of exploring careers in biotechnology (referring to the supplemental content/discussion prompts on the following page).
2. Brainstorm a list of biotech careers. Share a few possibilities with the class to get them thinking of possibilities. Write the students' responses on the board.
3. Give students the following homework assignment:
 - a. Conduct Internet research on the various types of careers available in the field of biotechnology.
 - b. Based on your research results, select one biotech career which is of particular interest to you – one for which you could be well suited, or one which you could envision yourself pursuing.
 - c. Write a three paragraph summary of this career/position type, including:
 - Roles and responsibilities
 - Job specific skill requirements
 - Educational requirements (type and length of education)
 - Average salary range
 - Personal requirements (work environment, physical abilities, travel requirements, etc.)
 - Why you believe you are well suited for this career or why this career is of interest to you
 - d. Be prepared to share and discuss your summary with the class.
4. Select random students to share their research findings with the class.

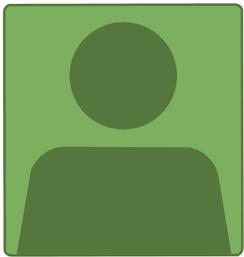


5. Optional activity After students have concluded their homework assignment, bring four students up to the front of the classroom and have them sit at a desk or table. These students (*who you will pre-select and notify at the time of issuing the homework assignment*) will serve as the “experts” in their career field.

Have other designated students (again, pre-selected) act as members of the press (pass out the Press Passes to these students). They will ask interview questions of the experts about what they found during their research. (Members of the press may document their questions on the back of their press passes prior to the interviews.)

Press questions could include, for example, “Mr. Smith, can you describe for us what a typical day is like for you as a biotechnology technician?” Or, “Miss Jones, can you talk to us about the educational requirements that are necessary for your position?”

PRESS PASS



Name:

Signature:

Date:

GetBiotechSmart.com

PRESS PASS



Name:

Signature:

Date:

GetBiotechSmart.com



Supplemental Content – Discussion of Careers in Biotechnology

1. When you think of someone who works in the field of biotechnology, what image comes to mind? (*Solicit responses from students*). A researcher in a lab or scientist in a white coat? Probably so.

Today's biotechnology industry is booming and the number of related positions is also on the rise. No longer is the stereotypical white lab coat role your only career option. Biotech careers range from research, development, sales, and marketing to manufacturing, quality control, human resources, and more.

2. Career opportunities in biotechnology have grown significantly in the last decade. Historically, positions in this field have required masters and even doctoral level degrees; however, as a result of recent industry growth, different types of positions requiring different skill sets are now in high demand.

In order to fill the critical skill gap which has emerged, many associate and bachelor degree programs now offer biotechnology training for careers in quality assurance, human resources, information technology, manufacturing, and many other related areas. Two-year community college graduates have trained to become biotechnology technicians, and many high school graduates have moved directly into biotech-related manufacturing positions. Whatever your aspirations for higher education are, there just might be a perfect career opportunity in biotechnology waiting for you!

3. Let's talk about some career possibilities in this booming industry. (*Brainstorm prompts: biotech lab technician, genetics researcher, manufacturing manager, computer technician, etc.*)

Follow Up Questions

1. What can we learn from this activity?
2. Did this activity open your eyes to any new career possibilities in this growing field?
3. Did your research or any of your peer's presentations peak your interest in a possible career in biotechnology?

Exploring Careers in Biotechnology – Student Sheet



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In order to fill the critical skill gap which has emerged, many associate and bachelor degrees now center on biotechnology careers in areas such as quality assurance, human resources, information technology, and manufacturing. Two-year community college graduates have trained to become biotechnology technicians, and many high school graduates have moved directly into biotech-related manufacturing positions. Whatever your aspirations for high education might be, there just might be a perfect career opportunity (in biotechnology) waiting for you!

Materials

- Personal computers
- Internet access
- Press cards (for optional activity)

Procedure

1. Conduct Internet research on the various types of careers available in the field of biotechnology.
2. Based on your research results, select one biotech career which is of particular interest to you – one for which you could be well suited, or one which you could envision yourself pursuing.
3. Write a three paragraph summary of this career/position type, including:
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4. Be prepared to share and discuss your summary with the class.

