

**Future Literacy 80-1****Unit 1. Animals' Weather**

If you've seen animals behave differently just before the weather changes, you might think that they have psychic abilities. However, researchers note that this is probably not the case. They argue that some animals can pick up on environmental cues more quickly than humans. This is because some animals have a better sense of hearing or feeling compared to humans. For example, dogs are able to hear sounds at frequencies that humans cannot. Dogs and elephants are capable of hearing or sensing things from far away, such as earthquake shockwaves and ocean waves. In other words, animals do not consciously understand that a storm may be heading their way. It is more likely that they sense something unfamiliar and are scared by it. The next time you see your dog acting strangely, they may have sensed some changes in the weather. However, it's doubtful that they know that a storm is coming.

**Unit 2. A Rainy Day**

Many people look up at the clouds for signs of rain. But not many people are aware just how many types of clouds there are. In fact, there are about 100 different types of clouds. However, there is no need to know all 100 since they can all be grouped into 10 different categories. Of these categories, one in particular is related to storm clouds. It is called "cumulonimbus". They are very tall and span across the low, middle, and high layers across the sky. The top part resembles a bulging cauliflower and the bottom part is dark in color. This is why you'll usually see dark grey clouds when you look up right before a rainstorm. If you ever see a cumulonimbus cloud in the sky, it's a sign that harsh weather is coming your way. Make sure to get to safety before it rains!

### **Unit 3. Rain, Snow, and Ice**

Many people have seen rain and snow, but hail is much rarer. Hail is formed in thunderstorms when strong updrafts push raindrops into the cold areas of the sky. These areas are cold enough that water freezes into small balls of ice. If the updraft keeps pushing these balls of ice back into the cold areas, the balls grow larger. This can continue until the balls of ice are so heavy that the updraft can't support its weight anymore. When this happens, hail falls to the ground. If the hail is very large, it can seriously damage airplanes, houses, and cars. It can even kill farm animals or people. Some parts of the world get more hail than others. In the United States of America, states such as Nebraska, Colorado, and Wyoming have many hailstorms in a year. Countries like China, Russia, India, and Italy also have similarly dangerous storms.

### **Unit 4. Fish from the Sky**

Tornadoes are tall tunnels of spinning air that form when warm, humid air meets cold, dry air. The air moves so fast that it can spin at about 400 kilometers per hour. Tornadoes can also move as quickly as 113 kilometers per hour, destroying houses and roads along the way. As you can imagine, tornadoes can be incredibly deadly. In the United States of America, tornadoes are known to kill about 80 people and cause over 1500 injuries every year. Many people are hurt by the flying debris. Tornadoes can also bring hail stones the size of baseballs. Scientists and weather forecasters work very hard to warn people before a tornado strikes. They use satellites and computers to check the skies for signs of an oncoming storm. Some scientists are even known to chase storms to measure important data. However, for regular people, it's important to stay alert and avoid the storm.

## Unit 5. Nature's Building Materials

Bricks, cement, and steel beams are usually what come to mind when we think of building a house. But how would one build a house without any of those materials in freezing temperatures? Inuit people build igloos, a type of house made of snow and ice. The first step to building an igloo is choosing a good location. The next step is to find the perfect type of snow, one that is hard and doesn't crumble easily. The size of the igloo needs to be kept small so that it can keep the heat inside. Using a snow knife, blocks of snow can be cut out and then stacked in a spiral. The gaps are smoothed over using gloves. This process can take several hours, but it is an important skill to learn. It is easy to get lost in a large tundra. Without a tent, knowing how to build an igloo could be the key to survival.

## Unit 6. Home on the Water

Kerala, a state of India, is famous for its houseboats known as Kettuvallam. These houseboats are an important part of Kerala's history and culture. A long time ago, these boats were used to boost the region's economic development. The boats would carry men and cargo, such as spices and rice. They also provided good accommodations for the traders and their family members. The houseboats are so big that they can carry several tons of cargo as well as passengers. Nowadays, however, these houseboats fell out of favor for more modern means of transportation. The boats are now used almost exclusively for tourism. Many tourists travel to Kerala to spend their holiday relaxing in these beautiful boats. This led to a boom in Kerala's tourism and travel industry. It's not hard to imagine what draws tourists to these boats as they are both luxurious and relaxing.

## Unit 7. The Sami People

The Sami are descended from the nomads who once inhabited the northern parts of Scandinavia for thousands of years. After the Finns took over Finland, the Sami were pushed out and dispersed all across the country. Until very recently, the Sami were nomads who herded reindeer. They hunted and herded reindeer while living in tents or huts. Nowadays, many Sami people are not nomadic herders. They live in permanent modern houses with their families. Those that still herd tend to their reindeer by themselves while the rest of their family stay at home. Some Sami people work as fishermen while others work in diverse industries such as farming, freshwater fishing, and mining. Still others work for the government or at industrial and commercial companies. You can meet them in cities and towns as more and more of them participate in the professional and academic world of Scandinavian society.

## Unit 8. Life in the Andes

Life in the Andes seems incredibly difficult when you consider the lack of oxygen, cold weather, and harsh sunlight. It's no surprise that many people wondered how humans learned to adapt to such environments. Some scientists have found that studying the DNA of South American highlanders may be the key to answering these questions. John Lindo, a geneticist at Emory University in Atlanta, studies the genomes of modern highlanders. His research suggests that highlanders have evolved to have a unique gene related to heart health and muscle development. However, some scientists argue that this is not enough evidence to support the idea that highlanders have developed special genetics from living in the Andes for generations. Whatever the case, we can all agree that it takes a special kind of person to be able to survive and thrive in such harsh conditions.

## Unit 9. Get Up and Move

Exercise is important for your health. It's especially important today when many people sit for long periods of time looking at their computer or smartphone. A few fun ways to exercise can make them a lifelong habit. For example, team sports are a good way of getting into sports. Joining a soccer or baseball team can introduce you to a regular schedule of team practices and games. It can also give you more motivation since you are having fun with your teammates. It can also help you to walk to school every day instead of taking the bus or being dropped off by your parents. Because you have to go to school on weekdays, this guarantees that you get some exercise at least five times a week. Other fun activities can be simple things like playing outside with your friends or dancing at home.

## Unit 10. Body Image

Body image refers to how you feel about your body as well as specific beliefs you hold about certain parts of your body. Some people may feel self-conscious about their height or their weight. Others may feel very confident about their skin or their hair. Body image is closely related to self-esteem. If you have a high sense of self-esteem, it means you feel good about yourself both mentally and physically. In other words, it's important to try and keep a positive body image. Remember that there is no perfect body and that everyone has a unique body type. Try to have healthy habits and take care of your body, but always remember to be confident about yourself. No matter how fit your body is, it is possible to have low self-esteem. That's because a good figure doesn't mean that one has a good body image.

## **Unit 11. What Does Exercise Do?**

Everyone knows that exercise is important for your physical health. Many people work out in order to keep their bodies in good shape. But exercise is also an important part of your mental health. For example, running every day can give your brain a boost and elevate your mood by making your heart beat faster. Exercise can also help your brain cells grow and improve your memory. Experts suggest that running and swimming are the two best exercises to make your heart pump blood faster to your brain. It's also a great way to relieve stress. You can also add some meditation to your workout. By relaxing your body through meditation, you can relax your body and decrease the inflammation that is caused by stress. In the long run, regular exercise can help you live a longer, happier life.

## **Unit 12. What Are Martial Arts?**

Martial arts are a very wide term that includes many different kinds of activities. Some examples of popular martial arts are Kung fu, Hapkido, Judo, Karate, and Tae Kweon Do. All of these martial arts are based on both physical fighting techniques and mental discipline. Learning just one of these martial arts takes a lot of time and practice. In addition, martial arts are not always about kicking and punching. Aikido, for instance, focuses on defensive techniques to gain control of the opponent. One of the most famous martial artists was also a movie star. His name was Bruce Lee and he starred in movies and television shows, often as a character who defeated his opponents using martial arts. Thanks to Bruce Lee, martial arts captivated the imagination of many people in the cinema industry. Even today, you can walk into a movie theater and watch an action movie where the action scenes are inspired by Bruce Lee's work.

## Unit 13. Archimedes' Bath

Archimedes discovered his famous principle when he was tasked by King Hieron II to find out if his crown was made of pure gold. The king was suspicious that the crown maker had secretly mixed in some silver and kept some of the more valuable gold for himself. One day, Archimedes was taking a bath when he noticed when he got into the bathtub, he displaced the same volume of bathwater as his body. He applied the same principle to compare the volume of silver and gold. He discovered that gold displaced less water than silver when comparing the same mass of the two minerals. By comparing the king's crown with a lump of pure gold that weighed the same amount, he discovered that the crown maker had cheated by not using all of the pure gold that was given to him. This ground-breaking discovery is known today as Archimedes' principle.

## Unit 14. Counting Raindrops

A rain gauge is an instrument that is used to measure the amount of rainfall during a specific amount of time at a given location. There are many different types of rain gauges that use different techniques. All rain gauges have something in common. They all have a collector funnel and a mechanism that measures the water that has been collected. Filters are also used to ensure that things like bird droppings and leaves don't get inside the gauge. To properly measure rainfall, the rain gauge should be placed above the ground. If placed at a level that is too low or too close to other objects, rainwater may bounce off the floor or the surrounding objects and into the rain gauge. The easiest type of rain gauge to use is the graduate cylinder. A cylindrical tube is used to collect the water for a set period of time. Then, you simply read how much rainwater was collected using the measurement markers on the side.

## **Unit 15. Faster! Faster!**

Carl Benz developed the first stationary gasoline engine in 1879. This engine was incredibly popular and commercially successful. In fact, it was so successful that it enabled him to focus on his dream of developing a car that ran on a similar engine. Benz succeeded in accomplishing his dream by creating the first gasoline car. This car was designed as a three-wheeler instead of a four-wheeler. This is because there weren't any adequate steering systems for four-wheeled cars that satisfied Benz at the time. This vehicle was an improvement over other engine-powered vehicles. For example, Nicolas-Joseph presented the three-wheeled steam cart in 1769. This vehicle weighed 4000 kilograms, which was a huge disadvantage. In 1883, Edouard Delamare-Deboutteville and Leon Malandin built a three-wheeler powered by a combustion engine. Unfortunately, their test vehicle exploded, and they had to give up their project after the frame of their second version broke.

## **Unit 16. Tallest and Shortest**

The tallest man in history was Robert Pershing Wadlow. He was born on the 22nd of February, 1918. By the time he was nine years old, he was big enough to carry his father, who was 1.8 meters tall and weighed 77 kilograms. During his lifetime, Robert had to eat a lot to maintain his enormous body. The most he ate a day was 8000 calories. That was nearly three times as much as an average adult male's daily intake. Unfortunately, Robert fell ill from a septic blister on his right ankle. Robert died in 1940 at a hotel in Michigan. At his death, he was 2.72 meters tall. He was so tall that his coffin was 3.28 meters long! Robert's legacy lives on in the Guinness Book of World Records as the undefeated record holder of the tallest man ever.