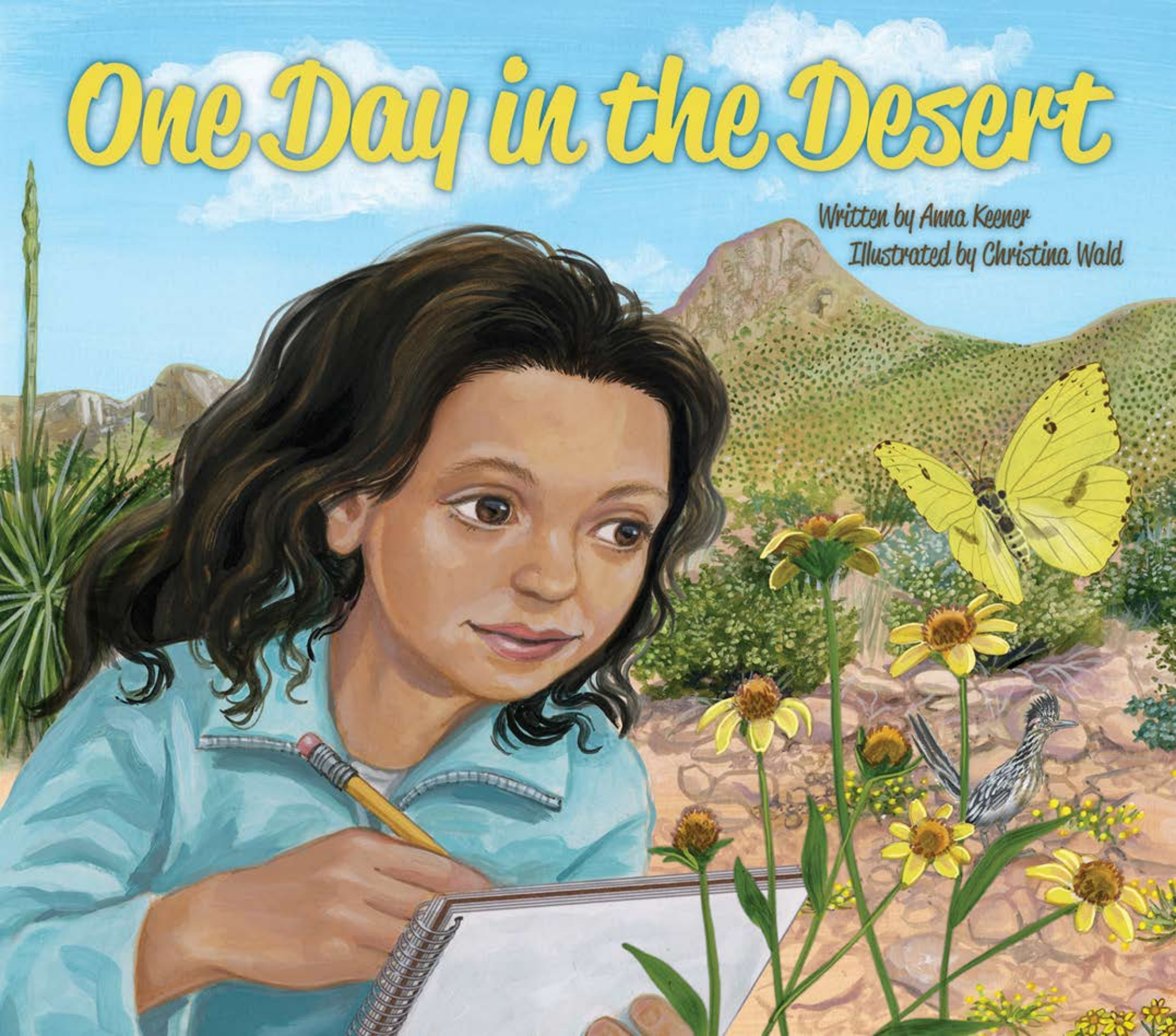
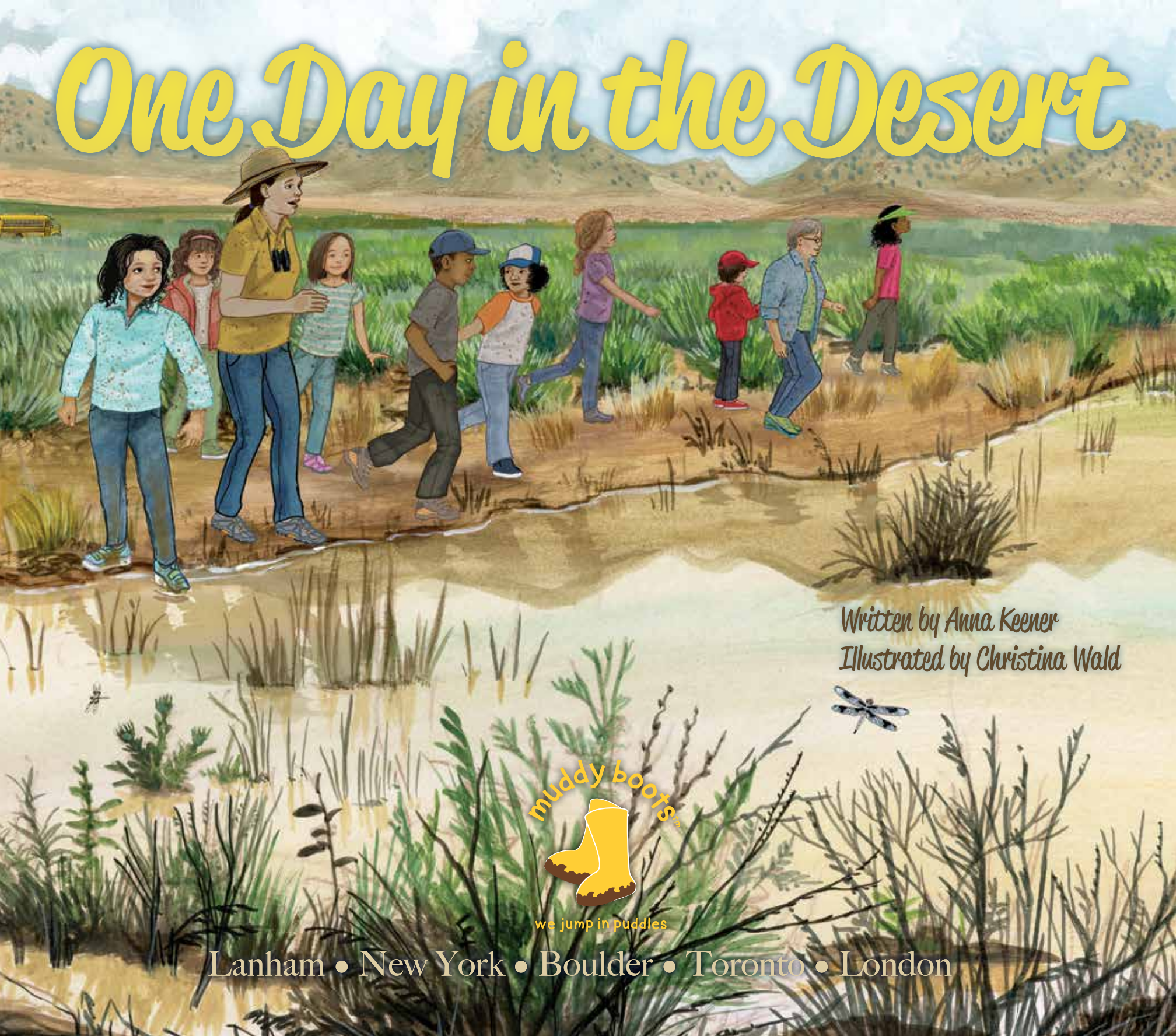
One Day in the Desert

Written by Anna Keener
Illustrated by Christina Wald



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Chihuahuan Desert

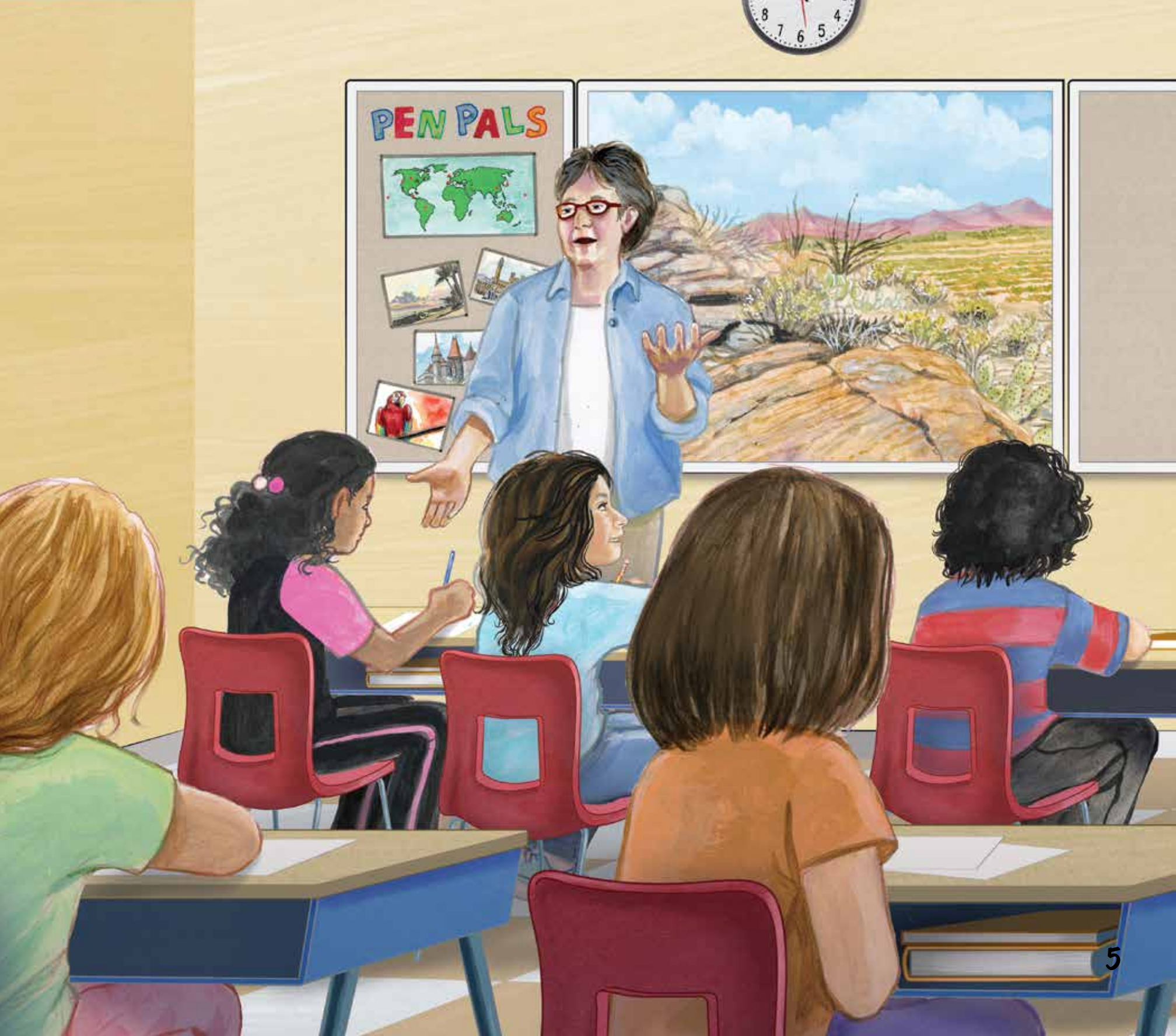
The Chihuahuan Desert covers parts of New Mexico, Arizona, Texas, and Mexico. It is a high-altitude desert that gets most of its average 9.5 inches of rainfall from July through September, the desert's monsoon season. Life in the desert relies on these rains and on using water from rivers like the Rio Grande, which are fed by melting mountain snowfall. Temperatures in the desert change dramatically from day to night and from season to season. The hottest temperatures in June are around 97 degrees Fahrenheit, and the coldest temperatures in January are at or below freezing.

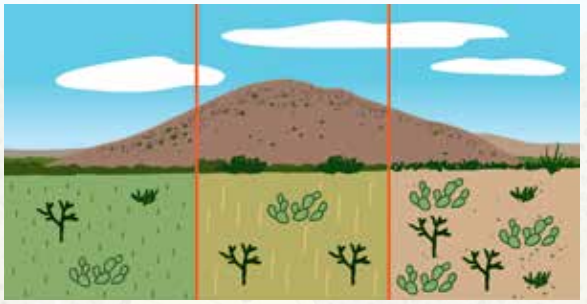
Mariana's teacher told the class about their upcoming field trip to the Chihuahuan Desert Nature Park. Mrs. Locke was always an animated talker, but today she merrily flung her arms over the projected photos from last year's trip. There were no houses or buildings in any of the photos—only the lonesome desert plains and mountains.

"We will go on a nature walk through the Chihuahuan Desert, all the way to the top of an extinct volcano," Mrs. Locke said. "We'll see the plant and animal life that is special to this desert."

The field trip to the desert didn't sound as exciting as a coral reef or a pine forest, but Mrs. Locke's enthusiasm gave Mariana hope. Maybe she would have something interesting to share when she wrote to her friends.




PEN PALS



Desert Changes Over Time

The Chihuahuan Desert looks very different now than it did 150 years ago. Today some areas that were once grasslands are mostly covered in shrubs (plants with woody stems). Other areas changed from shrubland to grassland. These shifts from one plant type to another are called state changes. Because the change in one type of plant leads to changes in other parts of the ecosystem—such as erosion of the topsoil that carries the nutrients plants need to grow—it is very difficult for the first type of plant to come back to that same area. Scientists can't always see these changes by watching the land because they happen too slowly. Scientists rely on data that past scientists have collected to tell them about how rainfall, temperature, and land cover have changed. These long-term data sets help scientists to understand how ranching, natural shifts in climate, and man-made climate change have all influenced state changes.



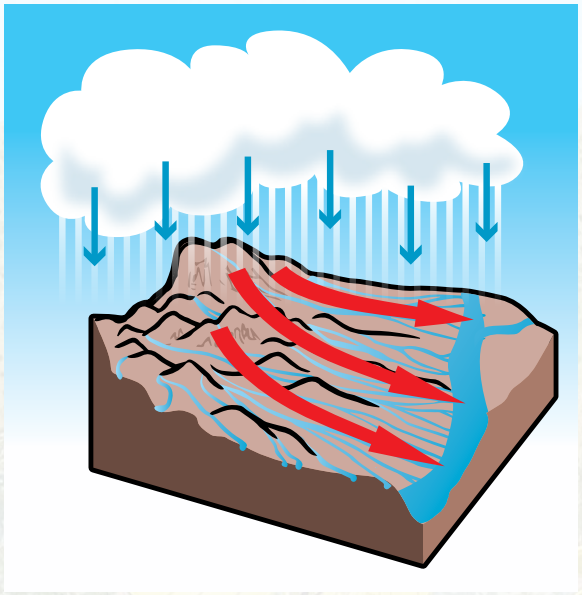
Mariana's class climbed the extinct volcano, and cloudless sulphur butterflies lifted from the shrubs as the arrived at the top. One landed on Mariana. She smiled, and noticed that the view from the top of the hill was similar to the one from the photo. She showed it to Dr. Garza, Mrs. Locke, and the class.

"This is a great example of an ecosystem that has shifted," said Dr. Garza. She explained how most of the land they could see used to be covered in grass, but now was mostly covered in shrubs, like creosote bush and mesquite. "The land is always changing," she said.



She helped Mariana find a small lemonscent flower, only one of three plants they could find growing on the hill this year. In years with more rain, like in the photograph, the hills would be covered in the sweet-smelling plant. Mrs. Locke took a group photo of them so that Mariana could show her family how much the valley had changed.





Water in the Desert

The Chihuahuan Desert Nature Park is located in a closed basin. All the water that falls in the valley stays there, seeps into the earth, and is stored in tiny spaces in the soil and rocks. This storage is known as an aquifer. Water from the surrounding mountains flows down through a system of arroyos. Arroyos are stream beds that are dry most of the time. Most of the rain that the desert gets comes in the late summer, during the North American monsoon season. When the monsoon rains arrive, the arroyos gush with fast-moving water for a short period during and after a rainstorm. A storm elsewhere can make an arroyo downstream fill with water in minutes, which means it's not safe to play in arroyos if there are approaching storms, even if it isn't raining where you are. The water from arroyos empties into playas (or ephemeral lakes) at the bottom of the basin.

The storm came with little warning. Wind kicked up sand that peppered Mariana's skin.

"Everyone back to the bus!" called Dr. Garza. Her voice was stolen by the wind. A curtain of gray rain fell from the clouds.

"Quickly, kids!" yelled Mrs. Locke.

They rushed back onto the bus as the rain began to plink against the roof, and then drum so loudly that the children could no longer hear each other talk. A fresh, clean smell filled the air.




SCHOOL BUS