

## Twins Luck

1. Mateo was ten and had a twin brother named Marcos. They did not look much alike. Marcos was short, with wide hands and thin hair, like an old man. He couldn't speak and could walk only by dragging his left foot behind him. He never got far. When they went out, he used a wheelchair.
2. At times, while he was getting ready for school and while his father and mother were getting Marcos ready for the day, Mateo wondered what it would be like to be Marcos.
3. They would bathe him and dress him. They would put him in a soft chair in front of the television. Then his father would leave for work and his mother would feed him a soft-boiled egg or a bowl of corn mush. She would put a bell at his side in case he needed anything. All his needs would be taken care of by someone else.
4. Mateo wondered how the two of them, who started out together, had wound up so different. Was it luck? Why wasn't life fair? When he was younger, he thought that Marcos was the lucky one, getting so much attention when he had to do things for himself. Mateo's parents never seemed to have time for him. Mateo never got to stay home and watch cartoons all day. Then one day, it hit him. The idea surprised him because he couldn't see how he hadn't realized it before. Marcos wasn't as lucky as Mateo thought.

### Twins take part in RST Study to look at effects of space on body

- 1 Have you ever wondered what happens to the human body when it's in space for a long time? Based on Hollywood movies, men and women who go to space always seem to be fine when they land back on Earth. Are astronauts so lucky in the real world? NASA made it its mission to find out. NASA is the U.S. space agency.
  - 2 Scientists published a groundbreaking new DNA study. It was published in the April 12 issue of the journal Science. The study compared the epigenomes of two twin brothers.
  - 3 The genome is one's complete set of genetic material. Genes are made up of DNA, which contains the instructions for how each part of the body works. Genes are passed on from parents to children. The epigenome is the record of chemical changes to DNA.
  - 4 Changes in a person's epigenome do not change the genome. They simply turn certain genes "on" or "off." Epigenetic changes happen in natural parts of life, like getting older. They also happen when one has a disease like cancer. When epigenetic changes happen at the wrong time, it can cause problems.
- No Major, Long-Term Differences**
- 5 The new study compared astronaut Scott Kelly and his twin brother Mark Kelly. It revealed that after a year in space, Scott experienced no major, long-term differences to his epigenome compared to his twin. Mark stayed firmly planted on Earth while Scott was in space.

6 The scientists behind the study say the conclusions are not entirely clear yet. It appears additional study on the genomes of astronauts in space could be helpful, though. It could predict what kinds of health issues each astronaut may be at risk for.

7 Putting your body in space has many dangers. Astronauts are exposed to many things in space. It means limited food and exercise and different sleep cycles. It could lead to many other problems we do not know about yet. Scientists say it's important to understand the effects space travel has on the human body. It will be even more important for longer missions, like going to Mars.

8 A major advantage of this new study is the fact that its subjects are twins. They naturally have the same genetic material. The twins offer a rare chance to test whether long-term genetic changes could happen in space.

9 The scientists are quick to admit the study was too small, though, and more testing is needed. They only studied two people. They will need to study many more astronauts to learn more.

#### **How Did Samples Get To Earth? In A Rocket!**

10 The study involved collecting blood samples and data about the body and mental health. Measurements were taken from each Kelly twin. The data was collected at various points over a 27-month period. It was collected before, during and after Scott's one-year space mission. If you are wondering how in the world Scott's samples reached the scientists from space, they were transported by a rocket. Yes, seriously.

11 In the future, scientists hope to study and store samples onboard the International Space Station itself. For the purposes of this study, though, samples were rocketed back to Earth and studied within 48 hours. Then the scientists examined the brothers' genomes. They looked for epigenetic changes.

12 Generally speaking, there were just about as many epigenetic changes in Scott as there were in his twin. The biggest difference was observed nine months into Scott's space mission. There were changes near genes that handle immune system response. The immune system protects the body from diseases. The scientists believe these changes were because Scott had signs of inflammation. This is a normal response when the body is hurt or sick and needs to heal.

13 Lindsay Rizzardi is a scientist at the HudsonAlpha Institute for Biotechnology in Alabama. She said it was encouraging to see that there were no big changes of the epigenome in either Mark or Scott. The study was too small to draw big conclusions about how space affects the genome, she said. The study was helpful, though. Scientists know what to look at more closely in future studies of astronauts, she said.

1. In the story The Twin's Luck, When Mateo was younger, he thought that his brother Marcos was the lucky one because he received so much attention. What can we infer about how Mateo feels about Marcos by the end of the story?

Shade in the circle to select your answer.

- ☐ A. Mateo is not as lucky as Marcos.
- ☐ B. Marcos and Mateo are very similar, despite their differences.
- ☐ C. Marcos is luckier than Mateo thought.
- ☐ D. Marcos isn't as lucky as Mateo thought.

2. Which of the following would be the best antonym for advantage?

Shade in the circle to select your answer.

- ☐ A. Interest      ☐ B. Drawback      ☐ C. Improvement      ☐ D. Favor

3. Based on The Twin's Luck, what can be concluded about Marcos's condition?

Shade in the circle to select your answer.

- ☐ A. He is recovering from an illness
- ☐ B. He is able to move around freely
- ☐ C. He has a disability
- ☐ D. He has suffered an injury from a car accident

4. In the Twin's space study, what can the reader conclude about the results of the study?

Shade in the circle to select your answer.

- ☐ A. There were no major changes in their DNA
- ☐ B. The study did not have enough people to prove their hypothesis
- ☐ C. The results were inaccurate
- ☐ D. Major changes happened to the twin that was in space



5. According to **The Twins Space Study** article, how is the astronaut's health more at risk in space than on earth? Choose all that apply

Shade in the circle to select your answer.

- ☐ A Different Sleep Cycles
- ☐ B There is no difference
- ☐ C Limited food options
- ☐ D Limited ways to exercise

6. In The **Twin's Space Study**, the author mainly includes paragraph 8 to show

Shade in the circle to select your answer.

- ☐ A Why it is important the study is done in space
- ☐ B Why genetic material is important
- ☐ C The advantages of using twins in the study
- ☐ D The difference between the twins

7. In a **Twin's Luck**, the author includes the following sentences mainly to help the reader understand that...

" Marcos was the lucky one, getting so much attention when he had to do things for himself. Mateo's parents never seemed to have time for him. Mateo never got to stay home and watch cartoons all day."

Shade in the circle to select your answer.

- ☐ A Marcos is jealous of Mateo
- ☐ B Mateo does not get attention from his parents
- ☐ C Marcos loves being home all the time
- ☐ D Mateo is jealous of his brother

Name \_\_\_\_\_

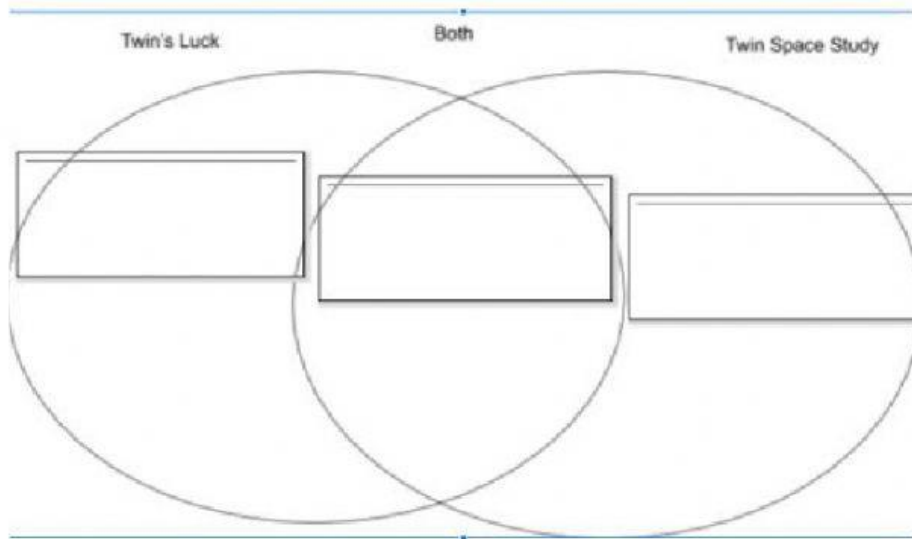
## Reading Assessment

8. The main difference between **The Twin's Luck** and **The Twin's Space study** is that.. Choose the two best answers

Shade in the circle to select your answer.

- ☐ A One set of twins are the same and the other set of twins are different
- ☐ B Both sets of twins are males
- ☐ C One set of twins are children and the other set of twins are adults
- ☐ D Both sets of twins are adults

9.



How are the two passages similar and different?

have twins	Is a scientific study about twins	are in space	The twins do not get along with each other
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10. Based on the information in **The Twin's Luck**, What can we conclude about how Marcos's Parents feel about him?

Shade in the circle to select your answer.

- ☐ A. They care very deeply about Marcos.
- ☐ B. They feel Marcos is overwhelming.
- ☐ C. They feel resentful towards Marcos
- ☐ D. They are unsure how to help him.