

Career and college exploration. For all students. Together.

Science, Technology, Engineering, and Mathematics (STEM) Activities for All Grades

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Students will learn how ecology can be used in their future careers.





Draw a Scientist Doing Science

TARGET GRADES

Elementary School, Middle School, and High School

OBJECTIVE

Students will have the opportunity to break the stereotype of what and who a scientist is. This activity will be able to explain what a scientist does.

MATERIALS

- Paper
- Pens
- Internet access and device for follow-up activity
- Download the “List of Women Scientists” from the **SUPPORTING MATERIALS** section, which is located on the DiscoverU website under RESOURCES.

PREP TIME REQUIRED

N/A

PREP STEPS

N/A

ACTIVITY TIME REQUIRED

10 minutes

Optional activity of 20 minutes

ACTIVITY INSTRUCTIONS

- Ask students to draw a picture of a scientist doing science
- Have students share their drawings through a gallery walk
- Have a discussion around what students saw and noticed
 - Many students often draw men and/or white people as scientist. This activity is to show students the many people, including women and people of color who are scientists.
- Optional: Have students pick one of the scientists from the “List of Women Scientists” to research and report back on them.

For additional resources and to sign up for the DiscoverU newsletter, visit our website at www.discoveruwa.org



Job of the Future

TARGET GRADES

Elementary School and Middle School

OBJECTIVE

Students will work in teams to predict a career of the future.

MATERIALS

- Poster paper
- Markers

PREP TIME REQUIRED

20 minutes

PREP STEPS

- Research new careers in technology and how fast the field is growing

ACTIVITY TIME REQUIRED

30 minutes

ACTIVITY INSTRUCTIONS

- Students ask parents, grandparents, or family members what jobs and how life was when they were young.
- Teacher presents information to students on how technology and technology careers have changed in the last 10 years
- Students are then faced with the task of inventing or predicting what a new career in the field of technology will be. Some examples include:
 - Someone who makes synthetic food
 - Flying car mechanic

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Measuring in Careers

TARGET GRADES

Middle School and High School

OBJECTIVE

Students will identify careers rely on precise measuring skills.

MATERIALS

- Sticky notes

PREP TIME REQUIRED

N/A

PREP STEPS

N/A

ACTIVITY TIME REQUIRED

15-20 minutes

ACTIVITY INSTRUCTIONS

- Ask students “In which job would it be disastrous if the employee didn’t know how to measure properly?”
- Have students write answers on sticky notes by themselves
- Have student get into groups of 4-5 and share results
- Students will agree on one to share with the class and prepare a small presentation on the career and how it involves measuring.

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What Math, What Path?

TARGET GRADES

Middle School and High School

OBJECTIVE

Students will research how math is involved in the careers that interest them. Students will brainstorm paths that lead to those careers.

MATERIALS

- Computers
- Slides: Videos
- Index Cards 3x5 to make career cards

PREP TIME REQUIRED

15-20 minutes

PREP STEPS

- Poll students a week or so before to see what careers interest them to make the cards. Prepare career cards where one side has the career that students will research and the other side has the questions. Ex. First side: Musician. Second side: 1. What math is involved? 2. Name two pathways to get to the career.

ACTIVITY TIME REQUIRED

20-25 minutes

ACTIVITY INSTRUCTIONS

- Pair students or allow students to choose their partner.
- Have groups pick their career card (merchant, architect, basketball player, musician, FBI, etc.) at random.
- Students will research or brainstorm (if no computer access) the two questions on the back of the card for 15 minutes. Encourage groups to break up the work (one student work on how math is involved and one work on paths).
- Allow 5-10 minutes for students to share to the class.

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Who am I? Chemical Reactions

TARGET GRADES

Middle School and High School

OBJECTIVE

Students will identify careers that involve using and understanding chemical reactions.

MATERIALS

- Scrap paper, sticky notes, or index cards

PREP TIME REQUIRED

1 minute

PREP STEPS

- Write down question on board: "I am making a chemical reaction: who am I?"

ACTIVITY TIME REQUIRED

15-20 minutes

ACTIVITY INSTRUCTIONS

- Ask students to reply to the question writer on the board. Be clear that students need to pick a career and not a specific person.
- Students will write their answers down on a piece of paper and then get into groups of 4-5 to share answers.
- Groups will pick a presenter to share out the groups answers. Tell students to not repeat answers.
- Careers that involve using and understanding chemical reactions include:
 - Baker
 - Chemist
 - Concrete mixer
 - Chef
 - Hair colorist
 - Pharmacist
 - Cosmetology
 - Pyrotechnics
 - Plastics engineer
 - Factory manager
 - Food (in factory)
 - Welder
 - Nurse

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Who am I? Microscopes

TARGET GRADES

Middle School and High School

OBJECTIVE

Students will identify careers that involve using and understanding microscopes.

MATERIALS

- Scrap paper, sticky notes, or index cards

PREP TIME REQUIRED

N/A

PREP STEPS

- Write down question on board: "I am looking into a microscope: who am I?"

ACTIVITY TIME REQUIRED

15-20 minutes

ACTIVITY INSTRUCTIONS

- Ask students to reply to the question writer on the board. Be clear that students need to pick a career and not a specific person.
- Students will write their answers down on a piece of paper and then get into groups of 4-5 to share answers.
- Groups will pick a presenter to share out the groups answers, answers can't be repeated.
- Careers that involve using and understanding microscopes include:
 - Jewelry appraiser
 - Forensic scientist
 - Science teacher
 - Doctor
 - Biologist
 - Lab technician
 - Water quality samplers
 - Vet technician
 - Geologists
 - Pawn shops
 - Entomologist
 - Customs agents
 - Pathologist
 - Epidemiologist

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Who cares about ecology?

TARGET GRADES

Middle School and High School

OBJECTIVE

Students will learn how ecology can be used in their future careers.

MATERIALS

- Pen or pencil
- Paper
- Optional: PowerPoint presentation and projector

PREP TIME REQUIRED

10 minutes. 30 minutes if making a PowerPoint presentation.

PREP STEPS

- Optional: Prepare a short presentation with a list of different careers ecology is used in.

ACTIVITY TIME REQUIRED

20-30 minutes

ACTIVITY INSTRUCTIONS

- Have students do a 5-minute think pair and share on what careers involve ecology.
- Present several scenarios:
 - Growing up in a city needs more lands and resources
 - A polluted water source such as Duwamish, Flint, or Dakota Access Pipeline (DAPL)
 - Farmers with changing climate and/or facing a drought
 - Native American tribes that depend on salmon
 - A factory wants to make sure residents don't get sick from its chemicals
- Have students continue to brainstorm careers to add to the list they came up with
- Optional: show a presentation with a list of possible careers and add to their list

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