

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.

TIME	ACTIVITIES	MATERIALS	OBJECTIVES
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:

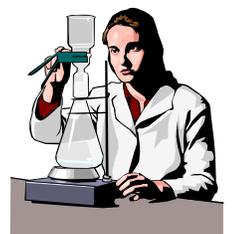
Two skills needed for that career:

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

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



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.

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

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

Bibliography: _____

Bibliography: _____

Bibliography: _____

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.

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

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

Bibliography: (Where did you get your information?)

First source: _____

Second Source: _____

Third Source: _____

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

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.

TIME	ACTIVITIES	MATERIALS	OBJECTIVES
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