

## Grade 7 Informational

### Great Shrinking Lizards!

In the 1980s, a team of biologists began visiting the Galapagos Islands. The islands lie approximately 600 miles off the coast of Ecuador and are world-famous for their unusual animals. The scientists had come to study one of the strangest Galapagos animals, the marine iguana.

Marine iguanas are the only lizards on Earth that make their living from the ocean. They graze on algae in the intertidal zone—the part of the coastline that is covered and uncovered by ocean tides each day. Large iguanas even dive underwater to snatch algae off the sea floor. No other lizard survives in this way, and the biologists began visiting the Galapagos to learn about these startling reptiles.

Over the years, the scientists marked hundreds of iguanas. This allowed them to observe individual lizards over long periods of time. They also regularly caught the lizards to weigh and measure them. This helped the biologists track how different lizards grew and survived.

In the 1990s, the scientists continued catching and measuring the iguanas. When comparing their measurements between years, however, they got a whopping surprise. They found that many of the iguanas had stopped growing. Instead, the lizards had actually *shrunk*!

The scientists didn't believe it at first. They thought they had made a mistake. But this was no mistake. What the scientists observed was real. The iguanas had actually been shrinking. What was going on?

Dr. Martin Wikelski, who heads up the scientific team, believes that the iguanas had lost size because of a phenomenon called El Niño. El Niño is an unusual weather pattern that happens every few years. In El Niño years, the cold water that normally surrounds the Galapagos is replaced by much warmer water. When this happens, the algae that the iguanas eat die. They are replaced by other algae that the iguanas cannot digest. Thousands of iguanas starve to death, but some survive—including many that shrink.

During normal years, Dr. Wikelski observed that larger iguanas survive better than smaller ones. They get more food and are more successful at mating. During El Niño years, though, the opposite is true. When food is scarce, smaller iguanas survive better because they locate food and use their energy more efficiently.

What's amazing, though, is that shrinking iguanas don't just get skinnier. They grow shorter, too. Dr. Wikelski's team found that some iguanas lost more than a third of their weight and 20 percent of their length. The scientists believe that these iguanas actually began digesting some of their own bone material to grow shorter. When conditions improved, the iguanas

resumed eating and growing again. No other adult vertebrates—animals with backbones—have ever been found to shrink and regrow in this way. The scientists think that the shrinking is a unique adaptation that allows the iguanas to survive in an unpredictable environment.

Scientists continue to study marine iguanas to learn more about their behavior and adaptations. Dr. Wikelski believes that, with further study, other vertebrates will be found that can shrink and regrow like the marine iguanas do. If that's true, they will reinforce an important lesson about life on Earth—bigger is *not* always better.

## Grade 7 Narrative

### In the Spotlight

Samantha pushed her way closer to the bulletin board outside Mr. Kramer's room and then scanned down a list, searching for her name. Auditions for the school play had been held last week. Mr. Kramer, the head of the drama department, had said he would post the results today. Samantha had auditioned for the lead role, and she was anxiously waiting for the results of her audition. Now that the moment had finally arrived, Samantha was feeling agitated and exuberant at the same time.

"Did you get the role you wanted, Samantha?" asked Elaine, who had been Samantha's best friend since kindergarten.

At that precise moment, Samantha saw her name on the list and began shrieking and jumping up and down, which was all Elaine needed to answer her question. Obviously, Samantha had been cast in the lead role.

"I am astounded," said Samantha, as she pulled her backpack out of her locker and swung it onto her back. "I have the opportunity to be on stage in front of the whole school and friends and family." She laughed and added, "I can almost feel the heat of the spotlights and hear the thunder of applause already."

Samantha completely forgot about both the spotlights and the applause when rehearsals began. All she could contemplate were the 386 lines she had to memorize. She was still in shock about the overwhelming amount of lines she needed to commit to memory in a short period of time. When she had envisioned herself in the role, she had thought about her costumes, her gestures, her attitude, and even the review in the school newspaper; but somehow she had overlooked the fact that she would be responsible for learning the dialogue.

"How in the world am I going to memorize all of this material?" asked Samantha one night at the dinner table. "I keep reading the script over and over, but I am unable to retain any of my lines."

Samantha's parents looked at each other, but neither of them had a suggestion for Samantha other than to continue to do what she had already been doing every day: read the lines, recite the lines out loud, and attend rehearsal after school.

"I have an idea," proposed Paul, Samantha's younger brother. "I could help you practice your lines, Samantha. Your lines will be easier to recall if someone is reading the other parts of the play. At least, it seems like it would be a good solution."

"I like your idea," said Samantha. "You're right, it might be easier for me to memorize my part if someone reads the other actors' lines. The context of the dialogue will make my responses more meaningful. Thanks, Paul—let's try your suggestion tonight after dinner."

The first few times they practiced lines, Samantha encouraged Paul to speak louder and to add emotions to what he was saying, in an effort to portray the other actors. As days went by, Paul began to follow his sister's recommendations by projecting his voice and showing emotions when he was reading the lines.

After a few weeks, Paul began attending rehearsals with Samantha. Samantha appreciated Paul coming to practices, because if she forgot a line, Paul was able to cue her. Soon all the actors in the play knew Paul and asked if he would be willing to give prompts to the other members of the cast. Paul felt honored the cast had confidence in him. He accepted the offer, since he was already familiar with the entire script.

On opening night, Samantha's hands were trembling; it was difficult for her to put on her stage make-up. She tried to focus on her lines, but it was not easy.

"You will do a great job," Paul reassured her. "You know your lines. You have not missed a line for weeks. Just concentrate on your part and the dialogue of the other characters, and you will be fine."

Paul's prediction was right. Samantha did a phenomenal job in the lead role. She never missed a single line. She was ecstatic about the successful performance and hearing the audience's loud applause. At the end of the play, Samantha came on stage to take a bow. She was proud of what she had achieved in the past several weeks.

Mr. Kramer came on stage to thank the audience and the cast and to give recognition to others who had contributed to making the play a success. "I would like to extend a special thank you to Paul Martin," said Mr. Kramer. "I am positive that this play would not have been as successful without him. He spent numerous hours helping the members of our cast learn their lines," he added, gesturing for Paul to join him on stage.

Samantha wondered how Paul would react to the acknowledgement of his work. Would he say anything or would he be extremely nervous? To Samantha's amazement, Paul gave a bow and thanked Mr. Kramer for giving him the opportunity to be a part of the production.

Later, Paul whispered to Samantha, "Now I understand why you enjoy the spotlights and the applause so much." Samantha smiled to herself and thought that this play had been good for her and for Paul as well.