Name _____ Reading informational text

A Creative Scientist Takes a Swipe at Cancer

Choose Science!

What do rock stars and scientists have in common? According to Dr. Catriona Jamieson, a scientist at the University of California-San Diego, the answer is creativity. She and her team of researchers put their creative thinking to work as they try to find better treatments for blood cancers and bone marrow disorders.

Dr. Jamieson specializes in *myeloproliferative disorders* (MPDs) and leukemia, a type of blood cancer. MPDs are degenerative disorders. In a *degenerative* disorder, the body or part of the body becomes weaker or less able to function as time passes. The body of someone with an MPD produces too many blood cells. This can lead to *myeloproliferative neoplasms*, a group of blood cancers that produce too many white blood cells, red blood cells, and/or platelets. There are treatments available to patients, but these treatments have serious side effects and patients can become resistant to them.

Looking for Options

To help find better ways to treat these problems, Dr. Jamieson studies two special types of cells in the neoplasms: mutant stem cells and progenitor cells. These cells can cause your body to produce cancer stem cells. A patient's cancer stem cells can be sneaky. They can hide to escape chemotherapy, which is drug treatment used against diseases like cancer. These cancer stem cells can then activate again later and cause the patient's leukemia to get worse or become resistant to treatment. Dr. Jamieson's team works on detecting cancer stem cells and ridding the body of the ones that can cause a treated patient's cancer to return.

As busy as Dr. Jamieson is with her research, she also makes time to mentor others, including 20 scientists in her lab. (A *mentor* is someone who teaches, helps, and gives advice to a less experienced and often younger person.) Dr. Jamieson thinks mentoring is important for her to do because it has been critical to her success as a scientist. One of her own mentors "always encouraged me to pursue difficult scientific questions and translate discoveries whenever possible to the clinic." She advises other women interested in a career in science to "surround yourself with people who support you." That's good advice from a talented scientist who is determined to make leukemia a thing of the past.

Strive for Excellence

Dr. Ann Mullally is a physician-scientist who works with patients at Dana-Farber Cancer Institute. She also runs a research lab based at Brigham and Women's Hospital in Boston, Massachusetts, where she and her team study the cells and genes that cause blood cancers. Like Dr. Jamieson, Dr. Mullally focuses her research on myeloproliferative neoplasms, working to "understand the earliest steps in cancer development and, most importantly, to come up with new and better ways to treat these cancers." What does Dr. Mullally find most exciting about her work as a scientist? "It's very exciting and immensely gratifying to use a series of experiments to work out some aspect of biology that wasn't previously understood." She also loves it when discoveries made in her lab positively affect the patients she works with. Her advice to other women who work in science is simple: "Believe in yourself. Strive for excellence in everything you do. Take risks professionally. Spend time with people who make you laugh. And, above all, keep going!"

Answer the questions in your own words. Use the back if you need more space.

1. What happens to the body of someone with a degenerative disorder like MPD? _____

   _____

2. How do myeloproliferative neoplasms harm the body? _____

   _____

3. Why does the author of this article describe cancer stem cells as sneaky? _____

   _____

4. List the vocabulary word in each paragraph that matches the meaning.

   A. Paragraph 2: work _____

   B. Paragraph 2: not harmed or affected by something _____

   C. Paragraph 3: to cause a natural process or chemical reaction to begin _____

   D. Paragraph 3: discovering or noticing the presence of _____

   E. Paragraph 4: to lead to something as a result _____

5. At the end of the paragraph about Dr. Ann Mullally, this scientist gives five pieces of advice to other women in science. Which piece of advice do you think is the most important for a girl who is interested in a science career ? Explain why._____

   _____

   _____

   _____

Learning in the Lab

Dr. Mullally says that having mentors has been instrumental in her career in science: "I've been fortunate to have had exceptional mentors, both men and women, at every stage of my career development. I am a mentor to the members of my lab...and I take this responsibility very seriously. I am also a mentor to junior colleagues, many of whom are women. Getting to the top of the ladder is undoubtedly important, but equally vital is helping those that follow and join you on the ladder to rapidly ascend it too!"

"A Creative Scientist Takes a Swipe at Cancer"

Answer Key

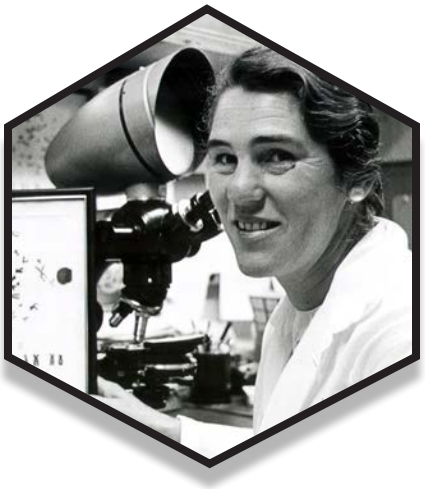
1. The body or part of it becomes weaker and less able to function over time.
2. They cause the body to produce too many white blood cells, red blood cells, and/or platelets.
3. These cells can hide from chemotherapy and later cause a patient's leukemia to get worse or become resistant to treatment.
4. A. function
   B. resistant
   C. activate
   D. detecting
   E. translate
5. Answers will vary.

Name _____ Reading informational text

She Asked, "What If. . . ?"

Choose Science!

As she leaned over her dining room table, Dr. Janet Davison Rowley warned her four young sons not to sneeze. The table was covered with minuscule pieces of photos she had taken in her lab. Each piece showed a single human chromosome. Now it was time to see if Dr. Rowley could find anything unusual about the pictures.



Why was this busy scientist, wife, and mother poring over tiny photos of chromosomes? Dr. Rowley had a theory—a radical one. Could there be a connection between the chromosomes of cancer patients and inherited diseases? She was determined to find out, driven by a passion for science that had begun years ago.

On the Fast Track

As an elementary school student, Dr. Rowley became fascinated by science. She was particularly fond of *binomial nomenclature*, the orderly system used to classify plants and animals. Dr. Rowley's parents were both educators who shared their only child's love of learning and encouraged her to excel in school. And excel she did. At the age of just 15, Dr. Rowley received a scholarship to study at the University of Chicago. Four years later she earned a philosophy degree. Two years after that she graduated with a second degree in science. Not finished yet, Dr. Rowley then entered medical school; she had just turned 20. She married a fellow doctor the day after she graduated and then worked part-time for the next 20 years while raising four sons.

Dr. Rowley began her medical career taking care of mentally handicapped children. Later, she worked at a lab at the University of Chicago researching the genetic changes in the chromosomes of leukemia and lymphoma patients. At the time, the accepted theory was that these diseases damaged normal chromosomes. Dr. Rowley had another thought: what if instead of the disease causing a chromosome to become abnormal, an abnormal chromosome causes the disease? She got to work testing her theory.

A Dining-Room-Table Discovery

After using a chemical technique that made human chromosomes easier to distinguish from one another, Dr. Rowley photographed the chromosomes of leukemia patients. She cut each chromosome out of the photos. Then she laid out the tiny pieces on her table and began to study the chromosomes to see if she saw anything unusual. And she did! Dr. Rowley discovered that a piece of a chromosome called the Philadelphia chromosome had broken off and attached itself to chromosome 9. (This transfer is known as a *translocation*.) Dr. Rowley also noticed a translocation between chromosomes 8 and 21 in another type of leukemia. This discovery proved her theory that damaged chromosomes caused specific diseases.

At first, some scientists resisted Dr. Rowley's findings. But by 1990, over 70 translocations had been identified for different cancers. Dr. Rowley's work led to the development of new and more effective drug therapies for treating blood cancers like leukemia and lymphoma. One of these drugs, Gleevec, is one of the most successful cancer therapies ever. Because of Dr. Rowley's persistent research, blood cancers that were once fatal could now be treated on an outpatient basis using targeted drugs.

Dr. Rowley once said, "Cancer can be cured if we work hard enough." Her determination to test her radical theory moved the world one big step closer toward making leukemia and lymphoma a thing of the past.

Waiting Game

When Dr. Rowley was accepted to medical school, the university had a quota of three women in a class of 65 students. Unfortunately the female quota had been filled, so Dr. Rowley had to wait nine months before she could start. But she didn't let this obstacle stop her. Dr. Rowley still started medical school right after she turned 20 years old.

Answer the questions in your own words. Use the back if you need more space.

1. What was Dr. Rowley's theory? _____

_____

2. What was the accepted theory about the chromosomes of leukemia and lymphoma patients? _____

_____

3. In your own words, explain what happens in a translocation. _____

_____

4. List the vocabulary word in each paragraph that matches the meaning.

   A. Paragraph 1: extremely small _____

   B. Paragraph 2: very different from the usual or traditional _____

   C. Paragraph 4: of, involving, or relating to genes _____

   D. Paragraph 6: fought against or tried to stop _____

   E. Paragraph 6: not requiring an overnight stay in a hospital _____

5. Pretend you are Dr. Rowley. Write a response to the medical school explaining why you do or do not think it is fair that the school won't let you start classes yet because you are a woman. _____

_____

_____

_____

Always Active

If you think Dr. Rowley spent all her time in a lab, you're mistaken. This multi-talented scientist knew how to work hard and enjoy life at the same time. Dr. Rowley not only loved science, but was also a devoted mother and wife who regularly spent time gardening, swimming, cycling, sailing, and skiing. In fact, she was active well into her 80s, still riding her bike every day to work—even in the snow!

"She Asked, 'What If. . . ?'"

Answer Key

1. She wondered if abnormal chromosomes caused leukemia and lymphoma instead of the diseases causing abnormal chromosomes.
2. The accepted theory was that leukemia and lymphoma damaged chromosomes.
3. A translocation happens when part of one chromosome breaks off and attaches itself to another chromosome.
4. A. minuscule
   B. radical
   C. genetic
   D. resisted
   E. outpatient
5. Answers will vary.

Name _____ Reading informational text

Cancer Fighter Extraordinaire

Choose Science!

When the family car starts to make a funny noise, the average car owner is likely to head to an auto mechanic who can fix the problem. Auto mechanics get a lot of training on how the parts of a car work so that they can diagnose problems. Without this understanding, a mechanic can't fix the screeching, rattling or clicking noise your car is making.

Dr. Katherine Borden, who works at the University of Montreal in Canada, is a bit like an auto mechanic. She and her team of scientists hope to develop new ways to treat the blood cancer leukemia. Before they can do that, though, they have to first understand how leukemia cells work and how normal cells become transformed into cancer.

Old Drug, New Use

Dr. Borden and her team have started by taking a close look at a protein called eIF4E. This research led them to consider using an older drug called Ribavirin in a new cancer therapy. This antiviral drug was developed in the 1970s. It has been used in the treatment of respiratory infections, hepatitis C, and other illnesses. Dr. Borden wondered if it could possibly be used to help fight AML, or acute myeloid leukemia. AML is a very destructive form of cancer. So she tested her theory with patients who had AML. The results were exciting. Nine of the patients improved in just a few months. Some saw a significant drop in the number of leukemia cells in their bodies. Others went into remission. (Remission is when the symptoms of the cancer are much less severe.) One patient was even well enough to go scuba diving in Florida! As an added plus, the patients did not suffer from the dangerous and harsh side effects that are common when treating the cancer with chemotherapy and radiation. Dr. Borden and her team's next move was to see if they could get even better results by combining Ribavirin with a standard chemotherapy drug. These efforts by Dr. Borden and her colleagues have one goal in mind: a world that no longer includes leukemia.

Positive Impact on Patients

Doing research to help cancer patients is a career Dr. Borden loves. She says, "I am so lucky to have such a great job. Understanding the biochemistry of how cells work is fascinating." She is also excited to have the chance to make a positive impact on patients' lives. Though she has faced some obstacles as a woman in science, Dr. Borden is proud of herself and other female scientists. "We have the opportunity to shape the future," she says. She tells girls who are interested in a science career that "determination is important as well as standing up for yourself." And to all kids who are thinking of becoming scientists, she has these words of encouragement: "You can be the first person in the entire world to discover something that might change how patients are treated."

In the Stars

Why did Dr. Borden choose a career in science? As a child, she knew she wanted to become a scientist when she watched the original *Star Trek* television series. In this show, a character named Mr. Spock used science to save the universe (more than once!). Now she is busy saving the lives of patients who are facing leukemia.

Answer the questions in your own words. Use the back if you need more space.

1. How is Dr. Borden's work similar to that of an auto mechanic?_____

_____

_____

2. What is Ribavirin, and how did Dr. Borden use it in her research?_____

_____

_____

3. What were the results of Dr. Borden's use of Ribavirin with people who had acute myeloid leukemia?

_____

_____

4. List the vocabulary word in each paragraph that matches the meaning.

   A. Paragraph 2: completely changed _____

   B. Paragraph 3: directed against viruses _____

   C. Paragraph 3: of or related to breathing or the organs used for breathing _____

   D. Paragraph 3: large enough to be noticed or to have an effect _____

   E. Paragraph 3: fellow workers _____

5. How do you think a mentor can be helpful to someone who is just starting out in a career?

_____

_____

_____

_____

Solid Support

Dr. Borden says she owes much of her success in science to people who have mentored her. A mentor is someone who teaches, helps, and gives advice to a less experienced and often younger person. Dr. Borden's mentors supported her work and helped her through many of the ups and downs of her career. Today, Dr. Borden mentors people in her lab. She says of mentoring, "It is a fulfilling way to pay the support I received forward."

"Cancer Fighter Extraordinaire"

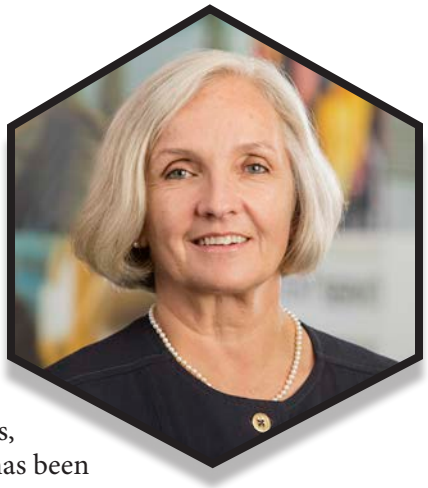
Answer Key

1. An auto mechanic can't fix a car problem without an understanding of how the parts of a car work. Dr. Borden can't cure cancer unless she understands how leukemia cells work and how normal cells become transformed into cancer.
2. Ribavirin is an older drug that is used to treat respiratory infections, hepatitis C, and other illnesses. Dr. Borden gave it to patients with acute myeloid leukemia.
3. Some patients improved within months and others had fewer leukemia cells in their bodies. Others went into remission.
4. A. transformed
   B. antiviral
   C. respiratory
   D. significant
   E. colleagues
5. Answers will vary.

Science Is Their Thing

Choose Science!

If you know a woman in a science career, she has probably faced a few obstacles along the way. That hasn't stopped these two physician-scientists from pursuing their passion for science.



Biology Class Beginnings

Dr. Gwen Nichols knew she wanted to become a doctor and researcher in biology class. Her teacher helped her see how what she was learning in class connected to the world around her. Dr. Nichols particularly liked the idea of seeing a question and then finding answers for it.

Dr. Nichols worked as both a physician taking care of cancer patients and a researcher looking to develop new cancer therapies. She describes research as basically understanding how things work, whether you're talking about the human body, animals, chemicals, or anything in nature. She says that the best part of her career as a scientist has been the opportunity to help other people: "It's wonderful to know that you are able to contribute to making the world a better place. Even if your contribution seems small, it makes you want to keep working to find answers."

Today, Dr. Nichols serves as the Chief Medical Officer for The Leukemia & Lymphoma Society, where she oversees LLS's scientific research projects, services for patients, and policy and advocacy programs. She encourages students who are interested in a science career to try to see how science is everywhere—in sports, in how your TV or computer functions, in the trees outside your house, and in your own body when you get sick and when you get better. She says, 'People who think science is boring don't know science! It's a really exciting field and has so many different ways to use your own personal strengths to make a difference. It's very creative—and there is no one right path to become a scientist. Follow your passion." That's definitely what Dr. Nichols did and is still doing today.

"Why Wait?"

Dr. Irene Ghobrial has an important question: "Why wait?" She is a physician-scientist who does research at the Dana-Farber Cancer Institute. Her work centers on a condition called *multiple myeloma*. In this disease, cancer cells accumulate in the bone marrow, where they crowd out healthy blood cells. These cancer cells produce abnormal proteins that can cause a patient to develop leukemia.

A patient who has been diagnosed with multiple myeloma may not show any early signs or have symptoms of the disease. The standard practice for a patient like this has been to send him or her home and not do any treatments until leukemia actually develops. Dr. Ghobrial believes that this practice made sense years ago when treatments that were effective were also harmful to a patient's body. Today, though, much-less-toxic treatments are available. So Dr. Ghobrial has been asking, "Why wait to start treating myeloma patients?" She and her team of researchers are trying to find out if treating myeloma patients earlier, before leukemia develops, can make a difference in their survival.

Dr. Ghobrial is proud to be a woman in science today: "I can make a difference in making life better for other people." She advises other women, "Don't hold yourself back. You can achieve anything you want to do and dream big."

Answer the questions in your own words. Use the back if you need more space.

1. How did a biology teacher motivate Dr. Nichols to pursue a career in science? _____

   _____

2. How do you know that Dr. Nichols likes being a scientist? Use evidence from the text to support your answer.

   _____

   _____

3. Why does Dr. Ghobrial think it makes sense today to treat patients with multiple myeloma early? _____

   _____

4. List the vocabulary word in each paragraph that matches the meaning.

   A. Paragraph 1: things that get in the way of progress or achievement _____

   B. Paragraph 4: supervises _____

   C. Paragraph 4: act or process of supporting a cause or proposal _____

   D. Paragraph 5: to increase gradually in amount as time passes _____

   E. Paragraph 6: containing poisonous substances _____

5. What personal qualities do you think scientists like Dr. Nichols and Dr. Ghobrial have that have helped them overcome obstacles in their careers? Which of the qualities is most important? Why? _____

   _____

   _____

About LLS

The Leukemia & Lymphoma Society (LLS) is the world's largest voluntary health agency dedicated to blood cancer. The LLS mission: Cure leukemia, lymphoma, Hodgkin's disease, and myeloma, and improve the quality of life of patients and their families. LLS funds lifesaving blood cancer research around the world and provides free information and support services.

"Science Is Their Thing"

Answer Key

1. The teacher made her see how what she was learning in the class was connected to the world around her.
2. Answers will vary.
3. Dr. Ghobrial thinks early treatment might keep people from developing leukemia, and cancer treatments today aren't as toxic for patients.
4. A. obstacles
   B. oversees
   C. advocacy
   D. accumulate
   E. toxic
5. Answers will vary.

Name _____ Reading informational text

Teaching T Cells to Attack

Choose Science!

When Dr. Rayne H. Rouce started medical school, she had no idea that one day she would be doing research on how to use the body's immune system to attack cancer cells. Years later, there's nothing else this determined doctor and researcher would rather do.

First a Volunteer

Dr. Rouce is a pediatric hematologist/oncologist. Hematology is the study and treatment of diseases that are related to the blood. Dr. Rouce works with infants, toddlers, children, adolescents, and teenagers who are facing leukemia or lymphoma. She spends most of her time trying to find new ways to treat these blood cancers.

Dr. Rouce's journey toward a career in science began when something happened that changed her life. That "something" was an opportunity she had to volunteer as a counselor at a camp for young cancer patients and their families. It sparked an interest in helping sick kids like her campers. She made up her mind to help people with cancer years later when she had to say goodbye to her first patient with refractory leukemia. (A person with refractory leukemia still has some leukemia cells in his or her bone marrow even after intensive treatments.) At that moment, "I knew that I would never be satisfied until we find a cure. I realized I needed to dedicate my career to fighting leukemia and lymphoma, as both a doctor and a scientist."

Now a Physician-Scientist

Today Dr. Rouce is a physician-scientist. She spends 75% of her time researching innovative ways to teach a patient's immune system cells—specifically T cells—to target and kill their own leukemia cells and viruses in the blood. This type of treatment, called *immunotherapy*, often isn't as hard on the body as radiation and chemotherapy, which can cause dangerous side effects like heart or lung problems. Dr. Rouce explains her work in this way: "I get to study in the laboratory the very mechanisms by which my patient's tumor cells learn to outsmart immune system cells." She loves that she can use what she learns through her research to treat her patients with "supercharged immune cells my colleagues and I have 'souped up' in the laboratory," she says. Through her research, Dr. Rouce and other cancer researchers can develop new ways to stop leukemia and lymphoma in its tracks and give patients a fighting chance.

Still a Volunteer

As busy as Dr. Rouce is with her patients and research, she continues to make time for volunteering. For example, she still helps provide week-long summer camps for young cancer patients and their families. In 2017, she and some friends even worked together to help people in Houston who were stranded by the heavy flooding brought on by Hurricane Harvey. They used social media and a special app to connect people stranded in flooded homes with rescue teams. The result: over 50 people were rescued.

Many people would call Dr. Rouce an inspiration. Yet she insists, "I am inspired by my patients and their families. As a pediatric oncologist, I see innocent kiddos take on monumental tasks with unimaginable resilience. If they don't give up, how can I?"

Superheroes of Research

According to recent research, fewer than 30% of the world's researchers are women. Dr. Rouce praises the strong, brilliant female scientists she has worked with: "I literally feel like I am surrounded by research superheroes, so I strive to inspire other women to put on their capes as well!" She encourages girls who are interested in science not to be intimidated.

Answer the questions in your own words. Use the back if you need more space.

1. What does a pediatric hematologist/oncologist do? _____

   _____

2. What happened that caused Dr. Rouce's determination to dedicate herself to finding a cure for leukemia and lymphoma? _____

   _____

3. According to paragraph 4, what is immunotherapy and how is it different from radiation and chemotherapy?

   _____

   _____

4. List the vocabulary word in each paragraph that matches the meaning.

   A. Paragraph 4: introducing or using new methods _____

   B. Paragraph 4: process or system that is used to produce a particular result _____

   C. Paragraph 5: left in a place without a way of escaping it _____

   D. Paragraph 6: very great or extreme _____

   E. Paragraph 6: ability to become strong, successful, or healthy again after something bad happens

      _____

5. What is your opinion about volunteering? Is it important to volunteer your time to help others? Why or why not? _____

   _____

   _____

   _____

Dedication and Drive

What would Dr. Rouce say to young students to encourage them to consider science as a career? "Never take your eye off the prize, whether the prize is to be a doctor or a scientist or a science teacher: the reward of getting up every day and helping people is indescribable, and will make up for every obstacle or sleepless night."

"Teaching T Cells to Attack"

Answer Key

1. A pediatric hematologist/oncologist treats infants, toddlers, children, adolescents, and teenagers who have a blood cancer like leukemia or lymphoma.
2. She lost her first patient with refractory leukemia.
3. Immunotherapy is therapy that uses a patient's own immune system cells to target and kill leukemia cells and viruses in the blood. Often it isn't as hard on the body as chemotherapy and radiation.
4. A. innovative
   B. mechanism
   C. stranded
   D. monumental or unimaginable
   E. resilience
5. Answers will vary.

Name _____ Reading informational text

From Ice Cream Scooper to Scientist

Choose Science!

As a teenager, Dr. Wendy Stock worked for four summers at an ice cream stand that had no air conditioning. For only $1.00 per hour, she served up ice cream cones and banana splits. Years later, she worked an extremely long shift at a hospital as a medical intern, and her legs ached terribly that night. Dr. Stock realized she had experienced that feeling before, during her ice cream scooping days: "It suddenly hit me: it was the same ache from standing in that tiny, cramped booth for eight to ten hours a day."

Dr. Stock's first job was a far cry from the career she has today as a hematologist at the University of Chicago. A *hematologist* is a physician who specializes in diagnosing and treating diseases of the blood. She treats patients with leukemia and special cancers called *myelodysplastic syndromes,* or MDS. In MDS, some of the blood-forming cells in the body's bone marrow are abnormal. The MDS in some patients can progress to a serious form of leukemia called *acute myeloid leukemia*, or AML. Dr. Stock and her team of researchers work on trying to understand how these types of leukemia develop. They hope to learn how to use their research to design clinical trials, or tests, that will help to improve treatments for patients.

Career Surprise

Did Dr. Stock always know she wanted to go into medicine? Nope. In fact, she says, "I never even liked going to the doctor; I would cry every time." As she grew up, she thought she wanted to be a biologist, like scientist Jane Goodall, who studied wild chimpanzees in Tanzania, Africa. One thing she did know early on was that she wanted to be challenged and do something meaningful—and she is. Dr. Stock says that the best parts of her busy days are "when I can deliver good news, or when patients five to 10 years out [past their diagnosis or treatment] come in to say hello, or when I get a letter from a patient who is thriving." She also says, "I love working with patients, who teach me so much about courage, generosity, and grace. They are the motivation for my research."

It has not always been easy to be a woman in science, and Dr. Stock has experienced challenges. She advises girls who want to pursue a science career to "do what you love and work hard. The passion that you have for the work will ultimately be the driver of success." Dr. Stock's career in science has been helped along the way by both male and female mentors. A *mentor* is someone who teaches, helps, and gives advice to a less experienced and often younger person. One of her mentors was sometimes very tough and demanding, but she says that what he taught her about treating people with leukemia was invaluable. Dr. Stock now says that the mentoring she does with younger colleagues, students, and others is "among the greatest joys of my career."

What advice does Dr. Stock have for younger people who are interested in science as a career? "The most important thing is to find your passion and pursue it. Stay open to new ideas and new opportunities. Sometimes, incredible things come up that completely change the way you think about things."

Power of the Team

When Dr. Stock worked as a teenager selling ice cream, she learned that she loved working with other people. That same spirit of collaboration and working together is part of what she finds so important in her career: "What you realize in medicine is you can't do it alone—you need a team." A world traveler who has met people from all around the globe, Dr. Stock says, "What I've learned is that, no matter where we are from, we are all trying to solve the same problems—how to make our patients' lives better."

Answer the questions in your own words. Use the back if you need more space.

1. What does Dr. Stock do as a hematologist?_____

   _____

2. What can happen to a patient who has MDS?_____

   _____

3. What are Dr. Stock and her team trying to learn through their research? _____

   _____

4. List the vocabulary word in each paragraph that matches the meaning.

   A. Paragraph 2: recognizing a disease or illness by examining someone _____

   B. Paragraph 2: different from what is normal or average _____

   C. Paragraph 2: to develop over time _____

   D. Paragraph 2: of or relating to medical treatment that is given to patients in hospitals, clinics, etc.

   _____

   E. Paragraph 4: someone or something that provides motivation or impulse _____

5. Do you agree with Dr. Stock that having a passion for the work you do will lead to success? Why or why not? _____

   _____

   _____

   _____

Many Talents

Dr. Stock thinks it is important to "try to make time for yourself." She lives out her own advice by pursuing many interests outside her career. She plays the violin in a small community orchestra. She loves to read and has been a member of a book group for years. She also loves to cook because "it takes my mind off of things, it makes me happy, and it makes other people happy, too." Dr. Stock is even fluent in French and Spanish.

"From Ice Cream Scooper to Scientist"

Answer Key

1. She diagnoses and treats diseases of the blood.
2. The MDS can progress to acute myeloid leukemia.
3. They are trying to understand how MDS and AML develop so they can improve treatments for patients.
4. A. diagnosing
   B. abnormal
   C. progress
   D. clinical
   E. driver
5. Answers will vary.