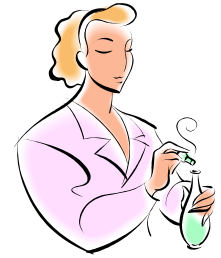


# Scientists: Unit Plan



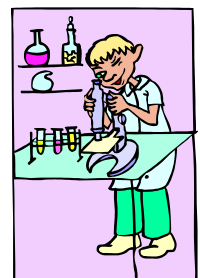
Day One  
Science Career Introduction

Day Two through Day Four  
Research in the library on Science  
Explorers

Day Five  
Field Trip Preparation

Day Six through Day Seven  
Field Trips

Day Eight through Day Nine  
Science Explorer Conference



**SCIENCE CAREERS LESSON PLAN**  
**PERIODS 2, 3, 6, 8, and 9**

**Name:** Nicole Pasquariello Lazor

**Subject:** Science 7

**Date:** //00

**File Name:** sciencecareerslp

**Unit Title:** Introductory Unit

**Lesson Title:** Science Careers

**Lesson Objective:** Students will learn about careers in the sciences.

- List of Daily Activities:**
1. Career Goals and Skills
  2. Scientist definition
  3. Brainstorm of careers in science

**Announcements:**

**Homework to Assign:** Career handout

**Homework to Collect:**

**Warm Up:** Please write down two things you may like to be when you get older.

<b>TIME</b>	<b>ACTIVITIES</b>	<b>MATERIALS</b>	<b>OBJECTIVES</b>
8 min.	Ask each student to share his or her career goals with another student. Then have the students brainstorm three skills that will be needed for each of these careers.	Scrap Paper	Students will think about future goals and how they can succeed.
10 min.	As a class, ask each student to share one of his or her career goals and the skills that are needed to succeed at it.	None	Students will learn more about their classmates and the options out there.
7 min.	Discuss what a scientist does. Include the definition from our department of science, "Asking questions, solving problems, and exploring the world around us."	Board	Students will understand what the scientists do.
10 min.	Scientists study science!  Ask each student to list one career related to science. Write the list on the board as it is generated aloud in class.  Students may begin their homework if there is time.	Board  Handout (File: careerho)	Students will consider the many possible careers in science.  Students will continue their exploration of careers in science.

Subject/Period Science- Name \_\_\_\_\_

Assignment Science Careers Date \_\_\_\_\_

**Now that we have discussed many different career options in science, here is your chance to explain your ideas. Please ask if you have any questions and have fun!**

**Please list three careers that are related to science. Also explain two skills that are needed for each career and why you would be interested in pursuing a career in that field.**

First Career:

Two skills needed for that career:

Why you might be interested in that career:

Second Career:

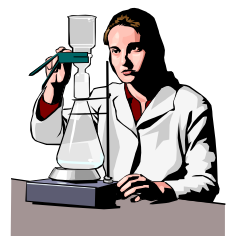
Two skills needed for that career:

Why you might be interested in that career:

Third Career:

Two skills needed for that career:

Why you might be interested in that career:



## EXPLORER RESEARCH TIME LESSON PLAN

**Name:** Nicole Pasquariello Lazor

**Subject:** Science 7

**File Name:** librarlp

**Unit Title:** Introductory Unit

**Lesson Title:** Explorer Project Research Time

**Lesson Objective:** Allow students time using school resources to research their scientists

**List of Daily Activities:**

1. Review of Project
2. Library

**Homework to Assign:**

**Homework to Collect:**

**Lesson Plan:**

**Warm Up:** Please take out your Explorer Research Worksheet and read the directions quietly.

TIME	ACTIVITIES	MATERIALS	OBJECTIVE
5 min.	Briefly remind the students of the rules in the library and make sure they are very clear on the objective of today's class period.	None	Clear up misconceptions about today's class period
35 min.	Take students to the library to perform research.	Library Materials	Give student's the opportunity to use the school's resources

## EXPLORER PRESENTATIONS LESSON PLAN

**Name:** Nicole Pasquariello Lazor

**Subject:** Science 7

**File Name:** explorerpresentationlp

**Unit Title:** Introduction

**Lesson Title:** Explorer Presentations

**Lesson Objective:** The opportunity for the students to present what they have learned about their explorers

**List of Daily Activities:**

1. Science Conference

**Homework to Assign:**

**Homework to Collect:**

**Lesson Plan:**

**Warm Up:** Take out your Explorer Research, Explorer Rough Drafts, Explorer Project Grading Sheet, Explorer Self Evaluation, and Your Explorer Final Copies. Make sure they are all paper clipped together and ready to hand in after your speech!

TIME	ACTIVITIES	MATERIALS	OBJECTIVE
40 min.	Ask for volunteers to present their explorer presentations. Every student will present their scientist over the next two days.	VCR, tape recorders, board, etc.	To give the students the opportunity to present the information they have discovered about their explorers.

Subject/Period Science- Name \_\_\_\_\_

Assignment Explorer Project Rubric Date \_\_\_\_\_

To help you complete the explorer project to the best of your ability, here are some guidelines on how the project will be evaluated. The categories and point values are listed in different columns. If you have any questions, please ask and have fun!

POINTS -->	100% - 90%	89% - 80%	79% - 70%
<b>PROJECT PART</b>			
<b>Research (10 points)</b>	<ul style="list-style-type: none"> <li>- Information is all correct</li> <li>- Reliable sources used</li> <li>- Bibliography is correct in form and information</li> <li>- Many facts from both personal and scientific life</li> </ul>	<ul style="list-style-type: none"> <li>- Almost all information is correct</li> <li>- Reliable sources used</li> <li>- Bibliography is mostly correct in form, all correct in information</li> <li>- Some facts from both personal and scientific life</li> </ul>	<ul style="list-style-type: none"> <li>- Most information is correct</li> <li>- Most sources were reliable</li> <li>- Bibliography is partly correct</li> <li>- Facts from one part of the scientist's life</li> </ul>
<b>Rough Draft (24 points)</b>	<ul style="list-style-type: none"> <li>- All paragraphs are completed</li> <li>- Paragraphs are very well written</li> <li>- Bibliography is all correct</li> <li>- Speech is written in the first person</li> </ul>	<ul style="list-style-type: none"> <li>- All paragraphs are complete</li> <li>- Paragraphs are well written</li> <li>- Bibliography is mostly correct in form, all correct in information</li> <li>- Speech is written in the first person</li> </ul>	<ul style="list-style-type: none"> <li>- Most paragraphs are complete</li> <li>- Paragraphs need improvement</li> <li>- Bibliography is partly correct</li> <li>- Speech may not be written in the first person</li> </ul>
POINTS -->	100% - 90%	89% - 80%	79% - 70%
PROJECT PART			

<b>Final Speech (24 points)</b>	<ul style="list-style-type: none"> <li>- Speech flows very smoothly</li> <li>- Paragraphs are very well written</li> <li>- Sources from the bibliography are well explained</li> <li>- Grammar is all correct according to the scientist</li> </ul>	<ul style="list-style-type: none"> <li>- Speech flows smoothly</li> <li>- Paragraphs are well written</li> <li>- Sources from the bibliography are explained</li> <li>- Grammar is mostly correct</li> </ul>	<ul style="list-style-type: none"> <li>- Speech is choppy, skips from topic to topic</li> <li>- Paragraphs need work</li> <li>- Sources from the bibliography are not mentioned</li> <li>- Grammar is sometimes correct</li> </ul>
<b>Presentation (10 points)</b>	<ul style="list-style-type: none"> <li>- Appropriate costumes are worn or speech, gestures, and props of the scientist are used</li> <li>- Student looks audience in the eyes very often</li> <li>-Speaks loudly and clearly through the entire speech</li> </ul>	<ul style="list-style-type: none"> <li>- Appropriate costumes are worn</li> <li>- Student looks audience in the eyes often</li> <li>- Speaks loudly and clearly for most of the speech</li> </ul>	<ul style="list-style-type: none"> <li>- Student looks audience in the eyes occasionally</li> <li>- For parts of the speech, speaks loudly and clearly</li> </ul>
<b>Self-Evaluation (10 points)</b>	<ul style="list-style-type: none"> <li>- Honest evaluation of research, presentation, and speech</li> </ul>	<ul style="list-style-type: none"> <li>- Some evaluation of research, presentation, and speech</li> </ul>	<ul style="list-style-type: none"> <li>- Little evaluation of research, presentation, and speech</li> </ul>



Subject/Period Science- Name \_\_\_\_\_

Assignment Explorer Project Research Date \_\_\_\_\_

**Here are some of the requirements and suggestions for the Explorer Project.  
Please read the directions carefully and ask if you have any questions!**

There are many important explorers in the world of science. For this project, you will be giving a speech about one of those scientists. This speech will be a little different from other speeches because you will actually be acting, dressing, and speaking how you think that scientist does or did! The entire class will be holding a conference where these famous scientists will be discussing their latest discoveries. To help you prepare for this important meeting, please answer the questions below.

1. The first step in this project is to choose a science explorer. Please check out the attached list of scientists and decide which one you would like to learn more about. Write the name of the scientist below.

\_\_\_\_\_

2. Now you need to research the life of your explorer. Record facts such as her or his birth place, family, where he or she went to school, any hobbies he or she may have, etc. Don't forget to write down where you got your information. If you have more information than will fit here, you are welcome to continue on a separate piece of looseleaf. **YOU MAY ALSO PHOTOCOPY INFORMATION AND STAPLE IT TO THESE SHEETS BUT DON'T FORGET TO WRITE DOWN WHERE YOU THE INFORMATION IS FROM!** See the attached bibliography for the information you need. Complete the bibliography section at the end of these sheets including a symbol for the source. Make sure to use that symbol next to the information you get from your sources.

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2. (cont.) \_\_\_\_\_

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3. Once you have written about her or his personal life, please research the person's most important contributions to science. Remember, you will be presenting this information in class so make sure you write down all the facts about what she or he did. Please fill out the bibliography if the source is new and use your symbols to explain where you got each piece of information from.

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3. (cont.) \_\_\_\_\_



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4. In case you came across any other cool information, here is space to write down any other facts you discovered.

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5. Please fill in this information using your bibliography sheets.

Bibliography: \_\_\_\_\_

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Bibliography: \_\_\_\_\_

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Bibliography: \_\_\_\_\_

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**POSSIBLE SCIENCE EXPLORERS**

**-OVER-**

**Here is a list of possible scientists for the project. Next to each name is the topic which that person studied. You may choose any name from the list below or you may choose any other scientist as long as you get him or her okayed by Ms. L. first.**

Rosalind Franklin - DNA  
Barbara McClintock - genetics  
James Watson - DNA  
Maria Goeppert Mayer - atomic elements (atomic bombs)  
Francis Crick - DNA  
Gerty Radnitz Cori - biochemistry  
Marie Curie - radioactivity  
Dian Fossey - gorillas  
Jane Goodall - chimpanzees  
Alfred Wallace - evolution  
Eugenie Clark - sharks  
Jonas Salk - polio viruses  
Hans Zaccharias Jannsen - microscopes  
Anton von Leewenhoek - microscopes  
Charles Darwin - evolution  
Francesco Redi - Spontaneous Generation  
Edward Jenner - cowpox viruses  
Louis Pasteur - bacteria  
Robert Brown - plants  
Rachel Carson - ecology and the environment  
Robert Hooke - microscopes  
Matthias Schleiden - cells  
Theodor Schwann - cells  
Carl von Linne - classification of organisms  
Dorothy Crowfoot Hodgkin - the structure of vitamins  
Thomas Huxley - evolution  
Mary Anning - paleontology (fossils)  
Sally Ride - astronaut  
Jewel Plummer Cobb - cells  
Mary Leakey - paleontology (fossils)

Subject/Period \_\_\_\_\_ Name \_\_\_\_\_

Assignment Explorer Project Rough Draft Date \_\_\_\_\_

**Here is an easy way to organize your rough draft for the Explorer Project. Make sure you use your Explorer Project Research Worksheet with all of your information. Also remember that your speech must be in the first person- you must write it as though you actually were the scientist. Please see Ms. L. if you have any questions. Have fun and be creative!**

Introduction: (This should include the name of your scientists and the area of science she or he studied.) Example: Hi, my name is Nicole Lazor and I love to teach seventh grade life science! I have been teaching for four years now and I would like to tell you a little bit about my job and why I enjoy science so much.

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Background Paragraph: (The details of your explorer's life that do not relate to what they did in science.) \_\_\_\_\_

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Science Paragraph (What did your science explorer accomplish in his or her field?)

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Fourth Paragraph (Any other neat facts about your scientists that don't fit into the other paragraphs.)

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Conclusion: (Review the points you have covered and sum up the project.) \_\_\_\_\_

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Bibliography: (Where did you get your information?)

First source: \_\_\_\_\_

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Second Source: \_\_\_\_\_

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Third Source: \_\_\_\_\_

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Props or costumes: (How did your scientist dress, talk, work with?) \_\_\_\_\_

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Subject/Period \_\_\_\_\_

Name \_\_\_\_\_

Assignment Explorer Presentation

Date \_\_\_\_\_



### EXPLORER PRESENTATION GRADING SHEET

#### Parts of the Speech

\_\_\_\_\_ Introduction

5                    4                    3                    2                    1

Appropriate Introduction

Inappropriate

\_\_\_\_\_ Background Paragraph on the Explorers' Life

5                    4                    3                    2                    1

Good Information

Poor Information

\_\_\_\_\_ Paragraph on the Explorer's Work in Science

5                    4                    3                    2                    1

Nice Explanations

Poor Explanations

\_\_\_\_\_ Conclusion

5                    4                    3                    2                    1

Very Appropriate

Inappropriate

\_\_\_\_\_ Bibliography

4                    3    2    1

Perfect Format

No Format

\_\_\_\_\_ **Speech Total out of 24 Points**  
**The Presentation**

\_\_\_\_\_ Props, costumes, gestures, and/or accent used

3

2

1

Excellent Props and Costumes

Inappropriate Props

\_\_\_\_\_ Speaks clearly and loudly

3

2

1

Great Speaking

Poor Speaking

\_\_\_\_\_ Eye Contact

2

1

Good Eye Contact with Audience

Little Eye Contact

\_\_\_\_\_ Use of Written Speech

2

1

Appropriate Use of Written Speech    Inappropriate Use of Speech

\_\_\_\_\_ **Presentation Total out of 10 Points**

\_\_\_\_\_ **Total Explorer Final Speech and Presentation out of 34 Points. Please see Ms. L. if you have any questions!**

**Comments:**

Subject/Period \_\_\_\_\_

Name \_\_\_\_\_

Assignment Explorer Presentation

Date \_\_\_\_\_

### EXPLORER PROJECT SELF EVALUATION

\_\_\_\_\_ Effort on Written Project

3

2

1

Excellent Effort on the Written Project

Little Effort

\_\_\_\_\_ Effort on Speaking Project

3

2

1

Excellent Effort on the Speaking Project

Little Effort

\_\_\_\_\_ Creativity

2

1

Great Creativity

Little Creativity

\_\_\_\_\_ Organization

2

1

Great Organization

Little Organization

\_\_\_\_\_ **Self Evaluation Total out of 10 Points**

**Comments:**



**SCIENTISTS QUESTIONS LESSON PLAN**  
**PERIODS 2, 3, 6, 8, and 9**

**Name:** Nicole Pasquariello Lazor

**Subject:** Science 7

**Date:** //00

**File Name:** scientistquestionslp

**Unit Title:** Introductory Unit

**Lesson Title:** Scientists Questions

**Lesson Objective:** Students will create queries to pose to the scientists they meet

**List of Daily Activities:** 1. Brainstorm questions  
2. Create scientist questionnaire

**Announcements:**

**Homework to Assign:** Scientist Questionnaire

**Homework to Collect:**

**Warm Up:** Please write down three things you would like to ask a scientist related to their work.

<b>TIME</b>	<b>ACTIVITIES</b>	<b>MATERIALS</b>	<b>OBJECTIVES</b>
20 min.	Go over the warm up. Write down all valid questions on the board.	Board	Students will consider information the scientists can provide them with about their future goals.
15 min.	Ask students to create their individualized questionnaire for a scientist. Make sure they include the scientist they would like to interview.	Handout (File: scientistquestho)	Students will finalize ideas about what to ask the scientists.

Subject/Period Science- Name \_\_\_\_\_

Assignment Scientist Questionnaire Date \_\_\_\_\_

Here is a place to organize your ideas for your interview with a scientist.  
Please complete the directions below and have fun!

**1. First you must decide which scientist you would like to interview. Choose from the list below and make sure to check with Ms. L. that no one else in your group is interviewing that scientist.**

Dr. Maura Weathers, X-Ray Diffraction  
Mr. John Hunt, Electron and Optical Microscopy Facility  
Dr. Peter Revesz, Ion Beam Analytical Facility  
Mr. Michael Skvarla, Cornell Nanofabrication Facility  
Mr. Alex Deyhim, Electronic Packaging  
Dr. Kenan Unlu, Ward Center for Nuclear Sciences  
Mr. Ken Finkelstein, Cornell High Energy Synchrotron Source  
Dr. William Miller, Cornell Veterinary College  
Mr. Mick Thomas, Ultra High Vacuum Scanning Transmission Electron  
Microscope Facility



**Your Choice of Interviewee:** \_\_\_\_\_

**2. Please list five questions that you would like to ask a scientist. Also include the reasons why you would like to information about each question.**

First Question:

Reason you would like to ask this question:

Second Question:

Reason you would like to ask this question:

Third Question:

Reason you would like to ask this question:

Fourth Question:

Reason you would like to ask this question:

Fifth Question:

Reason you would like to ask this question:

**3. Now please list the two questions you would like to ask your scientist.  
This is also where you will be recording her or his answer to your question.**

First Question:

Answer:

Second Question:

Answer:



# Field Trip Information

- ◆ There are 12 groups total. All groups are nine to ten students with one chaperone (110 students total, 12 chaperones)
- ◆ Students must dress appropriately both days- sneakers and rain gear, just in case!
- ◆ Students must bring a bag lunch both days.
- ◆ The bus will leave Lansing Middle School at 8:00 a.m. and return at 2:00 p.m. both days.

## Field Trip Schedule

	8:30-9:00	9:15-9:45	10:00-10:30	10:45-11:15	11:30-12:00	12:15-12:45	1:00-1:30	8:30-9:00	9:15-9:45	10:00-10:30	10:45-11:15	11:30-12:00	12:15-12:45	1:00-1:30
X-ray Diffraction Facility; Snee Hall	A	C	B	EAT	D	F	E	G	I	H	EAT	J	L	K
Electron and Optical Microscopy Facility; Bard Hall	B	A	C	EAT	E	D	F	H	G	I	EAT	K	J	L
Ion Beam Analytical Facility; Bard Hall	C	B	A	EAT	F	E	D	I	H	G	EAT	L	K	J
Lunch	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
CNF; Knight Lab	D	F	E	EAT	A	C	B	J	L	K	EAT	G	I	H
Electronic Packaging; Kimball Hall	E	D	F	EAT	B	A	C	K	J	L	EAT	H	G	I
Ward Center for Nuclear Sciences; Ward Hall	F	E	D	EAT	C	B	A	L	K	J	EAT	I	H	G
CHESS	G	I	H	EAT	J	L	K	A	C	B	EAT	D	F	E
Veterinary Hospital	H	G	I	EAT	K	J	L	B	A	C	EAT	E	D	F
Cornell Plantations	I	H	G	EAT	L	K	J	C	B	A	EAT	F	E	D
Lunch	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
Greenhouses	J	L	K	EAT	G	I	H	D	F	E	EAT	A	C	B
UHV-STEM; Clark Hall	K	J	L	EAT	H	G	I	E	D	F	EAT	B	A	C
Johnson	L	K	J	EAT	I	H	G	F	E	D	EAT	C	B	A