Reading Passages

Scientists and Astronauts

American women have made significant contributions in many fields of science and they have become very important leaders in the exploration of space.

Maria Mitchell (1818–1889)

Maria Mitchell was born on the island of Nantucket in Massachusetts. She attended schools on the island and became very interested in studying the stars, a pursuit encouraged by her father. By the time she was 16, Maria had worked as a teacher and opened her own school. Later, she worked in a local library during the day so that she could study the sky at night. In 1846 Maria discovered the orbit of an unknown comet. The discovery earned her respect in the European and American scientific communities.

Maria became the first woman elected to the American Academy of Arts and Sciences in 1848. Years later, a group of civic-minded American women gave her a large telescope to use in her studies. Maria became the director of the observatory and a popular and influential professor of astronomy at the newly created Vassar Female College in 1865. She studied the planets with her students for 23 years before she retired in 1888.

Margaret Mead (1901–1978)

Margaret Mead was born in Philadelphia and graduated with her Ph.D. degree in anthropology from Columbia University in 1929. She made a celebrated trip to Samoa in 1925 where she spent two years observing the development of native children and adolescents. She published *Coming of Age in Samoa* in 1928, a book that challenged American concepts about child rearing and which introduced the science of cultural anthropology to a wider audience.

In later works, Margaret contrasted growth and development among several primitive societies in New Guinea and the western Pacific, as well as among Native Americans. She also wrote books on American culture, cultural changes in societies, and sexual development. She became a widely read and highly respected social critic. Mead worked at several universities and was associated with national and international societies devoted to mental health, science, and anthropology.

Reading Passages

Scientists and Astronauts *(cont.)*

Grace Murray Hopper (1906–1992)

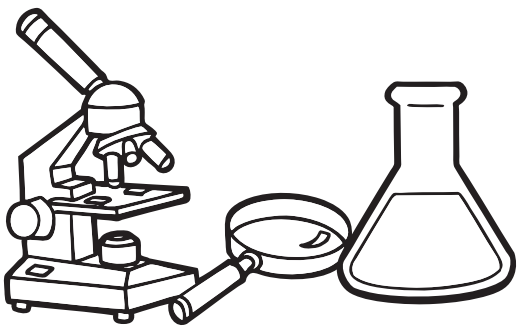
Grace Murray was born in New York City and strongly encouraged by her parents to acquire an education. She graduated from Vassar College and obtained her Ph.D. in math from Yale University in the 1930s. She married Vincent Hopper in 1930, but different interests led to a divorce in 1945. She taught math at Vassar until World War II when she volunteered for the WAVES, women commissioned as officers by the Navy. She worked for the Navy at Harvard University on a Mark I computer, the earliest type of computer. The work involved determining exact firing trajectories for large guns on ships. She once found a moth interrupting the flow of information in a computer. She is said to have coined the term "bug" to describe the faulty operation of a computer.

After the war, Grace worked at Harvard developing the first compiler, a device which translates instructions into short codes which a computer reads. She helped develop COBAL, a widely used simplified computer language using English commands. Grace retired from the Navy Reserve in 1966, but returned to active duty to oversee the coordination of Navy computer systems. She became the first woman rear admiral in the Navy before her retirement in 1986 after 43 years of service. Grace Hopper wrote more than 50 articles about computing and was considered to have a problem-solving mind and a blunt style.

Rachel Carson (1907–1964)

Rachel Carson was born in Pennsylvania and attended the Pennsylvania College for Women with a major in biology. She received an M.A. in biology from Johns Hopkins University and taught for five years at the University of Maryland. She became an aquatic biologist for the U.S. Bureau of Fisheries from 1936 until 1952 where she used her writing skills and scientific knowledge in government publications and fieldwork. She wrote her first book in 1941. Carson's second book, *The Sea Around Us*, became a best seller in 1951. She published *The Edge of the Sea* in 1955.

Carson provoked a stream of controversy with her last book, *Silent Spring*, published in 1962. This best seller took on the issue of the agricultural use of pesticides and herbicides. She catalogued the misuse of these chemicals and the effects they had on humans and on ecosystems. The book provoked a storm of controversy and was widely criticized by agriculture and chemical companies, which had a vested interest in the products. President Kennedy read the book and supported its conclusions. Rachel didn't live to see the governmental controls imposed on the use of these chemicals before she died of cancer.



Scientists and Astronauts *(cont.)*

Sally Ride (1951–present)

Sally Ride was born in Los Angeles, California, where she was a high school tennis star. She graduated with degrees in English and physics from Stanford University. Sally received her Ph.D. in physics at Stanford and entered the astronaut program in 1978. She became a Shuttle Mission Specialist and was the first American woman to fly into space in June of 1983. Sally Ride made a second space flight in 1984. Her scheduled third flight was canceled because of the *Challenger* explosion in 1986. She worked on the presidential commission appointed to determine the cause of the disaster. Later, she worked on strategic planning for NASA and in 1987 returned to Stanford as an instructor. She became a professor of physics and head of the Space Science Institute at UC San Diego in 1987. Sally Ride spent 337 hours in space. She is an author and travels the country speaking at science-based conferences.

Christa McAuliffe (1948-1986)

Christa McAuliffe was the first teacher and the first private citizen to go into space. She graduated from Farmington State College in Massachusetts and received an M.A. in education from Bowie State College in Maryland. Married and the mother of two children, Christa taught in several junior high and high schools in the Northeast. She was teaching American law, history, economics, and a course on The American Woman at Concord Senior High School when she was chosen out of a group of 10,000 applicants to be the first teacher in space.

Christa went through rigorous training for the mission and planned to do science experiments on board the shuttle. She kept a record of her training and activities for the time after her flight when she would travel throughout the nation promoting the importance of teachers, technology, and space exploration. After several delays, the *Challenger* was launched on January 28, 1986. It exploded 73 seconds into the flight while millions watched on television. An inquiry into the explosion pointed out serious flaws in NASA's safety record and delayed future missions for two years. Christa's influence helped make spaceflight a goal for many young women.

Mae Jemison (1956–present)

Mae Jemison is a brilliant doctor who became the first African-American woman to go into space. She has a degree in chemical engineering and strong interests in art, dance, and theater. She received a medical degree from Cornell University and served in the Peace Corps in West Africa and with the National Institutes of Health on several research projects aimed at the treatment of infectious diseases. Mae completed her astronaut training in 1988 and made her maiden space flight in 1992.

Dr. Jemison left NASA in 1993 and went on to teach at Dartmouth. She also established the Jemison Group, a firm that researches, develops, and markets advanced technologies.

Scientists and Astronauts Quiz

Directions: Read pages 20–22 about American women scientists and astronauts. Answer these questions based on the information in the selection. Circle the correct answer for each question below.

1. Which of the following scientific occupations did Maria Mitchell pursue?
- **a.** astronaut
- **b.** astronomy
- **c.** anthropology
- **d.** biology

2. Which book was not written by Rachel Carson?
- **a.** *Silent Spring*
- **b.** *The Sea Around Us*
- **c.** *Coming of Age in Samoa*
- **d.** *The Edge of the Sea*

3. Which of these scientific accomplishments are credited to Grace Hopper?
- **a.** first woman in space
- **b.** discovered a comet
- **c.** developed computers
- **d.** studied native peoples

4. What does an anthropologist study?
- **a.** stars and planets
- **b.** human development
- **c.** motion
- **d.** living organisms

5. Which of these accomplishments is not credited to Mae Jemison?
- **a.** studied comets
- **b.** Peace Corps volunteer
- **c.** medical doctor
- **d.** first African-American female astronaut

6. What computer-related term did Grace Hopper invent?
- **a.** Internet
- **b.** web
- **c.** bug
- **d.** spam

7. How long did Sally Ride spend in space?
- **a.** 73 seconds
- **b.** 10,000 minutes
- **c.** 337 hours
- **d.** 43 years

8. Which of the following instruments would be in an observatory?
- **a.** microscope
- **b.** telescope
- **c.** stethoscope
- **d.** X-ray machine

9. Which of the following women did not travel into space?
- **a.** Maria Mitchell
- **b.** Mae Jemison
- **c.** Sally Ride
- **d.** Christa McAuliffe

10. What is a pesticide used for?
- **a.** to kill cattle
- **b.** to kill plants
- **c.** to kill germs
- **d.** to kill insects

Answer Key

Page 34

1.	c	6.	d
2.	c	7.	c
3.	d	8.	c
4.	a	9.	a
5.	b	10.	d

Page 35

1.	d	6.	d
2.	d	7.	c
3.	a	8.	c
4.	a	9.	b
5.	c	10.	b

Page 36

1.	c	6.	d
2.	d	7.	b
3.	c	8.	c
4.	b	9.	d
5.	c	10.	b

Page 37

1.	c	6.	b
2.	a	7.	b
3.	b	8.	d
4.	d	9.	b
5.	c	10.	b

Page 38

1.	b	6.	c
2.	c	7.	c
3.	c	8.	b
4.	b	9.	a
5.	a	10.	d

Page 39

1.	c	6.	a
2.	b	7.	a
3.	d	8.	d
4.	c	9.	d
5.	c	10.	b

Page 40

1.	b	6.	c
2.	d	7.	d
3.	a	8.	b
4.	c	9.	a
5.	d	10.	a

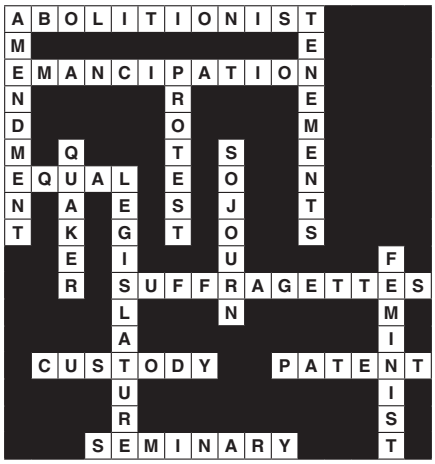
Page 41

1.	a	6.	d
2.	c	7.	a
3.	b	8.	c
4.	b	9.	b
5.	d	10.	d

Page 50

1. suffragettes; suffrage
2. reformers (or activists)
3. Amendment
4. spiritualist; candidate
5. Quaker; abolition; emancipation
6. freedom marcher; voters' rights
7. seminary
8. temperance
9. insane asylums
10. Convention; legislatures

Page 52



Across

1. abolitionist
3. emancipation
7. equal
10. suffragettes
11. custody
12. patent
13. seminary

Down

1. amendment
2. tenements
4. protest
5. Quaker
6. sojourn
8. legislature
9. feminist

Page 55

1. List the rhyming words of each stanza.

1st stanza-	Lord	stored	sword
2nd stanza-	camps	damps	lamps
3rd stanza-	steel	deal	heel
4th stanza-	retreat	judgement-seat	feet
5th stanza-	sea	me	free

2. What pattern can you find?

The words ending the second, fourth, and sixth lines in each stanza rhyme.

3. Does every end word in a stanza have a rhyming partner?

No—only the end of the second, fourth, and sixth lines rhyme.

Page 56

1. **Verse:** "They have builded him an alter in the evening dews and damps…" *is compared* to the night camps and watch fires of the soldiers as if they were preparing an alter for God as they get ready to fight.
2. **Verse:** "He is trampling out the vintage where the grapes of wrath are stored…" *is compared to* the act of God making wine by crushing the grapes (of righteous anger) with his feet as He and the soldiers will crush the enemy.

Find this simile.

"As we deal with my contemners, so with you My grace shall deal…" *is comparing* the actions of the soldiers with the enemy with the power and grace of God in dealing with the soldiers.

"America the Beautiful"

Write the rhyming words from each stanza.

1st stanza	skies	majesties	(visual)
	grain	plain	(sound)
2nd stanza (Chorus)	thee	sea	(sound)
3rd stanza	feet	beat	(sound)
	stress	wilderness	(sound)
4th stanza (Chorus)	flaw	law	(sound)
5th stanza	proved	loved	(visual)
	strife	life	(sound)
6th stanza (Chorus)	refine	divine	(sound)
7th stanza	dream	gleam	(sound)
	years	tears	(sound)
8th stanza (Chorus)	thee	sea	(sound)

Note: Rhyme may be either oral (sound) such as dream and gleam or visual (sight) such as skies and majesties.

Page 79

1. Sarah Edmonds
2. Mother Jones
3. Jeannette Rankin
4. Margaret Bourke-White
5. Margaret Corbin
6. Sybil Ludington
7. Lucretia Mott
8. Belle Boyd
9. Mother Ann Lee
10. Mary Jemison
11. Elizabeth Cochrane
12. Mary Ann Bickerdyke