Comprehension Passage Pack for Grade 4

This resource contains the full text of reading comprehension passages in Levels 16 through 18 of Lexia® Core5® Reading. This resource allows teachers to further scaffold comprehension instruction and activities for students.

The comprehension passages in Lexia Core5 Reading have been analyzed using a number of tools to determine complexity, including Lexile® measures. Based on this analysis, the comprehension passages are appropriately complex for students reading at the grade-level of skills in each program level. For example, the comprehension passages in Levels 16-18 (Grade 4 skills) typically fall within the range of Lexile measures deemed appropriate for on-level Grade 4 readers. (Texts with non-standard punctuation, such as poems and plays, are not measured.)

The Content Area Connection column in the table of contents can be used as a guide to determine the general topic of each passage. It does not indicate alignment to any specific content area standards.

Keywords in the passages are indicated in bold and defined in a glossary located at the end of the pack. The words are the same as those found in the online passages. While most terms are included to support word meaning, some terms are included because pronunciation may be challenging.
### Reading Comprehension Passages: Levels 16-18

<table>
<thead>
<tr>
<th>Passage Title</th>
<th>Genre</th>
<th>Content Area Connection</th>
<th>Lexile Measure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core5 Level 16</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Crowded House</td>
<td>Folktale</td>
<td>English Language Arts</td>
<td>760L</td>
<td>4</td>
</tr>
<tr>
<td>Tall Tale Heroes</td>
<td>Informational Text</td>
<td>English Language Arts</td>
<td>860L</td>
<td>6</td>
</tr>
<tr>
<td>The Proud Weaver: A Retelling of the Greek Myth of Arachne</td>
<td>Myth</td>
<td>English Language Arts</td>
<td>880L</td>
<td>8</td>
</tr>
<tr>
<td>Two Deserts</td>
<td>Informational Text</td>
<td>Earth &amp; Space Science</td>
<td>810L</td>
<td>10</td>
</tr>
<tr>
<td>Tropical Snow</td>
<td>Informational Text</td>
<td>Earth &amp; Space Science</td>
<td>740L</td>
<td>12</td>
</tr>
<tr>
<td>Flash Flood Rescue</td>
<td>Narrative Text</td>
<td>Earth &amp; Space Science</td>
<td>800L</td>
<td>14</td>
</tr>
<tr>
<td>Attack of the Spreading Plant</td>
<td>Informational Text</td>
<td>Life Science</td>
<td>850L</td>
<td>16</td>
</tr>
<tr>
<td>Potatoes and Tomatoes</td>
<td>Informational Text</td>
<td>Life Science</td>
<td>800L</td>
<td>18</td>
</tr>
<tr>
<td>A Special Kind of Bank</td>
<td>Informational Text</td>
<td>Life Science</td>
<td>830L</td>
<td>20</td>
</tr>
<tr>
<td>In Grandfather’s Day</td>
<td>Narrative Text</td>
<td>Social Studies</td>
<td>930L</td>
<td>22</td>
</tr>
<tr>
<td>Henry Ford’s Plan</td>
<td>Informational Text</td>
<td>Social Studies</td>
<td>740L</td>
<td>24</td>
</tr>
<tr>
<td>An Ice Idea</td>
<td>Narrative Text</td>
<td>Social Studies</td>
<td>800L</td>
<td>26</td>
</tr>
<tr>
<td>A Modern Day Dragon</td>
<td>Informational Text</td>
<td>Life Science</td>
<td>880L</td>
<td>28</td>
</tr>
<tr>
<td>Sniffing the World</td>
<td>Informational Text</td>
<td>Life Science</td>
<td>790L</td>
<td>30</td>
</tr>
<tr>
<td>The Hidden Hunter</td>
<td>Narrative Text</td>
<td>Life Science</td>
<td>810L</td>
<td>32</td>
</tr>
<tr>
<td>A Change of Heart</td>
<td>Narrative Text</td>
<td>Social-Emotional Learning</td>
<td>920L</td>
<td>34</td>
</tr>
<tr>
<td>Owen and Mzee</td>
<td>Informational Text</td>
<td>Social-Emotional Learning</td>
<td>760L</td>
<td>36</td>
</tr>
<tr>
<td>You Can’t Always Tell</td>
<td>Folktale</td>
<td>Social-Emotional Learning</td>
<td>800L</td>
<td>38</td>
</tr>
<tr>
<td><strong>Core5 Level 17</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal Fact, Animal Fiction</td>
<td>Informational Text</td>
<td>English Language Arts</td>
<td>890L</td>
<td>40</td>
</tr>
<tr>
<td>Expressions from the Ancients</td>
<td>Informational Text</td>
<td>English Language Arts</td>
<td>780L</td>
<td>42</td>
</tr>
<tr>
<td>Poincils</td>
<td>Narrative Text</td>
<td>English Language Arts</td>
<td>840L</td>
<td>44</td>
</tr>
<tr>
<td>Keystone Species</td>
<td>Informational Text</td>
<td>Life Science</td>
<td>790L</td>
<td>46</td>
</tr>
<tr>
<td>Saving the Rainforests of the Ocean</td>
<td>Informational Text</td>
<td>Life Science</td>
<td>810L</td>
<td>48</td>
</tr>
<tr>
<td>Rachel Carson</td>
<td>Informational Text</td>
<td>Life Science</td>
<td>780L</td>
<td>50</td>
</tr>
<tr>
<td>Lost on the Trail</td>
<td>Narrative Text</td>
<td>Life Science</td>
<td>880L</td>
<td>52</td>
</tr>
<tr>
<td>What Lester Heard</td>
<td>Narrative Text</td>
<td>Life Science</td>
<td>880L</td>
<td>54</td>
</tr>
<tr>
<td>Passage Title</td>
<td>Genre</td>
<td>Content Area Connection</td>
<td>Lexile Measure</td>
<td>Page</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------------</td>
<td>-----------------------------------</td>
<td>----------------</td>
<td>------</td>
</tr>
<tr>
<td>Taste Tests</td>
<td>Informational Text</td>
<td>Life Science</td>
<td>860L</td>
<td>56</td>
</tr>
<tr>
<td>The Great Blondin</td>
<td>Informational Text</td>
<td>Social-Emotional Learning</td>
<td>950L</td>
<td>58</td>
</tr>
<tr>
<td>The Boy with the Ball</td>
<td>Narrative Text</td>
<td>Social-Emotional Learning</td>
<td>800L</td>
<td>60</td>
</tr>
<tr>
<td>Talent Show Tryouts: A Skit in One Act</td>
<td>Drama</td>
<td>Social-Emotional Learning</td>
<td>NA</td>
<td>62</td>
</tr>
<tr>
<td>Rainbows</td>
<td>Informational Text</td>
<td>Physical Science</td>
<td>790L</td>
<td>65</td>
</tr>
<tr>
<td>Cellphone Signals</td>
<td>Narrative Text</td>
<td>Physical Science</td>
<td>790L</td>
<td>67</td>
</tr>
<tr>
<td>“City Lights” by Lee Bennett Hopkins</td>
<td>Poetry</td>
<td>Physical Science</td>
<td>NA</td>
<td>69</td>
</tr>
<tr>
<td>The Tarahumara People</td>
<td>Informational Text</td>
<td>Social Studies</td>
<td>930L</td>
<td>70</td>
</tr>
<tr>
<td>The Legend of the African Crowned Crane</td>
<td>Legend</td>
<td>Social Studies</td>
<td>810L</td>
<td>72</td>
</tr>
<tr>
<td>Cave Dwellings</td>
<td>Informational Text</td>
<td>Social Studies</td>
<td>880L</td>
<td>74</td>
</tr>
<tr>
<td><strong>Core5 Level 18</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flamingos in the Snow</td>
<td>Informational Text</td>
<td>Life Science</td>
<td>830L</td>
<td>76</td>
</tr>
<tr>
<td>Anansi and the Cook Pots, a tale from western Africa</td>
<td>Folktale</td>
<td>English Language Arts</td>
<td>840L</td>
<td>78</td>
</tr>
<tr>
<td>The Monkey and the Pea, a tale from India</td>
<td>Folktale</td>
<td>English Language Arts</td>
<td>890L</td>
<td>80</td>
</tr>
<tr>
<td>The Blizzard of 1888</td>
<td>Informational Text</td>
<td>Social Studies</td>
<td>880L</td>
<td>82</td>
</tr>
<tr>
<td>an excerpt from Under the Mambo Moon by Julia Durango</td>
<td>Poetry</td>
<td>Social Studies</td>
<td>840L</td>
<td>84</td>
</tr>
<tr>
<td>an excerpt from Under the Mambo Moon by Julia Durango</td>
<td>Poetry</td>
<td>Social Studies</td>
<td>840L</td>
<td>86</td>
</tr>
<tr>
<td>Glossary</td>
<td></td>
<td></td>
<td></td>
<td>88</td>
</tr>
</tbody>
</table>
THE CROWDED HOUSE: A Folktale

Long ago, eight members of the Rubin family lived in a little house that seemed terribly cramped and crowded. Papa, Mama, their four children, Aunt Gert, and Grandmother Rubin were always getting in each other’s way. They complained unhappily that one day they might burst right through the walls. So Papa and Mama went to the wisest man in the village, Reb Solman, to ask for advice.

Reb Solman stroked his beard thoughtfully as he listened. Then he said, “Yes, I can help you, but you must do exactly as I say, no questions asked.” Papa and Mama eagerly agreed.

“The first thing you must do,” Reb Solman told Mama, “is to invite your sister and her family to visit.”

“But, Reb Solman,” said Mama worriedly, “my sister and brother-in-law have three big sons, so how will five more people in our crowded house solve our problem?”

Reb Solman replied, “Remember, you promised to obey and ask no questions.”

So the five relatives arrived, and everyone was elbowing each other and tripping over feet, and the walls trembled as if about to explode. After several days, Papa ran back to Reb Solman and pleaded, “Oh, it is unbearably crowded and noisy now. Please, what should we do?”
Reb Solman said, “Bring your chickens, goat, and cow into the house.” Papa blinked hard when he heard that, but he had promised to obey, so he did as he was told.

A few days later, Papa returned to Reb Solman. In an exhausted voice, Papa said, “The noise, the smells, the crowding, the situation is impossible.”

Reb Solman said, “Send your relatives home, and put the animals outside.”

So the visitors left, and the animals went outside where they belonged. The eight members of the Rubin family breathed a big sigh of relief. “I never knew that our house could feel so big and spacious,” said Mama as she looked around.

“It certainly feels as if our house has grown bigger,” said Papa. “Reb Solman is a very wise man.” And everyone, smiling in agreement, relaxed in their remarkably roomy house.
Paul Bunyan was the most famous **lumberjack** in North America. He was **unusual** even from birth. As a baby, he had a black beard so thick his mother had to use a pine tree to comb it. He was so big that he caused an earthquake when he started to walk. When he grew up, way up, giant Paul took up **logging**. With just one swing of his ax, he could chop down ten strong pine trees. When he wanted to bring drinking water to his logging camp, he dug five holes. They became the Great Lakes.

Of course, Paul Bunyan was not a real person. He was a tall tale hero, a story **character** who could do impossible things that were presented as simple facts. Real lumberjacks may have enjoyed making up tall tales about Paul Bunyan just for fun or to impress each other with one amazing story after another. Stories about Paul Bunyan were first written down in the early 1900s.

The United States was a young and growing nation when the tall tale hero Johnny Appleseed appeared. People were heading west. They were clearing farmland and building towns. Storytellers described how Johnny Appleseed wandered through the country planting apple trees for newcomers to enjoy. Johnny Appleseed was a gentle fellow. He wore a tin pot for a hat and **ragged** clothes. He had bare feet, even in winter, and lived outdoors in the woods. Wild animals trusted him. One time, Johnny saved a wolf from a trap, and the wolf became his friend.
Unlike Paul Bunyan, Johnny Appleseed was based on a real person. A man named John Chapman really did plant apple trees for families **settling** in the Ohio River Valley. He really did live simply, owning few things. He told stories to people, and people told stories about him. The tales grew taller with retelling.

Paul Bunyan, Johnny Appleseed, the sailor Stormalong, and the tunnel builder John Henry—these and other tall tale heroes do remarkable things. Their stories are part of the American past and are still being told today.
Athena, goddess of wisdom, was a fierce warrior in battle, but in times of peace, she would teach the Greek people about art. One of her greatest skills was weaving, and her best student was a young woman named Arachne.

People came from far and wide to see Arachne’s incredible designs. They would watch her skilled fingers bring beautiful images to life.

“Her gifts come from Athena,” they would say.

This annoyed Arachne, and she would reply, “My gifts come from me. I need no goddess to make me a master weaver.”

Her boastings reached Athena’s ears, but instead of getting angry at the insult, Athena decided to give the girl a chance to take back her words. She disguised herself as an old woman and went to Arachne. “You seem to think you are as good a weaver as Athena, but you are not equal to the gods,” she said.

Arachne would not back down and responded, “If I had the chance, I could prove that I am!”

Athena threw off her disguise and accepted the challenge. And so a contest began, the two of them weaving side by side. Athena worked swiftly and surely, weaving breathtaking pictures of the gods and their wondrous acts. Arachne worked slowly, a stubborn look on her face. She wove pictures that showed the gods doing foolish things. Athena had to admit that Arachne’s
work was flawless, but what the pictures showed filled the goddess with anger. She tore Arachne’s work to pieces and destroyed her **loom** with the sweep of a hand.

Horrified, Arachne drew back. She saw that she had been a fool to challenge the gods. Her shame **overwhelmed** her so greatly that she began to go mad. Athena **took pity on** her and touched her forehead.

Immediately, Arachne felt herself shrinking and changing. Her thumbs disappeared, and her eight skillful fingers stretched into eight long legs.

“You have great gifts as a weaver, Arachne,” the goddess said. “As a spider, you shall put those gifts to work and weave amazing webs.”

And ever since, spiders have been called **arachnids**.
Great mounds of golden sand bake under a blazing sun. A line of camels is crossing these sand **dunes**. The people riding the camels are dressed to protect themselves from the heat and wind-blown sand. What is this place? It is the **Sahara** Desert, the largest desert in the world. It spreads across northern Africa.

The Sahara’s dunes may seem to stretch forever, but these “sand seas” cover only part of this **vast** desert. The Sahara also has flat, stony lands as well as mountains. In places, underground water rises to form springs where trees and plants grow. In these **oases**, farmers grow crops.

The Sahara is called a hot desert, but not all of it is hot year round. Still, the summer sun can roast the air. At one spot, the **temperature** once soared to a record-breaking 136 degrees F (58 degrees C).

All deserts are dry lands. The yearly rainfall in the Sahara is less than 10 inches (25 centimeters), and often is much less. Some places here get no rain for years. Yet the Sahara is not the driest desert in the world. That record belongs to the **Atacama** Desert of South America.

The Atacama lies between high mountains and the Pacific Ocean. The mountains stop **moist** air from reaching the desert land, and the cold ocean also acts to prevent rain. The yearly rainfall in the Atacama is less than .004 inches (.01 centimeters). Some spots have not had rain since record-keeping began 400 years ago! With soil this dry, no plants can grow.
Unlike the Sahara, the Atacama is a cool desert. There are few scorching summer days but on winter nights, the temperature is often below freezing.

The Sahara and the Atacama are both deserts. They are alike in some ways, and different in many others.
An imaginary line divides planet Earth halfway between the North and South poles. The line is called the equator, and it passes through regions called the tropics. In the tropics, the sun rises high in the sky. Tropical lands generally have warm to hot temperatures all year. People who live in the tropics never see snow. Almost never, that is.

The country of Tanzania (TAN-zuh-NEE-uh) lies in the tropics of eastern Africa. Along the coast of the Indian Ocean, the Tanzanian climate matches what the word tropical suggests: hot and humid. But in northern Tanzania, the land rises. There are mountains here, including Mount Kilimanjaro (kil-uh-mun-JAR-oh), a dormant volcano. Kilimanjaro is the tallest mountain in Africa. Its highest peak rises 19,340 feet (5,895 meters) above sea level.

Mountain climbers from all over the world come to tackle Kilimanjaro. It takes several days to reach the top. On their way up the mountain, climbers encounter changing climates.

The low hills at the base of Kilimanjaro receive the most rain, along with water that streams down the mountain. The rich volcanic soil is good for farming. Above these foothills, thick forests grow on the mountainside.

Higher up, wild grasses replace the forest trees. The wind becomes stronger, and less rain falls at this height. It can be very hot during the day, but night temperatures may drop below freezing.
At about 13,000 feet (4,000 meters), the mountainside becomes a desert. Little rain falls. The days are hot, the nights cold.

Higher than about 16,000 feet (5,000 meters), ice fields cover the slopes. Snow falls here. Temperatures drop well below freezing. At the summit are glaciers. The thick ice is massive, though the glaciers have been shrinking in recent decades.

Every year, thousands of people take guided hikes up Mount Kilimanjaro. This unique adventure has been compared to climbing from the equator to the North Pole.
It was a typically sweltering and **humid** August day. The sky held a few dark, towering clouds, and even more appeared as the afternoon wore on. Fat, lazy raindrops began to splatter across the windshields of the two **vehicles** on River Road—a car and a moving van. Within seconds, the wipers were battling a seasonal downpour. Sluggish at first and then with increasing intensity, the rain had become a waterfall!

The drivers could not see beyond their windshields, so they pulled over to the roadside and stopped to wait for the storm to pass. Rushing water was already sweeping over the roadway, and soon it was slapping against the tires and drenching the underside of the vehicles. It was a flash flood!

Without hesitating, the driver of the van jumped into the swirling water. He was a **burly** man who carried heavy loads for his living, yet he struggled to fight his way to the passenger car, just a short distance ahead. He frantically pounded on the driver’s window, and a teenage boy slowly lowered it. “You need to get out now!” the man shouted through the heavy rain, but the teenager seemed frozen in panic. “Get out, and go to my van!” The man pointed behind the car, and the boy nodded robotically as if he understood.
The man made his way to his van. The water was now thigh-high and the *current* was so powerful it almost pulled him under. He *hoisted* himself up to the cab and looked back. Was the boy following? No, the boy was standing on the car’s roof. The water had risen to the windows, and the boy was trying to balance as the car rocked under him, pushed by the *roiling* water.

The man remembered the strong ropes *coiled* in the van. Holding a long rope, he lowered himself into the water. He tied one end to the door handle and struggled once again to the car. He tossed the end of the rope to the boy, who managed to catch it. “Jump!” the man called.

With the rope as a *towline*, the man and the boy reached the van. They climbed onto the roof and watched as the car floated away towards the river.

Later, news reports told about the record-breaking rainfall for the *region* and about a heroic rescue on River Road. “I’m no hero,” said the van’s driver. “Anyone would have done what I did.”
There is a plant that grows so fast that one nickname for it is “the mile-a-minute vine.” The plant may not be quite that speedy. Still, it can grow at the amazing rate of one foot (30 centimeters) a day. In the southern United States, the plant buries everything in its path under thick, green leaves. The plant is kudzu.

Kudzu is a serious problem in the southern states, where there is plenty of warmth and water to help it grow. Kudzu is a climbing vine. As it climbs toward sunlight, it covers trees and utility poles, street signs, porches, and anything it can grab hold of. It forms a leafy curtain that cuts off sunlight from other plants, killing them. Just trying to keep kudzu growth under control costs millions of dollars a year.

It's hard to believe that Americans once planted kudzu on purpose. But widespread planting is the main reason that kudzu is such a problem today. The plant was first brought to North America in the late 1800s from Japan. American gardeners thought that kudzu’s wide leaves and purple flowers were pretty. Kudzu also provided shade. People began to plant it by their homes.
There were other reasons to plant kudzu. It grew even in poor soil, and grazing animals liked eating it. During the 1930s, many farms in the United States were struggling with the loss of soil, which was blowing away. The US government paid landowners to plant kudzu because its deep roots held the soil in place.

Nobody predicted that kudzu would grow out of control. But it was not long before kudzu had a new nickname: “the vine that ate the South.”
Potatoes and Tomatoes: From Poisonous to Popular

What would the world of food be like without the potato and the tomato? Dishes from all over the globe contain these two popular plants. But these two have a lot more in common than their popularity.

They both began in the Andes Mountains of South America, around what is now Peru. For thousands of years, farmers in this region cultivated these plants as food crops. People outside of Latin America knew nothing of the potato and the tomato. They grew nowhere else.

Then, in the 1500s, armies from Spain invaded Latin America to conquer the Incas, the people that ruled in these regions. The invaders were called the Conquistadors (“conquerors”). The Conquistadors brought tomato and potato plants back to Europe.

For Europeans, both plants were a novelty, something unknown to grow and display. They were not eaten, however, because most Europeans were convinced these plants would kill them. This is not so strange. Both belong to the Nightshade family of plants, many of which are poisonous. And so are parts of the potato and tomato plants.

The part of the potato plant that we eat is the vegetable that grows underground. The leaves and stems that grow aboveground are the poisonous parts of the plant. The tomato is a fruit that grows above ground. The fruit is good to eat. It is the tomato plant’s vines and leaves that are poisonous.
But two cultures helped change people’s minds, turning tomatoes and potatoes into foods loved around the world.

Italy gets the credit for making the tomato popular in Europe. The Italians began growing and eating tomatoes in the mid-1500s on, making it a major part of their diet. (It still is!) By the 1700s, the tomato had spread around the world.

It took a bit longer for the potato. The people of Ireland, seeing how cheap and easy the potato was to grow, began to depend on it by the late 1700s. By the 1800s, the potato, too, had spread around the world.
On an Arctic island, an enormous vault has been built deep underground. Like any bank vault, it holds treasures. But you won’t find precious gems or metals here. This vault holds seeds from food crops around the world.

The Svalbard Global Seed Vault is in Norway. It is a seed bank, a place to store and protect seeds. From Japanese barley seeds to Syrian chickpeas, more than 800 thousand different seed samples rest here. All are dried and kept in temperature- and moisture-controlled conditions. This means that, unlike the conditions outside, the air in the vault stays dry and the temperature is always the same.

Many nations have their own seed banks, too. One main purpose is to make sure that even if crops fail, there will still be seeds for farmers to plant.

Another main purpose of seed banks is to protect diversity, the varieties of a crop. For example, there used to be thousands of varieties of apples. Now there are a few hundred. Loss of diversity can cause problems. That was made clear in Ireland in the 1840s. People grew and ate just one kind of potato, which had no defense when a disease struck. The potato crops failed, and one million people died as a result. Could a seed bank have provided a stronger variety of potato?
Seeds hold information for scientists. The seeds of plants that are no longer farmed may be useful. They might grow into plants that can resist pests and disease. They might grow where other plants can’t. Even the seeds of an invasive plant like kudzu are saved in seed banks. Perhaps kudzu has uses that scientists will find someday.

A nation commonly has more than one seed bank. Still, a backup plan is a good idea. Floods, fires, war, and other disasters can destroy storehouses of precious seeds. That’s why the Svalbard Global Seed Vault was created. The seeds come from all over the world, and they belong to everyone, not just one nation. That’s why the seed vault is called Global.

The Svalbard Global Seed Vault is nicknamed the Doomsday Vault. If a worldwide catastrophe occurs, this special bank may help people survive. They will still have seeds to plant, crops to grow, and food to eat.
Sharr and her brother Kaze were visiting Grandfather to celebrate his 75th birthday. Grandfather was born way back in the year 2000, and the two grandchildren always enjoyed hearing about what life was like when he was growing up at a time so different from their own.

“Grandfather, tell us what you did before there were Mindcaps,” Kaze begged.

“Well, sometimes we typed on a keyboard,” Grandfather replied, wiggling his fingers over an imaginary keyboard. “Or we tapped a touchscreen,” he added, demonstrating with two fingers.

“But it must have taken so long to get anything done that way!” observed Sharr.

“We didn’t have thought commands back then,” said Grandfather as he placed a Mindcap on his head and glanced at the Wallscreen. The wall lit up with a photograph taken of Grandfather as a boy. “I’m standing in front of our family’s car,” Grandfather explained.

“Was it fun to drive such a big car?” asked Kaze.

Grandfather chuckled. “I was only ten years old, so I couldn’t drive a car. Drivers needed special training because driving was dangerous. Today, accidents don’t happen. A child can sit in a Plugger, give a thought command, and off it scoots. Nobody dreamed of such a thing back in the early 2000s.”
Grandfather blinked at the Wallscreen, and a new image appeared, this one showing seven-year-old Grandfather and his mother in the kitchen of their house.

“What is Great-Grandmother doing?” asked Sharr.

“She is cooking a pot of stew on the stove,” said Grandfather. “It took hours.”

Sharr said, “I’m glad we have Menu-Mems because who wants to wait hours to eat? Just give a thought command to the slot, and out comes the meal.”

Grandfather was smiling as he stared at the picture. “I remember it like it was yesterday,” he said dreamily. “I helped peel potatoes while Mom chopped up carrots. The kitchen filled with spicy warmth as the stew simmered in the pot.” Grandfather breathed in deeply, as if sniffing a wonderful aroma.

Kaze and Sharr studied the picture. Then Kaze said, “I wonder what a home-cooked meal tastes like.” Sharr nodded in agreement.

“It is unforgettable,” said Grandfather with a sigh.
“The horse is here to stay, but the automobile is only a novelty, a fad.” That’s what an American bank president predicted—wrongly—in 1903. At the time, horses provided transportation, as they had for centuries. For hundreds of years, horse-drawn vehicles carried people and goods. Horses did not get stuck on muddy roads, like those new “horseless carriages.”

Automobiles had been invented in Europe in the 1800s. The first automobiles were powered mostly by steam. Gasoline-powered automobiles began to appear by the 1890s. All automobiles were built by hand. That meant they were expensive. Automobiles seemed to be a toy for rich people.

Henry Ford played a big role in changing how the world viewed automobiles. Ford was an American engineer who built his first gas-powered car in 1896. He founded a car-making company in 1903. Five years later, the Ford Motor Company introduced the Model T. The price of this car was high at the time—$850. Ford wanted to lower the price by lowering the cost of manufacturing.

Carmakers were already using a method known as an assembly line. In an assembly line, each worker performs one step in the manufacturing process. In 1913, Ford and his engineers developed a speedier process: a moving assembly line. The car body moved from station to station. Parts were carried on a moving belt to workers at each station. A whole car could be built in two and a half hours!
By 1915, the price of a Model T was under $500, within the reach of middle-class customers. Known as the Tin Lizzie, the Model T became the most popular car in the United States.

Henry Ford helped put more cars on American roads. And within a few decades, horse-drawn vehicles were disappearing in cities and towns throughout the nation.

All those cars created new needs and issues. Traffic lights were developed. Highways were built. Car-related businesses grew. Car-related problems grew, too: traffic jams, accidents, and air pollution, to name just three.

Automobile technology has continued to change. In the near future, more drivers may choose electric cars. And more people may be letting cars do the driving for them. Regardless of the changes to come, automobiles are here to stay.
“Oh, no, not again!” Mama cried when she opened the icebox. The melting ice that cooled the box was all gone, and now our milk and meat were spoiled.

“Charlie was supposed to come yesterday,” I said, “but it’s so hot out, he probably has more customers than ice.” Charlie is our ice man. He brings blocks of artificial ice from the enormous refrigerator building in town. But this summer has been so hot that everyone needs ice at the same time.

Mama let out a groan of disgust. “And this icebox smells terrible, Doris—as if someone has been neglecting her chore,” she observed, turning to me with a disapproving sigh.

“I cleaned out the drainpipe last week,” I said, and that was true. The melting water drained down a pipe, which filled with disgusting slime, and it was my job to clean it out with a long brush. “I did clean it,” I repeated.

That evening, after we ate a meatless supper, Mama brought out a magazine and showed Papa a picture in it.

“I’ve been saving,” Mama said, “and I think we can afford it.”

Papa and I looked at the picture. It was an advertisement for a Monitor Top, the brand-new 1936 model. It ran on electric power, and it didn’t need to be refilled with blocks of ice. “Can we get it?” I asked hopefully.
“This should make our life easier,” Papa said to Mama and me.

When the Monitor Top was delivered, we plugged it in. This electric machine was much noisier than our old icebox, but when we opened the door (which we weren’t supposed to do for long), the air felt as fresh and cool as a mountain breeze.

No more spoiled milk and meat, and no more slimy chores! I feel bad for Charlie and the other ice men, though. These new home refrigerators are going to put them out of business.
What do the words *giant lizard* make you think of? One of the enormous dinosaurs that once roamed the land? Or maybe the imaginary dragons from fairy tales and fantasy films? None of those lizards actually exist in our world, but there is a rather large lizard that does. It’s even got *dragon* in its name.

**Komodo** dragons are the largest and heaviest lizards living on Earth. The biggest on record measured 10.3 feet (3.13 meters) in length and weighed 366 pounds (166 kilograms). But generally these creatures are smaller, about 8 feet (2.5 meters) long and weighing about 200 pounds (91 kilograms).

Like all lizards (and dragons), Komodo dragons have teeth, scaly skin, four legs, clawed feet, and a long tail. They can’t fly like dragons. But like many other lizards, they can climb and swim. They also move like their smaller relatives, twisting from side to side, using their tails for balance. This movement comes from the placement of their legs. Lizards’ legs stick out to the side, rather than under their bodies. This arrangement doesn’t slow up Komodo dragons. They can reach speeds of 11 mph for short distances.

Something else the Komodo dragon has in common with dragons and smaller lizards is a long forked tongue. It uses its tongue to “smell” the air. If the wind is right, it can smell a dead animal up to 5 miles (8.5 kilometers) away.
The Komodo dragon cannot breathe fire, but its mouth contains a different weapon. Its bite is poisonous. This causes fatal infections in any prey that manages to escape. The Komodo dragon then tracks down the poisoned animal.

There are 3,000-5,000 wild Komodo dragons at any one time, all living on some volcanic islands in Indonesia. They are named for the largest of these islands, Komodo. According to fossil evidence, these creatures originated 25 to 40 million years ago. But the Komodo dragon was unknown to most of the world until about 100 years ago. Then some Dutch soldiers had a run-in with one and sent its photograph to a nearby zoo.

Now the world knows that there really are dragons.
Whenever dogs go for a drive, they love sticking their heads out the car window. Why? The most likely reason is that they’re **sightseeing**—or rather, smell-sniffing. Sniffing smells is how dogs get information about the world.

The human sense of smell is fine for **detecting** rotten food or enjoying perfumed blossoms. But no human nose could detect a teaspoonful of sugar dissolved in a tank of water the size of two Olympic pools. That’s what a sniffing dog could **identify**, according to scientist Alexandra Horowitz. Some scientists say that a dog’s sniffing ability is at least ten thousand times stronger than a human’s.

Dogs are stupendous sniffers because of their nose **design**. Each doggy sniff brings air through the nostrils into the snout. As the air flows through the moist snout, it is cleaned. The air carries **odor molecules**. They reach an area at the back of the snout. Here, special cells catch and sort the odor molecules. The molecules are picked up by nerve-cell **structures** called smell receptors. A dog has hundreds of millions of smell receptors. (Humans have about six million.) The nerves connect to the brain. The brain **interprets** the signals from the smell receptors. The whole process happens quickly. The dog “knows” what the combination of odors means. “Hey, a squirrel ran across this lawn!”
The connections between a dog’s nose and brain make for some amazing achievements. Trained dogs help rescue people buried in snow or in earthquake rubble. They follow a trail to a criminal or a lost child. They locate illegal material in luggage. Some dogs even identify diseases.

Of all dogs, the bloodhound is the best at tracking a scent. Bloodhounds put their noses to the ground. Their floppy ears stir up odor molecules for the dog to sniff. A trained bloodhound can follow a scent that is more than 10 days old. It can follow a trail for more than 100 miles (160 kilometers). Somehow, it is not distracted by countless other odors. It’s no wonder that a bloodhound has been called “a nose with a dog attached.”
It was evening when a camp counselor led a group of youngsters on a narrow trail through the woods. Laughing and chatting, they did not suspect that they were being watched as they made their way to a campground by a stream. From high above, in the trees’ leafy canopy, a pair of dark brown eyes observed the humans. Even if the campers had scanned the treetops with binoculars, they might have missed their observer. The creature sat still, perfectly concealed by his streaks and bands of brown, gray, and white feathers.

The creature had sharp eyesight. His eyes could capture light even on dark nights. Although his eyes could not move, he had no problem tracking the campers below. His neck was so flexible, he could almost turn his head in a complete circle.

Even after the campers had disappeared from sight, the creature knew where they were. His eyesight was excellent, but his hearing was phenomenal. His larger right earhole was positioned slightly differently from his left earhole. That meant each ear received sound waves in different ways. The creature’s brain used the information from both ears to pinpoint the source of a sound. If a tiny animal scurried under a layer of leaves far below, the creature knew exactly where it was.

The creature stirred on his branch. It was time to hunt. He called loudly to announce himself to others of his kind.
All the campers heard the eight hoots floating through the trees. But they weren’t familiar with woodland sounds. “That might be a hound barking,” the counselor guessed.

The creature flew towards the stream. His fringed wing feathers muffled all sound. Silently, he landed on a tree branch. The campers were roasting marshmallows below. The creature focused his attention on shrubs behind the campfire. A faint squeak came from under a shrub. He launched himself at the spot.

“Did you see that?” asked a camper. “Something just flew right by us.”

But nobody else had seen the owl make his sudden landing. In the darkness, nobody saw him lift himself into the air with a mouse held tightly in his talons.
When Flora walked her little dog, Bella, past the house of the new family next door, she made sure to stay as far away as possible. A Rottweiler was living at that house, and Flora knew that Rottweilers were a fierce breed, trained to guard and protect. The dog’s sharp teeth, muscular body, and enormous size made Flora shudder. In addition, Bella always barked when she glimpsed the Rottweiler sitting silently and menacingly on the front porch, so Flora tried to hurry her dog past the danger zone.

Once, the Rottweiler stood up as Flora walked Bella, and seemed to be heading their way. Flora let out a yelp and ran home as fast as she could. That night, she had a nightmare about the big dog. It sat beside her, growing ever more gigantic.

On one walk, a boy approached Flora and asked if he could pet Bella. As he patted the little dog, he introduced himself. “I’m Manny, and we just moved in,” he said, pointing to the house with the scary dog. “Does your dog want to play with Otis?”

“Is Otis your Rottweiler?” asked Flora. When Manny said yes, Flora said, “That dog could eat Bella for breakfast.”

“Otis?” said Manny, laughing. “He just looks fierce, but he’s very obedient and well-behaved.” Then he called out, “Otis, come!” The monstrous creature bounded from the porch toward them, making Flora gasp in horror.
But Bella seemed delighted, and the two dogs began play-fighting. Otis was careful to treat Bella gently, and Flora was impressed by how the big dog knew his own strength. “He seems so smart!” she blurted.

“He’s our gentle giant,” said Manny. “He loves people.” As if on cue, Otis stepped over to Flora, wagging his tail, and looked up at her with smiling eyes. Before she knew it, Flora was stroking his sleek back. Otis had won her over.

I met the family who moved in next door,” Flora informed her mother with a smile that evening.

“The ones with that huge, nasty guard dog?” her mother asked.

“Oh, that’s just Otis,” said Flora breezily. “He’s a big sweetie-pie.”
The baby hippopotamus was in trouble. He was all alone in the sea off the coast of the African country of Kenya. Strong, high waves had flooded the coast days earlier. Nobody knew where the baby’s mother was. If the hippo was not rescued, he would die.

People tried to bring the scared hippo to shore. It was hard work because the hippo weighed about 600 pounds (272 kilograms) and thrashed at anyone who came near. At last, a man named Owen was able to hold the hippo while a net was fixed in place.

The hippo was taken to a wildlife park in Kenya. He was given the name Owen, after his rescuer.

At the park, caretakers placed Owen in an area with other rescued animals, including a giant tortoise named Mzee. The tortoise was about 130 years old, and he kept to himself. Mzee didn’t like it when Owen headed right for him and nestled beside him. The grumpy tortoise crawled away. But Owen kept following.

It looked as if the hippo was seeking comfort from the tortoise. Maybe the humped shape of the giant tortoise reminded Owen of his mother. As the days passed, Mzee stopped trying to get away from Owen. At times, Mzee followed Owen!
The pair began spending all their time together. They swam and ate together. They rubbed noses. They slept side by side. They communicated with gentle nips and nudges. The wildlife experts at the park had never seen a friendship form between such different animals. It was a strange and wonderful thing.

Owen and Mzee’s story was told in photos, videos, articles, and books. All over the world, people learned about the hippo and tortoise that were friends.

When Owen grew too big and **fierce** to live safely with Mzee, they were **separated**. But many visitors still come to the park to see Owen and Mzee, two animals that formed a famous friendship.
Once upon a time, a poor father and son farmed a small plot of land. One spring, heavy rains caused a nearby river to flood. The farmers’ land lay underwater, and their hut and meager furnishings floated away. “Oh, what a terrible disaster!” cried the son.

The father said, “Things look bad now, but you can’t always tell.” He suggested that they ask the wagon driver to take them to the village, where it would be dry.

So the pair waded through water and trudged through mud until they reached the wagon driver’s house. They learned that the wagon driver had just left for the village. “Nothing is going right for us!” wailed the son.

“Well, you can’t always tell,” said the father. “Something good may come of this.”

The farmers set out on foot for the village, many miles away. They finally arrived late at night. When they asked at the inn for a place to sleep, the innkeeper told them that every bed was taken.

The son moaned with despair, “All our luck is bad!”

“Well, you can’t always tell,” said the father, leading his son to the stable, where both made a bed of straw. Exhausted, they quickly fell asleep.
Just before dawn, shouts and shrieks awakened them. From the safe distance of the stable, they saw the inn engulfed in flames and watched people pouring frantically from its doorway. “How lucky that we weren’t inside,” observed the father.

Later that day, the farmers met the wagon driver, but he no longer had a wagon. On the way to the village the day before, the wagon driver’s horse had stumbled, his wagon had rolled down a steep hill, and he had injured his leg when the wagon crashed at the bottom of the hill.

“How lucky that we weren’t passengers in your wagon,” exclaimed the father, “for an accident like that can be deadly.”

When the floodwaters receded, the farmers returned home. On the spot where their home had been, they found an ancient chest. Long buried, it had been dislodged by the flood. Inside the chest were glittering jewels worth a fortune, so the farmers were never poor again.

When it comes to luck, you can’t always tell!
Owls
In folktales, owls are wise characters who give good advice. In Greek mythology, the ancient Greek goddess of wisdom, Athena, was often shown holding an owl. A person who understands many things is “as wise as an owl.” And, in nature, owls’ enormous, staring eyes and their accurate hunting skills make these birds seem like observant thinkers. But are real owls wise?

In fact, owls are not ranked among the most intelligent birds. To scientists who study learning, a smart animal is one that can solve a problem it has never seen before. Owls are not known for this ability, and people who train owls report that these birds are not quick to learn new tasks.

Ostriches
Someone who is not facing up to a problem may be compared to a different bird—an ostrich. The person is told, “Don’t be an ostrich. Don’t bury your head in the sand.” Does an ostrich really bury its head in the sand?

In fact, ostriches never cover their heads with sand. They need to see danger to stay safe. These big, flightless birds have sharp eyesight. They are fast runners and strong fighters. So, how did people come to believe that ostriches bury their heads? Ostriches lower their heads to move eggs in their nest on the ground. Seen from a distance, their heads appear buried by sand. An ostrich may also lie still with its long neck stretched out on the ground as a way of hiding when it senses danger.
**Crocodiles**

Sometimes, a person who is only pretending to feel sadness is compared to a crocodile. “What crocodile tears!” others say about the **false** show of feeling. It was reported that crocodiles cried while eating animals they had just killed—as if they were sorry about the deed. Do crocodiles really cry tears?

In fact, crocodiles do cry tears. As the crocodile eats, bubbles form in the corners of its eyes and sometimes result in tears that drip down the animal’s face. But these tears are not caused by strong feelings, like sadness about its poor victim. The tears are caused by the action of eating, and they work to keep the crocodile’s eyes **moist**. The **glands** that **produce** tears are squeezed as the animal works its mighty jaws.

Owls aren’t wise, ostriches don’t ignore danger, and crocodiles don’t show false sorrow. Some ideas about animals turn out to be more fiction than fact.
Greek myths and legends belong to a time long gone by, but traces of them can be found in our language. Here are three expressions and the stories behind them.

**Midas Touch**
If someone is lucky with money and gets rich easily, that person might have a Midas touch. Midas ruled the kingdom of Phrygia. To reward him for a kind act, the god Dionysus granted him a wish. Without thinking, the king wished that everything he touched would turn to gold. The wish was granted. The king enjoyed turning things in his garden into gold, but when he became hungry, he found he could not eat. Any food that touched him immediately turned to gold. So did his loving daughter when she tried to comfort him. Midas begged to have his wish undone, and Dionysus agreed.

**Pandora’s Box**
If someone creates trouble, people might say that person opened a Pandora’s box. In Greek mythology, Pandora was the first woman on Earth. Each god gave her a particular gift, such as beauty or musical talent. Zeus, the king of the gods, gave her a sealed jar (not a box) filled with all the miseries of the world. Pandora was told not to open the jar, but one of the gifts she was given was curiosity. She opened the jar, as Zeus must have known she would, and out flew terrible things. By the time she managed to close it again, only one thing remained because it was at the bottom of the jar: hope.
**Trojan Horse**

These days, one meaning for *Trojan horse* has to do with computers. It is something that seems to be useful software but turns into a virus when installed on a computer. The original Trojan horse was built during the Trojan War. The Greeks were trying to *conquer* the Trojans, who ruled the city of Troy. This city was surrounded by a huge wall. The Greeks wanted to sneak some men into the city to open the gates. So a huge wooden horse was constructed. It was hollow, so some soldiers could hide inside. Then the armies withdrew, acting as if they had given up on the war. The horse was left before the gates of Troy as a gift. The gullible Trojans fell for the trick and took the horse inside. Soon after, they lost the war.
Jacinda’s class was studying how businesses make and sell **products**. The students were supposed to come up with ideas for new products and show why people would want to buy them. Thinking hard, Jacinda tapped her pencil on her desk. When its point broke, she started to look for her little plastic sharpener, but suddenly stopped. She had an exciting idea!

She eagerly told her product idea to the group. “When your pencil loses its point, why hunt for a sharpener? A sharpener can be attached right to the point!” Jacinda heard a few giggles. One girl in her class, Kayla, called out, “That’s funny! You said poincil, not pencil!”

Jacinda knew she had **mispronounced** a word, and her face grew hot. She was embarrassed for making such a silly mistake. At that moment, the teacher, Ms. Greco, spoke up. “Jacinda, you’re as **inventive** as Lewis Carroll!”

Ms. Greco told the class that Lewis Carroll was a famous writer of the 1800s. She wrote chortle on the whiteboard. “The word chortle comes from Lewis Carroll’s nonsense poem Jabberwocky, which includes a lot of made-up words. He invented the word chortle by putting together parts from the words chuckle and snort.” Ms. Greco told Kayla to look up chortle in a dictionary and read the definition aloud. Then she asked everyone to chortle.
After the chortling died down, Ms. Greco explained that Lewis Carroll also invented a name for words like chortle. He said they had “two meanings packed up in one word.” They were like a portmanteau, which was a suitcase with two parts. Ms. Greco wrote **portmanteau word** on the whiteboard and had Kayla do a dictionary check on that one, too.

“Jacinda has invented a portmanteau word—poincil—that combines point and pencil,” said Ms. Greco. Jacinda knew she hadn’t invented the word on purpose. Still, she felt pleased with her **accidental creativity**. When Ms. Greco asked, “Do you think that Poincils is a good name for pencils that never lose their points?” Jacinda could already picture the product package.

Jacinda’s portmanteau word **inspired** her classmates. Connor came up with an idea for a fridgeradio that could keep food cold and play music at the same time. Angel and Madison were designing a robunch, which was a robot that delivered lunch in the cafeteria. Brianna’s motoskoard was a motorized skateboard.

“Can I work with you on designing Poincils?” Kayla asked Jacinda. “I think that your product is a great idea!”
Ecosystems are filled with connections. An ecosystem is all the plants, animals, and nonliving things in a particular area. One connection that can have a big impact on an ecosystem is the link between predator and prey animals.

**What to Know About Keystone Species**
- Keystone species are living things that have a major impact on how an ecosystem works.
- If you take a keystone species away, the whole ecosystem suffers.
- They are often, but not always, a predator. (They eat other animals.)
- A sea otter is an example of a keystone species.

Take the example of sea otters and sea urchins. Sea otters are mammals that live in the North Pacific Ocean. They are supremely suited for marine life. Their flipper-like hind feet help them swim. They sleep and eat while floating on their backs, often among the large seaweeds called kelp.

Sea otters eat an enormous amount of food. The animals they eat are called prey animals. A preferred prey animal is the sea urchin. Sea urchins are small, spiny animals with round bodies. They live on the sea bottom, eating algae and a type of seaweed called kelp.
During the 1700s and 1800s, it was a profitable business to hunt sea otters for their wonderful fur. Otter-fur hats and coats were popular. Overhunting brought sea otters to the edge of extinction. Not until the twentieth century did laws protect them. By then, damage to marine ecosystems had already been done.

Without sea otters to prey on them, the numbers of sea urchins grew nonstop. Sea urchins munched on kelp plants. They kept gobbling until the kelp forests disappeared. The giant green plants were central to the ecosystem where they grew. All sorts of marine life depended on kelp. Kelp provided not just food but also shelter. When the kelp vanished, so did the fish and shellfish that needed it to survive.

Kelp is also helpful to the physical environment. These plants absorb carbon dioxide. Carbon dioxide is a “greenhouse gas.” Greenhouse gases trap heat and raise global temperatures. The result is harm to life on land and sea.

Biologists have a name for an animal that plays a key role in the health of its ecosystem. It’s called a keystone species. Sea otters are a keystone species. With protection, some populations of sea otters have made a comeback—and so have the valuable kelp forests they live in.
Coral reefs are called “the rainforests of the ocean.” Like real rainforests on land, they are home to a rich variety of life—sea life. For example, thousands of different species of fish, outrageously colorful, may live around a single reef.

The rock-like reefs are built by coral, tiny animals related to jellyfish. Each coral is called a polyp. It is a simple organism with a stomach and a mouth surrounded by tentacles that it uses for feeding. It builds a hard skeleton around itself for protection. Thousands of identical polyps live together, their skeletons connecting to form a hard structure. As they live and die, new skeletons are built. The reef grows.

The living coral are closest to the surface. They need sunlight, so their “roommates” can provide a steady diet of food. Each polyp has plant-like algae living with it, protected by its skeleton. The algae use photosynthesis to create food from sunlight, sharing this food with the polyp. They also give the coral reef its color.

Thousands of living things rely on a single reef for food and shelter. When it dies, its inhabitants are suddenly homeless. And coral reefs are dying.

The outward sign that all or part of a reef is dying is something called “coral bleaching.” Bleaching results when the algae in the coral are killed or driven out. There are two main causes for this: climate change and pollution.
Coral need clear water and a certain temperature range to stay healthy. Even a rise of one degree in the average water temperature hurts them. Climate change is slowly raising the temperature of the ocean. If the temperature rises around them, coral polyps are damaged and expel their algae. With the algae gone, the reef loses its color and the polyps starve.

Pollution also plays a part. It encourages the growth of harmful algae. This algae covers the top of the reef, blocking out sunlight. This kills the good algae and soon kills the coral.

A report released in June 2017 announced that three quarters of coral reefs worldwide have suffered extreme damage. Experts predict that coral reefs could disappear completely by 2050. But scientists have been working on the problem. They are looking for ways to move heat-resistant algae into the reefs. They are finding ways to rebuild damaged reefs. With skill and luck, they will help save “the rainforests of the ocean.”
Growing up in rural Pennsylvania, USA, Rachel Carson (1907–1964) loved exploring nature. She also loved to write. In college, Carson decided to become a marine biologist. After she earned a master’s degree, she found a job with the United States Bureau of Fisheries. She worked on the agency’s publications, combining her writing skills and science knowledge.

Carson wrote her own books, too. *The Sea Around Us* was published in 1951. Using vivid and poetic language, Carson explained science concepts in ways that the public could appreciate. The book became Carson’s first bestseller. The money from it allowed her to leave her government job and become a full-time writer.

Carson’s research showed her that manufactured chemicals in use since the 1940s were causing great harm. Pesticides such as DDT were widely sprayed to kill off insects. Farmland was sprayed. Communities were sprayed. Chemical weed killers were sprayed on roadsides and fields. The chemical industries insisted their products were safe. Carson knew that all those poisons in soil, air, and water were killing more than their intended targets.

Carson was a quiet, studious person who did not seek fame. But she was determined to sound an alarm. She spent years uncovering facts and evidence. She carefully built a case to prove that uncontrolled use of chemical poisons was damaging the earth and its living things.
Her book *Silent Spring* was published in 1962. It became a bestseller immediately. The book begins with a fable about a pleasant American town. Suddenly, sickness and death arrive. When spring comes, there is “a strange stillness. The birds, for example—where had they gone?” The fable ends with the cause: “The people had done it themselves.”

Silent Spring then explains the real-life effects of overusing chemical poisons. Pesticides designed to kill crop-eating insects also harmed everything that ate the poisoned insects and everything that ate the eaters. Carson argued that “in nature nothing exists alone.” Human-made poisons were destroying entire ecosystems.

The chemical industries fought back. They claimed that the book was fiction and that Carson was not a real scientist. Despite being very ill, Carson spoke publicly to defend her book. She had written the truth.

Silent Spring became one of the most influential books of the twentieth century. It led to new laws about pesticide use and environmental protection. Because of the book, people thought differently about their relationship to all living things.

Rachel Carson changed how we view the earth.
Clyde and his friend Ajay often walked on Pine Lane, a dirt path beside a wooded area known as the Enchanted Forest. One day, the boys were walking with Clyde’s dogs, Bric and Brac. Suddenly, both dogs barked excitedly and ran into the woods. Clyde called after them again and again, but when the dogs did not return, he told Ajay, “We’ll have to go and get them.”

The two boys entered the woods and called loudly for the dogs. There was no sign of Bric or Brac, but there was a sign on a board nailed to a tree. The boys walked right past it. They didn’t notice that it read, “Magic Wish Trail.”

After calling vainly, Clyde said, “There are so many trees and shrubs, we’ll never be able to see Bric and Brac. Too bad we’re not dogs because we could track those pups in no time. We’d just use our amazing sense of smell.”

Ajay rolled his eyes and said, “Yeah, I wish!”

At once, a breeze ruffled the boys’ hair. “I feel strange,” each said simultaneously. Looking at each other, both cried out, “You’re a bloodhound!”

The bloodhounds shouted at each other for a while, using their low, hoarse voices to howl their shock and alarm. But then, without thinking, they both began sniffing the ground. “A fox must have taken this trail,” said Ajay.
“Three foxes,” corrected Clyde, “probably a mother and two young kits.”

The two bloodhounds trotted along, sniffing and commenting on the aromatic information that creatures had left behind. They detected the moist fragrance of frogs, the damp smell of rodents, and the wispy perfume of insects.

“And here is the route that Bric and Brac took,” said Clyde confidently. “They were chasing a squirrel, but it climbed that tree over there, so they gave up and went this way.” The bloodhounds followed the scent until they reached the edge of the Enchanted Forest. Before them, on Pine Lane, Bric and Brac stood waiting.

Stepping out of the forest and onto the path, the bloodhounds passed through an invisible wall. They transformed instantly into human boys.

“Oh, look,” Clyde said to Ajay. “Bric and Brac came out of the woods on their own.”

“I’m glad we didn’t have to go into the Enchanted Forest,” added Ajay. “I’ve heard that weird things happen there.”
Lester was lying on his back in the corner of the classroom and his friend, Harold, was lying nearby. All the students were lying on the floor because they were following the instructions of their teacher, Mr. Taylor.

“Direct all of your attention to sounds and try to remember everything you hear,” Mr. Taylor told the class. “Do not speak, and do not squirm, just lie still and listen. After fifteen minutes, we’ll return quietly to our seats and write a description of our soundscape. Ready, set, begin!”

As Lester listened attentively, he heard the blinds tapping against the glass, a bird chirping outside, and footsteps in the hallway.

Lester turned his head to glance at Harold, who was lying still, eyes shut. Lester closed his eyes, too, and listened harder. He heard voices in the hallway, a truck backing up, and a ball bouncing on the tennis court. Lester was surprised at how many different sounds were in the soundscape.

Lester heard a squirrel calling loudly, while, in the distance, someone was using a lawn mower and a siren wailed. He heard a plane overhead and a car horn in the street. He also heard a low hum that seemed to be coming from the classroom. Lester could not tell what was causing the hum, so he listened more closely. He decided that it wasn’t an insect, and it wasn’t a machine. It sounded like a purring cat. This was a puzzle!
Lester wondered if Harold was hearing the same sound. He looked over at Harold and then smiled because he solved the puzzle.

Mr. Taylor clapped his hands and said, “OK, now it’s time to write about what you heard.”

At his desk, Lester listed all the sounds he remembered and then described them in a poem.

The Soundscape
Footsteps and murmurs in the hall.
The echoes of a bouncing ball.
A truck’s beep-beeps fill the air.
A siren whistles, “Watch out, beware.”
A honking horn, a growling mower.
Will that buzzing plane come even lower?
A squirrel chip-chips loud and long.
A bird sings a cheerful two-note song.
The blinds give the window a gentle tap.
And Harold snores as he takes a nap.
Here’s a taste test you can do with a friend. Together, set out four teaspoons. Fill one with sugar water, one with lemon juice, one with salt water, and one with tonic water (a soft drink made with quinine). Close your eyes, and have your friend give you one teaspoon at a time. Will you be able to identify the taste in each teaspoon? No problem! It’s simple to tell apart sweet, sour, salty, and bitter tastes.

Scientists have long known about those four basic taste types. It wasn’t until the year 2000 that scientists worldwide agreed about a fifth taste, identified by Japanese scientists many years earlier. The fifth taste is called umami (oo-MAH-mee). The name is Japanese for “deliciousness.” In English, the word savory describes the umami taste. It is found in foods such as mild beef broth and parmesan cheese.

Sweet, sour, salty, bitter, and umami tastes come from molecules in food. How do we sense taste from these molecules? Structures on the tongue, mouth, and upper throat work together to send taste signals to the brain. Specifically, the tongue has tiny bumps called papillae (puh-PIL-ee) that contain microscopic structures called taste buds. Taste buds have small openings that lead to taste-receptor cells inside. When a taste molecule touches the papillae on our tongues, the molecule enters the taste buds and is picked up by the receptor cells inside. Chemical signals from the taste receptors cause nerves to carry signals from the mouth to the brain. As a result, the eater becomes aware of flavors.
Think of a favorite food. It's not just taste that makes the food appealing. Other senses are involved, too. The food is your favorite because of its color, shape, texture (how it feels in the mouth), and maybe even its sound (does it crunch?). Most important is its smell.

Smell receptors in the nose detect many more kinds of molecules than taste receptors do. Try this test with a friend. Cut a slice of an apple and the same size slice of a raw potato. Close your eyes, and pinch your nose shut. Have your friend feed you one of the slices. Can you tell which one is in your mouth? Probably not. Distinguishing flavors requires the sense of smell, as you’ve probably discovered if you’ve ever had a bad cold.
The date was June 30, 1859 and the place was a natural wonder of North America, Niagara Falls. Located between the United States and Canada, the Niagara River roars down mighty waterfalls into the Niagara Gorge. On this date, a rope was strung above the gorge, ready for the man known as the Great Blondin, a world-famous tightrope walker from France.

Thousands of people had come to Niagara Falls to see the Great Blondin attempt this dangerous crossing. One slip and he would tumble more than 150 feet (46 meters) into the deadly, rushing river.

Starting from the American side of the gorge, Blondin stepped onto the rope holding a long, heavy pole for balance. The rope was more than 1,000 feet (305 meters) long. Blondin made his way to the middle of the rope where... he sat down! The amazed onlookers watched as he lay down! Then he stood up easily and proceeded to the Canadian side where, before stepping off, he did another trick—a back somersault! Then he crossed back. What a show!

The Great Blondin made many more crossings that summer and the next. He came up with all kinds of surprises to awe spectators. He crossed holding a chair, placed it on the rope, and stood on it. He crossed while blindfolded and he crossed on stilts. In the middle of one crossing, he stopped to light a little stove and cook an omelet! The crowd loved it.
The Great Blondin also crossed carrying a man on his back. This was probably the most terrifying feat of all. It certainly was for Harry Colcord, the man being carried, who was Blondin’s manager. He wrapped his arms around Blondin’s chest as the crossing began. He tried not to move, and he tried not to look below but then Blondin told him to get off! Carrying him was hard work, and Blondin needed to rest. Somehow, Colcord eased himself onto the swaying rope, *clutching* Blondin’s shoulders and somehow, he climbed on Blondin’s back again. Blondin had to rest four more times before the pair finally reached land. The crossing took 42 frightening minutes. What a show!

For about 50 years afterwards, other tightrope walkers showed their skills at Niagara Falls but none matched the fame of the first to do it, the Great Blondin.
The Boy With The Ball

Hector’s family moved to Tilton Springs at the start of summer. When Hector discovered that no other kids his age lived in the neighborhood, he knew he’d need to find a way to entertain himself. He found a lightweight ball that bounced well and had a rough texture that was easy to grip. Hector devised ball games to play alone on the small concrete patio behind his house.

He set up increasingly complex challenges for himself. For how long could he bounce the ball low and fast while walking? Could he throw the ball high and catch it behind his back? Could he bounce the ball, spin around, and catch it? Could he spin around twice and still catch it? Hector practiced almost every day.

On the first day of school, Hector realized that all the students in his class already knew each other from earlier grades. He put on a brave face, concealing his worry. Would the other students accept a newcomer, or would they exclude a stranger and ignore him? Hector wanted to make a good first impression, but he wasn’t sure how to begin.

During recess, when the teacher passed out a few balls, Hector was astonished to see that the balls at his new school were exactly like the one he had played with all summer. He took a ball. Holding it felt as natural as breathing.

Hector spun the ball on the tip of one finger and then passed it to a fingertip on the other hand. He tossed the ball into the air and bounced it off his ankle onto his head and into his hands. A group of students began to watch.
Hector bounced the ball hard, spun around twice, and caught it with one hand. He threw it **vertically** and caught it between his elbows. He dribbled it smoothly between his legs while running in a circle. The crowd of students watching Hector grew larger as he balanced the ball on his head and rolled it behind his back from one shoulder to the other. Hector heard excited whispering and even applause from the spectators.

When recess was over, Hector’s classmates gathered around him.

“Where did you learn those tricks?” someone asked.

“You’re like a pro ballplayer!” remarked another classmate in an admiring voice.

“Can you teach me?” asked someone else.

“Sure,” replied Hector with relief. This was a good beginning.
Cast of Characters

DIRECTOR
NELLY, a singer
KELLY, Nelly's singing partner
VINCE, a mind reader
MILLARD, a magician

[The DIRECTOR is sitting on a chair in an auditorium. NELLY and KELLY walk arm-in-arm onto the stage.]

DIRECTOR. Welcome to the tryouts for the Stixville Talent Show. I’ll be directing the show. What are your names, and what is your talent?

[NELLY and KELLY speak together, jumbling their replies.]

NELLY. I’m Nelly, she’s Kelly. We’re a singing duo...we sing together.

KELLY. I’m Kelly, she’s Nelly. We sing together...a singing act.

DIRECTOR. Huh? Well, show me what you can do.

[NELLY sings one song while KELLY sings a clashing song.]

DIRECTOR. Stop! Stop! Couldn’t you two agree to sing the same song?

[NELLY and KELLY respond simultaneously.]

NELLY. We didn’t have time to rehearse.

KELLY. I told her we needed more practice.

DIRECTOR. I’ll say! Go home and practice—please.

[NELLY and KELLY exit. VINCE walks confidently onto the stage.]
DIRECTOR. Welcome to the tryouts for the Stixville Talent Show. I’ll be directing the show. What is your name and your talent?

VINCE. I’m Vince the Mind Reader.

DIRECTOR. [Skeptically] You can tell what I’m thinking?

VINCE. Sure! Right now, you’re thinking that I can’t really read minds.

DIRECTOR. True, but too obvious. Let’s get a sample of your act.

[VINCE takes a deck of cards out of his pocket and shuffles the cards.]

VINCE. Pick a card, any card, and I’ll tell you what it is.

DIRECTOR. OK, I’ve picked a card.

VINCE. Now put it back in the deck, anywhere at all.

[As the DIRECTOR puts the card back in the deck, VINCE leans over to view the card.]

DIRECTOR. [Surprised] Hey, you just looked at it before I put it back!

VINCE. No, I didn’t.

DIRECTOR. Yes, I saw you look right at it!

VINCE. OK, OK, I had to take a peek because I haven’t perfected the trick yet.

DIRECTOR. [Sighing] Go home and practice—for a long, long time.

[VINCE sulks and exits. MILLARD walks onto the stage.]

DIRECTOR. Welcome to the tryouts for the Stixville Talent Show. I’ll be directing the show. [Under his breath] If there is one. [To MILLARD] What is your name and your talent?
MILLARD. I’m Millard, and I have a magic act based on scientific principles. I pull a tablecloth out from under dishes and glasses, without disturbing them.

DIRECTOR. [Skeptically] Have you practiced this trick?

MILLARD. Yes, many times.

DIRECTOR. At last! Well, Millard, show me what you can do. Use that table over there. It’s already set up for dining.

[MILLARD walks to a table covered with a tablecloth and set with tableware.]

MILLARD. [Confidently] Ladies and gentlemen, Millard the Magician will now remove the tablecloth, and only the tablecloth. One, two, three...

[MILLARD yanks the tablecloth off of the table. The tableware crashes to the floor. DIRECTOR and MILLARD stare silently at the mess.]

DIRECTOR. Um, I thought you said you practiced this trick.

MILLARD. Well, I did... but it never worked at home either.

DIRECTOR. There’s a broom. Please sweep up the mess before you go.

[MILLARD sweeps up the broken glass and then exits.]

DIRECTOR. [Thoughtfully] Directing a talent show is a lot harder than I thought it would be. Of course, it is my first time. I might need more practice.
There’s something magical about a rainbow. That’s probably why people everywhere have told stories about these wonderful arcs of colors. The ancient Greeks said that the goddess Iris used a rainbow as her stairway from the sky to the earth. In Ireland, folktales are told about leprechauns guarding their pot of gold at the end of a rainbow. The Cherokees of North America described a rainbow as the beautiful clothing of the thunder god.

Rainbows seem magical, and in a sense they are. A rainbow is an optical illusion. No one can go to a specific spot in the sky and touch a rainbow because it is not really there. But if a rainbow isn’t really there, why does it appear?

What to Know About Light

• Light is a form of energy that travels in waves of different lengths. The length of each wave is called a wavelength.

• We perceive light as white, but it is actually a mix of 7 (yes, 7!) colors: red, orange, yellow, green, blue, indigo, and violet.

• Each color in the spectrum of light has a different wavelength: red is the longest, violet is the shortest.

• Prisms break white light apart so that we can see the spectrum of colors. Raindrops can act like tiny prisms.
How Rainbows Appear
When you look up toward the sun, you see white rays of light shining down. Rainbows form when white light travels through raindrops in just the right way. Imagine it is late in the afternoon, just after a thunderstorm. As rays of sunlight break through the clouds, they strike the millions of water droplets still in the air. If the beams of light pass through the water droplets at just the right angle, the light bends (refracts) and then bounces back (reflects). What happens when white light bends and bounces? To put it simply, it breaks apart into separate colors. And—you guessed it—these colors are the colors of the rainbow. A rainbow appears.

How to Find a Rainbow
You’ll need a day when sunlight follows rain and the sun sits fairly low in the sky. Stand with your back to the sun. Scan the sky before you. Water droplets will bend and split the sunlight passing through them. Some of the light will be reflected, or bounced back, towards your eyes. The angle from the sunlight to the droplets must be the same as the angle from the droplets to you. If it is, you’ll see red from high droplets, violet from low droplets, and all the rainbow colors in between.

How to Make a Rainbow
A natural rainbow is hard to find, but you can make your own. You’ll need a garden hose and a sunny day. Stand with your back to the sun, and spray fine droplets into the air. Watch as the droplets split the sunlight into your very own rainbow.
On a hike with other campers, Lily stopped to check her cell phone. “Too bad. I can’t get a signal here,” she said to herself. When she looked up, she saw that she was alone, so she jogged ahead on the trail to catch up to the group.

After a few minutes, Lily knew that the campers had not taken this trail, so she ran back, but wasn’t sure where to stop. Her heart was beating fast from running, and from fear. She found a path and started walking on it, uphill and down through the woods. When the path forked, Lily sometimes went left, sometimes right. Finally, she came to a grassy clearing where she sat on a large rock and said to herself, “Stay calm, and think!”

She looked in her backpack and found an apple, a half-empty water bottle, a sweatshirt, and the useless cell phone. The back of the cell phone was shiny silver, and she saw her worried face reflected in it.

Lily took a sip from the water bottle but she decided to save the apple until she was hungrier.

She pictured the counselors trying to find her. All she had to do was wait and the clearing seemed like a good spot, because she could be seen more easily in the open.

After three hours of waiting, Lily ate the apple.
It began to drizzle, and Lily put on her sweatshirt. She realized
that evening was coming, and she needed better shelter. Earlier,
she had noticed a rocky *overhang* in the woods. To make sure
she would find the way back to the clearing in the morning,
Lily collected *twigs*. She placed pairs of them in a crisscross
pattern to mark her path.

Lily sat under the rock ledge, her chin resting on her knees.
The rain made gentle music, and as darkness came she *dozed off*.

The songs of birds awakened her to a sunny morning and she
followed her twig path back to the clearing.

After a while, Lily heard a loud buzzing overhead and looked
up. A rescue *helicopter*! She leaped up and waved her arms.
“Here! I’m here!” she shouted but it seemed that the helicopter
was moving away. “Don’t leave!”

Lily grabbed her cell phone and held it up, tilting its silvery back
this way and that, trying to catch the sunlight. Would the flashes
be seen?

News reports later told about the rescue. “Lily’s cell phone had
no signal,” said one reporter, “but this resourceful camper used it
to send a message anyway.”
Blazing lights

flicker
flash
glitter
gleam
twinkle
sparkle
bedazzle
beam
so
brilliantly
bright.

Reasons
why
city
stays
awake
all
night.

—Lee Bennett Hopkins
Imagine that you and your people lived for centuries in steep, rugged mountains, in thousands of homes scattered over the mountainside and in canyons. How would you get around? Horses and wagons would not be practical over such difficult land. For the Tarahumara people of northern Mexico, the answer was and is to travel by foot. They run.

The Tarahumara have built their way of life around running. Their name for themselves is Raramuri, which means “one who walks well” or “runner.” A good runner, in their world, is not one who runs fast but one who can run for a long time. These people raise their children to run with incredible endurance.

It is not unusual for a Tarahumara to run 50 or more miles (80 kilometers) in a single day. Tarahumara hunters run down their prey. If they are trying to catch and kill a deer, rabbit, or wild turkey, the hunters will run after the animal until it is too tired to run anymore. They have also been known to chase and catch wild horses.

The Tarahumara do not train themselves or their children to run. Instead, they make it part of their daily lives and place a high value on being a good runner. They hold races that help bring the communities together, one for men and one for women. These races can last for days. The men’s race consists of two teams of 3 to 10 men who must run up and down mountain trails for anywhere from 12 to 150 miles (20 to 240 kilometers).
Not only that, but team members must **continually** kick a small wooden ball back and forth as they run. The women’s race is quite similar, except the women throw and catch hoops with long sticks while they run.

Now, after centuries on their own, the Tarahumara are having to deal with outsiders. Railways have made it easy for **tourists** to visit many of their communities. Their forests are being cut down by lumber companies, and the valuable **ore** beneath their land is being dug out by mining companies. In spite of all these changes, the Tarahumara have held on to their great tradition of running.
The Legend of the African Crowned Crane

Once, long ago, an African king became separated from his companions while out hunting in the dry grasslands. The king was lost and he did not know how to find the oasis where the royal court was set up. It was a hot day, and the king knew that he would die of thirst if he did not find water soon.

Zebras were grazing nearby. “Please help me,” the king said to the zebra chief. “I must find my court. Can you lead me to it?”

The zebra chief turned away from the king. “We cannot help you, for you have hunted us.”

The king then asked the elephant queen for help but she, too, refused. “We do not help those who want to kill us,” she said.

The king asked the antelopes, but they also said no because they were favorite game animals of hunters such as the king.

A flock of long-legged, long-necked birds called cranes landed near the king. Weakly, the king begged the cranes for help. They did not turn away. Instead, the cranes brought water to the king and then, led him to his court.

The grateful king ordered his goldsmith to make a crown of gold for each crane. The next day, the cranes flew off wearing their crowns, but the day after that, they returned with bare heads. The cranes said that the other animals had become envious and angry when they saw the golden crowns. The animals had stolen the crowns and destroyed them.
The king had new crowns made, not of gold, but of golden feathers that could not be removed. Each crane flew off wearing its gold-feather crown.

And that is how African crowned cranes received the **beautiful, shimmering** crowns of gold that they still wear today.
Who lives in caves? Well, a cartoon image of a cave dweller shows a fur-clad hunter of the Stone Age carrying a club and drawing on a cave wall. The image is supposed to be silly—and it is.

Real-life Stone Age people lived by hunting and gathering food, rather than farming. For them, caves provided shelter at times. Caves had sacred uses, too. However, people didn’t actually begin turning caves into homes until about 5,000 years ago. That was after they had learned to raise animals and grow crops. Instead of moving into natural caves, people who lived in caves built their own from rocks in the environment.

Cave dwellings made sense in dry environments where there weren’t enough trees to use as lumber for building. If the rocks of the region were soft enough, people developed the tools to carve out underground rooms. Underground, they were safe from sandstorms. And they escaped the extreme differences between day and night temperatures common in deserts.

**Tunisia**

Cave dwellings are found in the North African country of Tunisia. The settlement of Matmata is famous. People of the Berber culture began building this village centuries ago. Some of them still live underground, protected from sun and wind. The homes here were built into the walls of a deep pit by cutting into the desert sandstone, a soft rock. A four-cavern hotel is popular among tourists, especially Star Wars fans. (Scenes from the Star Wars movies were filmed here.)
Spain
The town of Guadix, in Spain’s Granada province, is also known for cave dwellings. For hundreds of years, people have lived in cave houses here. The underground dwellings are naturally cool during the summer and warm during winter. There are 2,000 cave dwellings in Guadix. The multi-room homes have an airy feel and all the modern conveniences.

China
In China today, more than 30 million people live in caves. Many of these dwellings are found in Shaanxi province. This region has cliffs that are easy to dig into. Most of these homes are simple rooms, but some are as spacious and modern as city apartments.

Throughout the world, fewer cave dwellings are being used and preserved. But architects study these homes to learn about the benefits of living underground. Today, underground homes are being built that have up-to-the-minute technology. They are heated and cooled naturally, are safe from stormy weather, and blend into the natural landscape—just like cave dwellings of the past.
For most people, flamingos bring up images of hot, tropical lagoons. The most common flamingo has pink feathers and stands as tall as an adult person. Its curved, black-tipped beak is bigger than its head. Its neck and legs are thin and extremely long. Flamingos are usually found in warm climates near shallow bodies of water.

So imagine the surprise of two young Russian boys in Siberia. They were ice fishing in November. The temperature that day was well below zero, and it was snowing heavily. Suddenly, the boys saw a strange-looking pinkish bird in the sky. It slowly circled lower and lower until it fell onto the snow and lay quietly.

Seeing that the bird was still alive, the boys got their father. He carried the flamingo back home. After warming up and getting food, the rescued bird explored the family’s apartment. But, when the flamingo tried to bite the family dog, it was moved to a local greenhouse. Later, it was named Phila and got a permanent home at a nearby zoo.

Was this a strange one-time event? No! A year later, in nearly the same spot, the same thing happened. Again, the flamingo was rescued. It was sent to the same zoo to live with Phila.

According to flamingo expert Dr. Marita Davison, some flamingos can live in colder climates, including those that nest in an Asian country called Kazakhstan. But these birds have an instinct that tells them to migrate in November when it starts to get really cold.
They usually head south to the warmer climate of Iran. To end up in Siberia, one of the coldest regions in the world, the flamingos would have to fly the same distance in the opposite direction!

Dr. Davison is also surprised that the birds were alone when they landed. Flamingos usually travel in large flocks. Dr. Davison suspects that the rescued flamingos fell out of larger flocks that were flying unseen in the clouds. In fact, a rare sighting of a flock was reported in Siberia in 2015.

Scientists have theories for why the flamingos flew in the wrong direction. But no one knows for sure.
Anansi loved food, but he was far too lazy to cook. Instead, this sly spider spent his time trying to cook up clever ways to taste what his friends were preparing.

One afternoon in his small village, Anansi noticed a delicious aroma coming from his friend Rabbit’s house. Rabbit was stirring greens in a large black cook pot and kindly invited Anansi to stay for lunch. Anansi wanted to eat with Rabbit, but he also wanted to find even more to eat, so he spun a web, tied one end to the cook pot, and the other end to one of his short, thick legs. He asked Rabbit to pull on the web when the greens were ready, and Anansi would hurry back.

Next, Anansi visited Monkey’s house to see what he was cooking. “Good friend, join me for lunch when it’s ready,” Monkey offered. Anansi wanted to find even more to eat, so he fastened one end of a web to Monkey’s cook pot and the other end to another one of his thick legs. “Just give a tug when lunch is ready,” he told Monkey and waved goodbye.

Just down the road at Hog’s house, Anansi smelled sweet potatoes cooking. Hog graciously offered to share his meal when it was ready, but just as before, Anansi wanted even more to eat. Again, he fastened a web to the cook pot and to another one of his short legs.
Anansi repeated this trick at the houses of his friends Tortoise, Hare, Squirrel, Mouse, and Fox. Soon, all eight legs were connected by webs to eight cook pots.

Down by the river, Anansi was dreaming of the feast he would soon be enjoying when he felt a tug on one leg. Then, there was a tug on another leg, and another, and another. Anansi’s legs were pulled and stretched in eight different directions! He jumped into the river to wash away the webs, and when he climbed out, his legs were long and skinny. Anansi regretted being greedy, especially now that he had nothing.
Once there lived a king who ruled over a large and bountiful country. The king was proud of his rich lands and mighty army, but still he wanted more. So, he decided to conquer a small and poor country and add those lands to his kingdom. Then, he would be even richer and more powerful.

The king gathered his army and departed for the poor little country. The soldiers in their fine uniforms marched all day until they came to a forest where they could camp for the night. They cared for their horses, filling a feeding trough with tasty peas.

Many monkeys lived in the forest, and one of them eyed the peas hungrily from a nearby tree. The monkey imagined how delicious the peas would taste. As soon as it was safe, he darted out and scooped up as many peas as his furry hands could hold. Then, he scampered back to the tree to find a high branch where he could sit and enjoy his dinner.

Before the monkey was halfway up the tree, a single pea slipped out of his hand. He desperately grabbed at the falling pea and—alas!—dropped all the peas he had been holding. The sad monkey watched the horses gobble up all the peas on the ground. Too late, the monkey understood that in trying to grab more than he needed, he had lost everything.
The king had been thoughtfully regarding the greedy monkey. He said to himself, “I do not need to learn my lesson the hard way like this monkey. I have all that I need in my own kingdom.” And, with that new knowledge, the king collected his soldiers and marched home the next morning.
The Blizzard of 1888

This passage describes a true event that took place more than 100 years ago. The author reviewed and used information from a variety of sources, such as diary entries, newspaper articles, and museum artifacts.

In 1888, William Steinway was living in New York City when a blizzard hit the area. It raged for days with fierce winds and heavy snow. The city was paralyzed. Few people could get to work. Steinway’s piano company and many other businesses were closed. Schools were also closed. High snowdrifts blocked doorways, sidewalks, and streets. The city’s trains could not run on tracks covered with ice and snow.

Workers from one of Steinway’s factories were able to dig a tunnel through the snow to the stables where the company’s railroad horses were kept. In better weather, these horses pulled railroad cars along tracks around the city every day. During the blizzard, the horses almost starved when no deliveries of hay or oats could make it through the snow. Steinway’s son George took on the Herculean task of making his way through the dangerous storm to buy oats from the city stables. George and his father knew the horses would be needed as soon as the snow could be cleared.

The blizzard also hit one of Steinway’s piano factories. The strong winds lifted the factory roof, and it was nearly blown off. Workers tried to make repairs during the storm, but the wind and freezing temperatures hampered their efforts.
Steinway remained calm despite the damage done by the blizzard. He estimated the time and money needed to recover and began planning. Steinway knew he was more fortunate than many people who would need to use what little money they had just to survive the storm.

Steinway predicted that changes would need to be made for the city to survive another storm such as this. He supported plans to move the railroad to a new location: underground. This was one of the first steps toward building the subway systems we use today.
This is an excerpt from a longer poem, *Under the Mambo Moon*, by Julia Durango. This part of the poem begins with a young girl named Marisol. She is helping in her father’s store when Mrs. Garcia, a customer, arrives.

On summer nights
Papi lets me help out
at the music store.

Papi says you can
read people’s souls
by the music
they listen to;
that hearts
fly home
when the music’s
Just Right.

Papi says
people come here
to buy dreams
and memories.

Mrs. Garcia
gets off at the bus stop
in front of the store.
She walks slowly,
one hand on her back,
trying to push away an ache.
She’s been cleaning houses all day, but still she smiles and stops to talk.

Mrs. Garcia:
On the day of my quinceañera, I wore a gown of blushing pink and a gold tiara.

The tiny rosebuds on my cake matched the real ones in my bouquet, and my gifts reached the ceiling.

A handsome mariachi band played all afternoon and serenaded me with “Las mañanitas.”

On the day of my quinceañera, I was in Mariachi Heaven.
Under the Mambo Moon: 

Dr. Solís

This is another excerpt from *Under the Mambo Moon* by Julia Durango, a poem about a young girl, Marisol, who helps in her father’s music store. In this part of the poem, several customers are visiting the store: João, Catalina, Tia Pepa, and Dr. Solís.

Dr. Solís enters,  
his white hair sticking out all over.  
“Hey, **Doc Einstein**!”  
João calls.  
Dr. Solís chuckles  
and wipes his brow with a linen handkerchief.  

Catalina arrives  
with mangoes  
from the corner grocery.  
She sneaks up  
and gives Dr. Solís a peck on the cheek.  
João blushes.
Tia Pepa hurries in, 
her arms full of shopping bags. 
Catalina says, “Hasta pronto,” 
and hides in the aisles. 
João follows. 
Even Dr. Solís makes a beeline 
for the back of the store. 
Tia Pepa likes to talk.

**Dr. Solís:**
Just as the bomba drummers 
call to each other, 
challenging the dancers 
to reply, 
a salty Puerto Rican breeze 
wend its way north 
and whispers in my ear.

And just like the dancers 
who answer the call, 
heeding the summons 
of the beating drums, 
an old man becomes 
young again and remembers 
his island home.
ability (noun) Ability is the skill to do something.
accidental (adjective) Accidental means not on purpose.
account (noun) An account is a description of an event or experience.
algae (noun, plural) Algae are basic water plants without stems or leaves.
ancient (adjective) Ancient means very old.
Andes (proper noun) Andes is the name of a mountain range.
antelope (noun) An antelope is a fast-running mammal.
appealing (adjective) Appealing means likeable or pleasant.
Arachne (proper noun) Arachne is the name of a character in Greek mythology.
arachnid (noun) Arachnid is the scientific name for spider.
architect (noun) An architect is someone who creates plans for buildings.
aroma (noun) An aroma is a pleasant smell.
aromatic (adjective) Aromatic means having a certain smell.
arrangement (noun) An arrangement is the way things are positioned.
artificial (adjective) Artificial means not natural but made by people.
assembly (noun) Assembly means the act of putting something together.
Atacama (proper noun) Atacama is the name of a desert.
Athena (proper noun) Athena is the name of a Greek goddess.
auditorium (noun) An auditorium is a big room where people can watch a performance.
awe (verb) To awe is to shock or amaze someone.
beautiful (adjective) Beautiful means pretty.
beeline (noun) A beeline is a straight line between two places.
benefit (noun) A benefit is something good that happens because of something.

biologist (noun) A biologist is a scientist who studies living things.

bleaching (noun) Bleaching is when all the color leaves something.

Blondin (proper noun) Blondin is the name of a person.

bloodhound (noun) A bloodhound is a dog with a strong sense of smell.

Bomba (proper noun) Bomba is a type of music from Puerto Rico.

bound (verb) To bound is to run with a leaping stride.

bountiful (adjective) Bountiful means having more than enough.

bouquet (noun) A bouquet is a bunch of flowers.

burly (adjective) Burly means big and strong.

burst (verb) To burst is to suddenly split or break open.

bury (verb) To bury is to put something underground.

canyon (noun) A canyon is a valley carved out by water.

capture (verb) To capture is to catch.

cast of characters (noun) A cast of characters is the group of made-up people in a play.

catastrophe (noun) Catastrophe means terrible disaster.

celebrate (verb) To celebrate is to do something fun or special.

cell (noun) A cell is a tiny, basic part of all living things.

central (adjective) Central means very important to something.

century (noun) A century is a hundred years.

character (noun) A character is a person or animal in a story.

chuckle (verb) To chuckle is to laugh quietly.

claim (verb) To claim is to say that something is true when others may disagree.
climate (noun) Climate is what the weather is usually like in a certain area.

clutch (verb) To clutch is to hold onto tightly.

coiled (adjective) Coiled means rolled up.

comeback (noun) A comeback is a return.

companion (noun) A companion is a friend.

conceal (verb) To conceal is to hide.

conditions (noun, plural) Conditions are the situation in which something exists.

conquer (verb) To conquer is to take control of.

conqueror (noun) A conqueror is a person who takes control of.

Conquistador (noun) A Conquistador is a conqueror from Spain.

continually (adverb) Continually means without interruption.

convenience (noun) A convenience is something that makes life more comfortable.

cook up (verb) To cook up means to invent a plan or an excuse.

coral (noun) Coral is a collection of tiny sea animals.

cramped (adjective) Cramped means uncomfortably small.

crane (noun) A crane is a bird with a long neck and legs.

creativity (noun) Creativity means the ability to think of new ideas.

creature (noun) A creature is an animal or other being.

crop (noun) A crop is a group of plants that are grown for a specific purpose.

cultivate (verb) To cultivate is to grow plants for a specific purpose.

culture (noun) A culture is a group’s values and way of life.

curiosity (noun) Curiosity is interest in learning or knowing something.

current (noun) A current is a body of water moving in one direction.
decade (noun) A decade is 10 years.
defense (noun) A defense is something used for protection.
deliver (verb) To deliver is to bring and hand over.
demonstrate (verb) To demonstrate is to show clearly.
depart (verb) To depart means to leave.
design (noun) Design means the way something is made.
desperately (adverb) Desperately means in a very worried or needy way.
detect (verb) To detect is to notice or discover something.
diet (noun) Diet is the variety of foods that a group usually eats.
Dionysus (proper noun) Dionysus is the name of a character in Greek mythology.
disguise (verb) To disguise is to hide someone’s identity.
dislodged (adjective) Dislodged means knocked out of position.
distinguish (verb) To distinguish means to notice differences.
disturb (verb) To disturb means to change the position of something.
diversity (noun) Diversity means having many different types.
Doc Einstein (proper noun) Doc Einstein refers to Albert Einstein, a famous scientist with wild white hair.
dormant (adjective) Dormant means not active.
doze off (verb) To doze off is to fall asleep.
dune (noun) A dune is a hill made of sand.
dwelling (noun) A dwelling is a home.
eagerly (adverb) Eagerly means in an interested or hopeful way.
ecosystem (noun) An ecosystem is all the plants, animals, and nonliving things in a particular area.
encounter (verb) To encounter is to meet or find.
engineer (noun) An engineer is a person who designs buildings or machines to solve problems and make life better.

engulfed (adjective) Engulfed means totally covered.

envious (adjective) Envious means jealous.

environment (noun) The environment is the land, water, air, and living things in an area.

environmental (adjective) Environmental means about the earth or nature.

expel (verb) To expel is to force something out.

extinction (noun) Extinction is when an entire type of plant or animal has died off and become extinct.

eye (verb) To eye means to watch closely.

eyesight (noun) Eyesight is the ability to see.

fable (noun) A fable is a story with animals that teaches a lesson.

fad (noun) A fad is a trend, like wearing rainbow bracelets.

false (adjective) False means fake.

fastened (verb) To fasten means to tie or attach.

fatal (adjective) Fatal means causing something to die.

fierce (adjective) Fierce means powerful and aggressive.

flock (noun) A flock is a group of animals.

fork (verb) To fork is to split into two.

glacier (noun) A glacier is a large, slow-moving mass of ice.

gland (noun) A gland is an organ in the body.

goldsmith (noun) A goldsmith is a person who makes gold items.

gorge (noun) A gorge is a valley.

graciously (adverb) Graciously means in a thoughtful and kind way.
graze (verb) To graze is to feed on grass.
greenhouse (noun) A greenhouse is a warm building used for growing plants.
hamper (verb) To hamper is to get in the way of progress.
Hasta pronto (phrase) Hasta pronto means See you later.
helicopter (noun) A helicopter is a type of aircraft.
hippopotamus (noun) A hippopotamus is a large mammal that lives on land and in water.
hoist (verb) To hoist is to raise or lift something.
horse-drawn vehicle (noun) A horse-drawn vehicle is something pulled by a horse that carries people and things.
humid (adjective) Humid weather is when the air feels warm and wet.
identify (verb) To identify is to figure out what something is.
impact (noun) An impact is a result.
Indonesia (proper noun) Indonesia is the name of a country.
industry (noun) An industry is a group of businesses that do the same kind of work.
influential (adjective) Influential means able to make people change their ideas.
inhabitant (noun) An inhabitant is a person or animal that lives in a place.
inspire (verb) To inspire means to give someone an idea or feeling.
instinct (noun) An instinct is a behavior that is not learned.
intended (adjective) Intended means on purpose.
interpret (verb) To interpret is to figure out what something means.
invasive (adjective) An invasive plant grows and spreads very quickly.
inventive (adjective) Inventive means able to think of new ideas.
jumble (verb) To jumble is to mix together.

Kazakhstan (proper noun) Kazakhstan is the name of a country in Asia.

Kenya (proper noun) Kenya is the name of a country.

kit (noun) A kit is a baby fox.

Komodo (proper noun) Komodo is the name of a lizard.

lagoon (noun) A lagoon is a shallow lake or pond with warm water.

Las Mañanitas (proper noun) Las Mañanitas is the name of a traditional Mexican birthday song.

lightweight (adjective) Lightweight means not heavy.

logging (noun) Logging is the process of turning trees into wood.

loom (noun) A loom is a tool used for making fabric.

lumberjack (noun) A lumberjack is a person who cuts down trees to make wood.

machine (noun) A machine is a mechanical device.

manufactured (adjective) Manufactured means made by humans or machines.

manufacturing (noun) Manufacturing is the process of making goods in factories.

mariachi (noun) Mariachi is a type of Mexican folk music.

marine (adjective) Marine means relating to the ocean.

massive (adjective) Massive means huge.

meager (adjective) Meager means not enough or limited.

menacingly (adverb) Menacingly means in a threatening way.

method (noun) A method is a planned way of doing something.

Midas (proper noun) Midas is the name of a character in Greek mythology.

mighty (adjective) Mighty means extremely powerful.

migrate (verb) To migrate is to move from one area to another.
mispronounce (verb), To mispronounce is to say a word the wrong way.

moist (adjective) Moist means slightly wet.

molecule (noun, plural) A molecule is the smallest part of something that is still similar to it.

muffled (verb, past tense) To muffle is to make a sound more quiet.

murmur (noun) A murmur is a quiet or gentle sound.

myth (noun) A myth is a kind of traditional story.

natural (adjective) Natural means made by earth.

nerves (noun, plural) A nerve is a small part of the body that carries messages to and from the brain.

nestle (verb) To nestle is to cuddle.

Niagara (proper noun) Niagara is the name of a waterfall.

Norway (proper noun) Norway is a country in northern Europe.

notice (verb) To notice is to become aware of something.

oasis (noun) An oasis is a spot in the desert where water is found.

obedient (adjective) Obedient means well behaved.

odor (noun) An odor is a smell.

optical illusion (noun) An optical illusion is something that looks different from what it actually is.

ore (noun) Ore is a kind of rock that holds valuable minerals.

organism (noun) An organism is any living thing, such as a plant, animal, or fungus.

outrageously (adverb) Outrageously means extremely.

overhang (noun) An overhang is a part that hangs over something.

overwhelm (verb) To overwhelm is to have a strong effect on someone's feelings.
paralyzed (adjective) Paralyzed means unable to move.

perceive (verb) To perceive is to notice something.

pesticide (noun) A pesticide is a substance used to kill insects.

phenomenal (adjective) Phenomenal means amazing.

photosynthesis (noun) Photosynthesis is the process by which plants use energy from the sun to produce food.

Phrygia (proper noun) Phrygia is the name of a place.

pinpoint (verb) To pinpoint is to find exactly where something is.

polyp (noun) A polyp is a tiny sea animal with no backbone.

portmanteau word (noun) A portmanteau word uses parts of two different words to create a new word.

pour (verb) To pour is to flow quickly.

precious (adjective) Precious means valuable.

predator (noun) A predator is an animal that hunts and eats another.

predicted (verb) To predict is to tell what is in the future.

prey (noun) Prey is an animal that is hunted and eaten by another.

proceed (verb) To proceed is to go forward.

process (noun) A process is a series of actions that make something.

produce (verb) To produce is to make.

product (noun) A product is something made and sold.

profitable (adjective) Profitable means something that makes a lot of money.

province (noun) A province is an area of a country.

put out of business (verb phrase) To put out of business means to force to close down.

quinceañera (noun) A quinceañera is a celebration of a girl's fifteenth birthday.
quine (noun) Quinine is a medicine and ingredient that tastes bitter.

rage (verb) To rage is to move with harmful force.

ragged (adjective) Ragged means old and torn.

Raramuri (proper noun) Raramuri is the name of a group of people.

recede (verb) To recede is to move back or away.

reflect (verb) To reflect is to send something, like light, back.

refract (verb) To refract is to change the direction of light or sound.

refrigerator (noun) A refrigerator is a device that is used to keep food and drinks cold.

regard (verb) To regard means to pay attention to.

regardless (adverb) Regardless means no matter what happens.

region (noun) A region is an area that is different from other places in some way.

replace (verb) To replace is to take the place of something else.

resist (verb) To resist is to stay strong against the effect of something.

roiling (adjective) Roiling means moving in a fierce and choppy way.

Sahara (proper noun) Sahara is the name of a desert.

scan (verb) To scan is to search.

scientist (noun) A scientist is a person who studies science.

sea level (noun) Sea level is the average level of the sea and is used to measure the height of an area of land.

separated (adjective) Separated means moved apart.

serenade (verb) To serenade is to perform music for someone, often outside a window.

settle (verb) To settle is to set up a home somewhere new.

settlement (noun) A settlement is a group of homes in a new area.
sharp (adjective) Sharp means able to see or notice things easily.
shimmering (adjective) Shimmering means shining brightly.
shrub (noun) A shrub is a bush.
shudder (verb) To shudder is to shiver with fear or disgust.
Siberia (proper noun) Siberia is the name of a region in Russia.
sightseeing (noun) Sightseeing is the activity of visiting interesting places.
signal (noun) A signal is a message carried by light or sound.
simmer (verb) To simmer is to boil gently.
simultaneously (adverb) Simultaneously means happening at the same time.
siren (noun) A siren is a device that makes a loud warning sound.
skeptically (adverb) Skeptically means with doubt.
sly (adjective) Sly means clever in a sneaky way.
soldier (noun) A soldier is a person who serves in an army.
somersault (noun) A somersault is a rolling movement of the body.
source (noun) The source of something is where it comes from.
species (noun) A species is a kind of plant or animal.
spectator (noun) A spectator is a person watching a show or other event.
squirm (verb) To squirm is to wiggle around.
stables (noun) A stable is a building where horses live and are cared for.
structure (noun) A structure is something built by putting parts together.
subway (noun) A subway is a train that runs on underground tracks.
suited (adjective) Suited means a good match for something.
summit (noun) The summit is the top of the mountain.
summons (noun) A summons is an order to come to a certain place.
suspect (verb) To suspect is to guess.

tableware (noun) Tableware are items like dishes and glasses that are used when eating.

tackle (verb) To tackle is to try to do something difficult.

take pity on (verb) (phrase) To take pity on is to feel sorry for someone.

Tarahumara (proper noun) Tarahumara is the name of a group of people.

technology (noun) Technology is a tool invented to make life easier.

temperature (noun) Temperature is the amount of heat in something.

thrash (verb) To thrash is to strike out at.

tortoise (noun) A tortoise is a turtle that lives on land.

tourist (noun) A tourist is a person who is travelling for fun.

towline (noun) A towline is a rope or chain used to pull something.

track (verb) To track is to watch where someone moves.

traditional tale (noun) A traditional tale is a story that has been handed down over time by a group of people.

transportation (noun) Transportation is something that carries people and things from one place to another.

treasure (noun) A treasure is a valuable item.

tremble (verb) To tremble is to shake.

trough (noun) A trough is a long container used to give food or water to animals.

trudge (verb) To trudge is to walk with slow and heavy steps.

twigs (noun) A twig is a small tree branch.

unusual (adjective) Unusual means not common.

vainly (adverb) Vainly means without success.

variety (noun) A variety is an assortment of many different things.
vast (adjective)  Vast means very great in size.

vault (noun)  A vault is a room for keeping important items safe.

vehicle (noun)  A vehicle is something used for carrying people or goods.

vertically (adverb)  Vertically means in a way that is straight up and down.

vine (noun)  A vine is a climbing plant.

vivid (adjective)  Vivid means clear and life-like.

wade (verb)  To wade is to walk through water.

warrior (noun)  A warrior is a skilled fighter.

weave (verb)  To weave is to use thread to make fabric.

wend (verb)  To wend is to move slowly in a curving path.

whistle (verb)  To whistle is to make a loud, clear sound.

wispy (adjective)  Wispy means thin or airy.

wonder (noun)  A wonder is an amazing feature.

worried (adjective)  Worried means nervous.