

EXPLORING NASA CAREERS

AT A GLANCE

Students will explore their skills and interests, discover NASA STEM careers and set goals for their future.

OBJECTIVES

Students will:

- Develop self-awareness about their skills and interests.
- Begin exploring STEM careers using NASA resources.
- Set short- and long-term goals for their future career success.

KEY VOCABULARY

Career, STEM, College and Career Readiness Act, NASA

SUGGESTED GRADE

LEVELS: 6—8

ILLINOIS STATE LEARNING GOALS

Middle/Junior High

5: A, B; 13: B

ILLINOIS LEARNING STANDARDS—SOCIAL/ EMOTIONAL

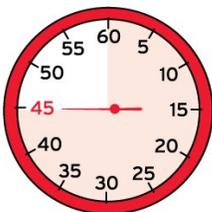
1: B, C

NATIONAL CAREER DEVELOPMENT GUIDELINES

PSI.K1; PSI.A1; PSI.R1; PSI.K2;
PSI.R2

PACE YOURSELF

Five 45-MINUTE PERIODS



MISSION TO MARS



ADVANCE PREPARATION

1. Copy all student information sheets and worksheets.
2. Collect the *Mission to Mars* ID Tag booklets students completed during their pre-activity for *Mission to Mars*.
3. Visit the NASA Careers Student Resource Page at: www.nasa.gov/audience/forstudents/5-8/career/index.html to become familiar with the site before teaching this lesson.



MATERIALS

Per Teacher:

NASA poster “Your Future and Ours”

Per Group:

NASA Poster Profile information sheet

Per Student:

Exploring Me Scrapbook student worksheet
My Career Plan Pathway student worksheets
NASA Career student information sheet
NASA Career student worksheet
3-ring binder, pocket folder, foldable, etc.
Tape or glue
Markers or crayons
Scissors
Paper—construction, white, colored, etc.



WHAT YOU NEED TO KNOW

In 2007, Illinois passed the College and Career Readiness Act. A primary focus of this act is to better prepare students for life after high school beginning in elementary school. It is especially important for students to have a post-secondary education and/or skilled training. This is necessary to be successful today in a very competitive global economy.

Schools can play a key role in guiding students to make informed choices supporting challenging academic preparation. Middle-school educators are being asked to provide students with information about secondary and post-secondary education and exposing students to career possibilities. It is important to help students begin to understand their personal and educational choices today will affect their future.

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One way middle schools can support students in college and career readiness is by providing opportunities for them to think about their skills and interests and begin to explore career areas. Students need to recognize their responsibility for their own educational planning and understand how their school performance now relates to their future.

This lesson exposes students to jobs at NASA (National Aeronautics and Space Administration), focusing on STEM (science, technology, engineering and mathematics) careers. STEM concentrations at NASA include: agriculture, computer and informational sciences, engineering, biological sciences, mathematics and statistics, and physical science technologies. STEM careers are becoming more important in the 21st century as scientific and technological innovations have become increasingly critical to U.S. economic competitiveness and growth.



WARM UP

1. Review with students their experience meeting NASA experts during their *Mission to Mars* videoconference. What do they remember about the expert's school days? What type of training/schooling did the expert have to prepare him/her for a career at NASA? Did the expert have any advice for the students?
2. Have a class discussion about the importance of students needing to take responsibility for their own education. Brainstorm with students a list of tips for making classes count. The following are some suggestions: sit close to the front of the class/pay attention; participate in class discussions; ask questions; keep up with class assignments; ask for help; learn keyboarding skills; take good class notes; proofread, correct, and rewrite your work; read outside of class-newspapers, magazines; look up words you don't know in the dictionary.
3. Ask students what characteristics and skills they believe employers look for in job applicants. To help students see a connection between school performance and a successful career in the future, make a Venn diagram labeled Career Skills and School Skills and discuss the similarities and differences. Be sure to stress basic employability skills such as organization, managing time, communication (write and speak clearly, listen carefully), math skills, responsibility.



ACTIVITY 1 (Day 1)

1. Explain to students they will be exploring NASA (National Aeronautics and Space Administration) careers. Tell students that NASA has many STEM careers and have a class discussion about STEM careers and why they are important for the future.
2. This activity uses information from the NASA Careers Student Resource Page at the following website: www.nasa.gov/audience/forstudents/5-8/career/index.html. Students can explore the website on their own in the classroom, or you can explore it together as a class. Students will be doing activities using information from the website. If student computers are not available, the Career Fact sheets and NASA Specialist sheets can be printed out ahead of time.
3. Show students the NASA poster, "Your Future and Ours." Divide your students into nine small groups and assign one of the NASA employees found on the poster to each group. Give each group the corresponding "NASA Poster Profiles" information sheet and ask each group to read about their assigned NASA employee. Have student groups then create an oral report for the rest of the class describing that person. Depending on the level of your students, ask them to do further research into the type of career of the NASA employee. Students can also include visuals in their report.

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4. Direct students to the website www.nasa.gov/audience/forstudents/5-8/career/index.html. Have them go to **Career Fact Sheets and Trading Cards**. This will take them to the Astro-Venture page. Have students take a look at the career fact sheets on the page and choose a career they are interested in learning more about.
5. Once the students have chosen a career, distribute the NASA Career worksheet. Ask students to answer the questions on the worksheet using the information from the NASA career fact sheet they have chosen.
6. Students can further their career exploration by looking at the NASA Specialist fact sheets. These are pages written by NASA employees about their jobs at NASA including their career paths to NASA.



ACTIVITY 2 (Days 2-5)

1. Explain to students they will be creating an “Exploring Me Scrapbook” about themselves. The scrapbook should be in book format with a back and cover. Some ideas include: a 3-ring binder, a pocket folder, a foldable, or pages fastened together in sheet protectors. The scrapbook should include the following:
 - **Title Page**—With student’s full name
 - **Table of Contents**
 - **My Career Plan Pathway activity sheets**
 - **The *Mission to Mars* ID Tag booklet**—Students should have completed this as a pre-activity to their *Mission to Mars* experience.
 - **Picture Page**—Students introduce themselves by using drawn pictures or actual photos of themselves doing something they enjoy that says something about them.
 - **Interest Page**—Students describe and illustrate three to five of their favorite interests.
 - **School Page**—Students write about their favorite subject in school and why they enjoy it. Students should also write about any extra-curricular activities they are involved with at school e.g. sports, drama/music, newspaper/speech, class officer, student council, clubs/organizations. Also, mention any honor roll/academic achievements.
 - **Community Service/Clubs and Jobs Page**—Students describe any community service or clubs they are involved with outside of school. Student also describes any jobs they have.
 - **Career Page**—Students should reflect on what they have included in their scrapbook so far and choose a career that matches their interests and activities. They should research the required education, possible salary, job locations, etc.
2. To get students started, ask them to review their *Mission to Mars* ID Tag booklet and complete the My Career Plan Pathway student worksheets. The worksheets allow students to plan for Year 1 and 2, but they can be changed to add as many years as you would like them to include in their plan. This will help them begin to think about what they would like to include in their scrapbook.
3. Distribute the “Exploring Me Scrapbook” student worksheet. Give students several days to complete their scrapbook and encourage them to be thoughtful in their work. The scrapbook work may also be assigned as homework. It may be helpful to assign the students one page at a time and have different due dates for each page in the scrapbook.

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CHECK FOR UNDERSTANDING

- Create rubrics for the students to use during the development of their scrapbook. See the following website for rubric ideas: www.techtrekers.com/rubrics.html.
- Using the suggested information from the NASA Specialist fact sheet, have each student design a page of a class book or a PowerPoint presentation on NASA careers to share with other students (peers or younger). Ask students to include information on why it is important to begin thinking about their careers now as middle-school students.
- Have a Career Day in your classroom to give students the opportunity to share what they have learned about careers with other students in the school. Ask them to create a poster about the NASA specialist they researched to share with others. Invite parents or adults from the community to do a presentation for students about their career for the students.



DIFFERENTIATED INSTRUCTION

- If you do not have five class periods to complete this lesson, modify it so that students do not complete the scrapbook. They can still complete the “My Career Plan Pathway” student worksheets and do the NASA website exploration. Depending on your time and the level of your students, you can choose to have students complete either the NASA Career activity or the NASA Specialist activity, instead of both.
- For challenged students, simplify the scrapbook to the number of pages and content you believe are appropriate for your students. Take a look at the NASA poster as a class and talk about the people pictured on the poster and how they came to work for NASA. Have students choose one of the people to write about and/or draw pictures. Simplify the Career Plan Pathway student sheets as appropriate. Choose a few of the NASA careers and specialists from the website to talk about with your students together as a class.
- Ask your artistic students to design a bulletin board to display class work about NASA careers.



DIGITAL RESOURCES

Great websites for middle-school career exploration:

- Oklahoma Department of Career and Technology Education
www.okcareertech.org/cac/Pages/resources_products/career_Activity_files/11756CarActFile.pdf
- Oklahoma Department of Career and Technology Education—Middle School Classroom Resources
www.okcareertech.org/cac/Pages/resources_products/classroom.htm
- Maine Career Advantage—Career Preparation Curriculum
www.ccd.me.edu/careerprep/



VOCABULARY

Career: An occupation undertaken for a significant period of a person’s life with opportunities for progress

STEM: A common acronym for the fields of science, technology, engineering, and mathematics

NASA: National Aeronautics and Space Administration

College and Career Readiness Act: An Act passed in 2007 committed to better prepare students for life after high school

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RELATED EXHIBITS

Henry Crown Space Center