Unit 1: A Chameleon's Colors

Narrator: There are 202 species of chameleon in the world, that scientists know about. 42 percent of these different types of chameleons live in Madagascar.

These creatures are famous for their ability to change color. For a long time, scientists thought chameleons changed color to hide from other animals. But now they know that the main reason chameleons change color is to communicate with each other. Chameleons can change color to attract other chameleons or to warn them to go away. They can use their colors to show that they are angry or scared. Sometimes, their colors also change because of changes in the temperature.

So, if chameleons don't change colors to hide from predators, how do they stay safe?

It turns out that chameleons stay safe by moving back and forth in a strange way. By following this odd system of movements, the chameleon looks less like a moving animal, and more like a leaf being blown by the wind.

A chameleon's tongue is very long and moves very fast. To catch food, a chameleon hides in the trees until an insect walks by. Then it shoots out its tongue to catch the insect. A chameleon can catch insects as far away as two times its body length. A chameleon's tongue is made of bone and muscles. And the end of its tongue is very sticky. The muscles at the back of the tongue prepare the sticky parts to shoot out—just like how a person pulls back the string of a bow to get ready to shoot an arrow. Then they let go! The tongue shoots forward at a great speed, and the insect is caught in the blink of an eye.

Chameleons are amazing creatures. But like many other animals, they're in trouble. Many species of chameleons are endangered. This is because the forests and other areas where they live are disappearing or are being changed by people. And when the area is changed too much, it becomes hard for chameleons to live there.

Scientists are working to help endangered chameleon species, by learning as much as they can about these colorful creatures.

Unit 2: Exploring Laponia

Narrator: The Laponia World Heritage Site in Sweden is located just above the Arctic Circle. It is one of the largest wilderness areas in Europe. Orsolya Haarberg and her husband, Erlend, are nature photographers. They have traveled all over Laponia to take photographs of the area. There are no people around for miles. And many places in Laponia are extremely hard to get to.

But the Haarbergs are familiar with this land, both its beauty and its danger. They know the challenges of traveling, living, and working in an area that is completely untouched.

Orsolya Haarberg: You just get into such a special mood there. You really slow down on these trips.

Narrator: The Haarbergs have returned to this land many times. Winter is the easiest time to travel around Laponia. The Haarbergs use sleds to pull their gear over the smooth snow. With the sleds, it's easier to transport heavy gear. The weather can get very cold here during winter—below -30°C—and the winds are very strong.

In summer, the sleds don't work, so the Haarbergs have to carry all their gear on their backs. They carry food such as oatmeal, crackers and cheese, chocolate, and nuts. There is no communication with the outside world here.

And it's easy to get hurt or sick if you're not careful. On one trip, Orsolya slipped on a rock and fell into a river. Luckily, she wasn't seriously hurt.

The Haarbergs work well together because they always support each other. They work as a team to take photos that show the amazing beauty of this land.

Unit 3: The Mozart Effect

Narrator: This is Dr. Jim Coan, a psychologist from the University of Virginia. He's doing an experiment to test the Mozart Effect. He is trying to find out if listening to classical music really makes you smarter. First, Jim tests people's IQ using some word puzzles. Here's the first puzzle.

Dr. Jim Coan: 12 MOTY. What do you think that might mean?

Participant: I don't know.

Participant: I don't know.

Narrator: Do you know what 12 MOTY means?

Dr. Jim Coan: Let's have a look. 12 months of the year.

Participant: I knew that one, I just didn't get it.

Dr. Jim Coan: OK, so let's try another one. 7 WOTW.

Participant: Hmm. 7 weeks of the year?

Narrator: 7 WOTW. What do you think this stands for?

Dr. Jim Coan: 7 wonders of the world.

Participant: Oh.

Participant: Oh, man. This is messing me up, man!

Narrator: The people in Jim's test aren't doing so well. But next, Jim wants to find out if listening to classical music can improve people's ability to figure out the answers to his puzzles. So, we're going to play some Mozart to see if the music can raise people's IQ. Now that they've listened to classical music, will the people in the experiment do better? Try this puzzle: 24 HIAD. What do you think it means?

Dr. Jim Coan: 24 HIAD.

Participant: 24 hours in a day.

Participant: Think I got this one, 24 hours in a day.

Participant: 24 hours in a day.

Dr. Jim Coan: Yes, that's exactly right. There you go, good.

Narrator: Did you get this answer too? If so, well done. Let's try another one. 18 HOAGC. Do you know the answer?

Dr. Jim Coan: 18 HOAGC.

Participant: 18 hours on a geometric clock?

Participant: 18 holes on a golf course.

Dr. Jim Coan: That's it!

Participant: 18 holes on a golf course.

Participant: Hah, man! I'm smart!

Narrator: Were you able to figure out the answer? Most of the people in Jim's experiment seem to do better after listening to Mozart for just a short while. Does this mean that listening to classical music does make you smarter? What about other kinds of music, like rock music? After doing more tests, Jim found that music—any kind of music—can help improve people's focus, reasoning abilities, and even creative skills.

Dr. Jim Coan: The Mozart Effect is a misconception, because it doesn't matter what music you listen to, as long as you like it.

Narrator: In other words, it's your enjoyment of the music that your brain reacts to, not the music itself.

Unit 4: The Red Planet

Narrator: Mars is the most studied planet in the solar system after Earth. Today, NASA and other space programs are working to send people to Mars.

However, we still have much to learn about the red planet. Scientists believe Mars was formed about 4.5 billion years ago. It is the fourth planet from the sun, and the second smallest planet in the solar system. Its diameter is almost the width of Africa, and its surface area is similar to that of all of Earth's continents combined.

Just like Earth, Mars is a rocky planet. The ancient Romans named the planet Mars after their god of war because of its blood-red appearance. We now know that Mars is red because it is covered with red dust.

Today, Mars is dry, barren, and cold. Temperatures can be as low as -142°C . But scientists think that billions of years ago, Mars was much warmer, and had liquid water on its surface. Scientists have found lakebeds and river valleys on Mars, showing us where water once flowed.

Mars also has volcanoes such as Olympus Mons, the largest volcano in the solar system. It is three times the height of Mount Everest and was once active. But by about 50 million years ago, all volcanic activity on Mars stopped. Water can still be found on Mars in the form of polar ice caps. Because of this, some scientists believe that life may have once existed on the red planet.

Since the 1960s, scientists from around the world have launched missions to Mars. They want to understand the planet, its past and its present. They hope to discover that the planet can support life once again. There are some who even think that life on Mars might be the key to a bright new future for humanity.

Unit 5: New York Skyscraper

Narrator: New York City is home to over 6,000 high-rise buildings. It's an amazing sight. But have you ever wondered what it's like to build a high-rise in one of the most crowded places in the world? Let's find out from the people working on One Bryant Park.

There are several factors that make this work challenging, especially on the corner of 42nd Street and Sixth Avenue. This location is one of the busiest places in the whole city. The first challenge was digging the building's foundation. It took an entire year for workers to remove 198,000 cubic meters of earth. After the foundation was finished, workers could begin bringing in building materials.

Thousands of kilograms are received at the site each day. There is very little room here in the middle of Manhattan, so there is only one option for getting the materials to the workers: Everything has to be lifted up into the tower.

About 200 meters above ground, the workers are hard at work. This crane operator is so high up that he can't see what he's lifting. Workers far below him provide careful instructions on what to do. The potential for mistakes is high, so there is no room for error.

The biggest job is lifting these huge beams that form the structure of the building. But first, the beams have to make it there. Getting access to the site is not so easy. Driving a truck this size through city traffic can be a challenge. Trucks start coming in at 5 a.m. And as the day continues, the traffic only gets worse. After the beams arrive, the men work quickly. With a building this size, everything is big—and that always presents a challenge.

This is one of five water tanks that will hold the total of 260,000 liters of water. Its size makes it difficult to place. But if you think this looks hard, the greatest challenge is yet to come: the spire. It's so large that it comes in 70 separate pieces.

Michael Keen: Going into New York City, you basically lose two days. It is true what they say, this is the city that never sleeps. And there's always traffic out there to deal with. It gets a little hairy at times, you know, but you have an escort behind you and he kind of blocks it off a little bit. Even though New York is a really big city, the streets aren't the biggest.

Narrator: Each piece must be lifted and put together nearly 300 meters above ground. With its spire, One Bryant Park stands 366 meters high, making it one of New York's tallest buildings. It attracts residents and tourists alike, and forms an important part of the New York City skyline.

Unit 6: BioBlitz

Participant: That's so cool.

Participant: Let me see.

Participant: … microscope.

John Francis: These BioBlitzes help us awaken the public, especially those in cities, to nature in their own backyard.

Participant: That's the first time I've ever seen a frog up that close.

Participant: Yeah, right!

Participant: I've seen them at the aquarium but …

Participant: I … these guys are called chorus frogs sometimes …

Narrator: These students and scientists are taking part in a BioBlitz to create an inventory of the area.

John Francis: And in some cases, we're finding absolutely new things that the park service didn't realize existed in this park.

Narrator: This BioBlitz is taking place in the Golden Gate National Recreation Area in California. The team of around 9,000 volunteers, led by 320 scientists, is helping to find and identify all the different plant and animal species in the park. They find different fish, birds, and tiny insects. The volunteers also work through the night to find creatures that only come out after it's dark. Each new species must be recorded and classified.

John Johnson: People are so excited to be out here. The weather doesn't matter—it was beautiful yesterday and we've seen such an incredible diversity of plants and animals—oh, nothing could be better.

Narrator: The team continues to work in the rain. They take pictures and film videos, and immediately post these online for other people to see.

Participant: This is really, really cool.

John Francis: We're telling people that, you know, they should take a look where they are and start enjoying nature and discovering it.

Narrator: After the BioBlitz ends, the information gathered is shared at a festival for people who live in nearby communities. They learn about the species that were found in the area so that they, too, can help protect these amazing plants and animals.

Presenter: So, the grand total for the number of species that we found in this BioBlitz was 2,304.

Unit 7: Dinosaurs: A Brief History

Narrator: Probably no other creatures on the planet have struck as much fear and wonder in our hearts as dinosaurs.

The earliest dinosaurs appeared about 245 million years ago during the Triassic Period. At that time, most of the land on earth was joined together in a supercontinent called Pangaea. Over millions of years, Pangaea broke into different parts. Different groups of dinosaurs now lived on different continents. As the dinosaurs adapted to live in their own environments, this gave rise to different dinosaur species.

There were many types of dinosaurs, in all shapes and sizes. Some dinosaurs were very small, like Compsognathus which was about the size of a chicken. Others were huge, like Dreadnoughtus which was 26 meters long and weighed 59,000 kilograms. It was probably the largest land animal to have ever lived.

Dinosaurs ate differently too. Herbivores, like Hadrosaurs, had strong, flat teeth for breaking up plants. Meanwhile, carnivores, or meat eaters, made up about 40 percent of dinosaur species. Some predators, like the raptor Deinonychus, worked together to hunt larger prey.

Other dinosaurs also lived in family groups. Their footprints tell us that some of these ancient reptiles traveled together. Evidence also shows that some families may have visited certain sites every year to lay eggs.

But by around 66 million years ago, most dinosaurs died out. And the reason why is still a mystery. One popular explanation is an asteroid strike. But in reality, many different things probably led to the dinosaurs' extinction. In fact, dinosaurs were already disappearing by the time the asteroid struck.

However, several dinosaur species survived. Some are even relatives of today's birds. The world has never again seen land creatures as great as the dinosaurs. But they continue to live on through their fossils left behind. There are many more species still to be discovered.

Unit 8: Fairy-tale Castle

Narrator: In 19th-century Germany, there lived a young king named Ludwig II. As a boy, Ludwig lived in a castle in the countryside. There, he spent his days listening to stories and operas about brave knights and great kings. Ludwig especially loved the operas written by the great German composer Richard Wagner. These operas would later inspire Ludwig to build a beautiful fairy-tale castle not far from his childhood home. He called the new castle Neuschwanstein Castle. A shy king, Ludwig built Neuschwanstein because he wanted a place where he could relax far away from his busy court.

Neuschwanstein was built to look like a fairy-tale castle, with its tall round towers and high white stone walls. It was built in honor of Richard Wagner. Parts of the castle, like this courtyard, were built to look like stage designs from Wagner's operas. Inside the castle, Ludwig filled rooms with paintings of poets, knights, and kings. In some rooms, he asked for pictures that showed scenes from the Bible, like this one formed out of gold-covered stone.

Sadly, King Ludwig died before his castle was completed. He slept only 11 nights in the castle. Out of 200 rooms, only 14 were finished before his death, and parts of it still remain incomplete to this day.

Neuschwanstein Castle was opened to the public shortly after King Ludwig's death. It is now one of the most visited castles in Europe, with about 1.5 million visitors a year. It also inspired the look of Disneyland's famous Sleeping Beauty Castle.

Although Ludwig II never saw the final Neuschwanstein, his castle has inspired many more happily ever afters.

Unit 9: Snake Catchers

Narrator: Skip Snow and Mike Rochford are snake catchers. They work in Florida, in the Everglades National Park. They're looking for Burmese pythons. Burmese pythons are not a native species here. But over the past decade, these snakes have grown in numbers in the Everglades, and are now eating too many of the native birds, small mammals, and even large reptiles.

Because the pythons are harming the local wildlife, Skip and Mike's team are doing their best to catch and remove this invasive species. They are also studying how the pythons live and move around the swamps. The team puts tiny, harmless tracking devices into several pythons. Then they release the snakes back into the wild, far away from where they were caught.

Burmese pythons can grow up to 7 meters long and weigh up to 90 kilograms. And they are very good swimmers. Minutes after the pythons are released, the team looks for them. The team uses an antenna to search for signals from the tracking devices. But they can't locate the snakes. So, the team uses a plane to help them in their search.

The Everglades National Park covers an area of 1.5 million acres. The team's plane has a more powerful antenna, and Mike is hoping it will pick up signals from the snakes. After much searching, a signal appears. The tracking devices show that the snakes have traveled over 56 kilometers back to the place where they were first caught. This tells the team that it will not be easy to get rid of the pythons. These creatures have made the Everglades their home.

But Skip and Mike are not giving up. They will continue to catch and remove the pythons. It is important they do this, so that they can protect the many other animals that live in the Florida Everglades.

Unit 10: City in the Clouds

Narrator: Machu Picchu is an ancient city hidden away in the mountains in South America. Located northwest of Cusco, Peru, Machu Picchu was constructed by the Inca people over 500 years ago.

At its most powerful, the Inca empire stretched about 2,500 miles along South America's Pacific coast, from modern-day Ecuador down to Chile. This distance is nearly the horizontal width of the United States.

Machu Picchu once stood at the center of this empire, and today, it is one of Peru's best-preserved archeological sites. It is also an impressive example of Incan engineering. In Machu Picchu, the Inca built grand palaces, plazas, and temples out of stone. And they did this without using wheels or metal tools. One special aspect of its construction is the way the Inca built walls. They did not use any sticky substance to make the blocks of stone stick together. Instead, the stones were cut so precisely that they fit together tightly.

Machu Picchu is located on two fault lines, so there are often earthquakes there. But because of the way the stones were cut, during an earthquake the stones in the walls move slightly, and then fall back into position again. This is perhaps why the ruins are so well-preserved.

Although local communities knew about Machu Picchu, it remained unknown to the outside world for hundreds of years. Even the Spanish, who invaded the Inca's lands in the 16th century, never came across the site. It wasn't until 1911 when Melchor Arteaga, a local farmer, showed the site to Yale University Professor Hiram Bingham, that the ruins of Machu Picchu became known to the public. Bingham and other explorers after him spent much of their lives studying Machu Picchu and learning more about the Inca empire.

In 2007, Machu Picchu was voted one of the new Seven Wonders of the World. Today, visitors from around the world come here to walk in the footsteps of the amazing Inca people.

Unit 11: Our Plastic World

Narrator: Plastic is everywhere. Almost everything we use today is made of plastic. But how is plastic made? Most of the plastics we use today are synthetic. Synthetic plastics are made from fossil fuels like oil. Every year, world production of plastic increases.

Since 1950, mankind has made about 9.2 billion tons of plastics. That's nearly the same weight as 1,600 great pyramids of Giza! The problem is, much of this plastic ends up as trash—especially single-use plastics like straws, grocery bags, and packaging products.

Single-use plastics make up about 40 percent of all plastic waste. They end up ruining our oceans, hurting wildlife, and polluting communities around the world.

But we can take action to help stop this. For example, we can use fewer single-use plastic items in our day-to-day lives. By simply choosing to use reusable alternatives, each person can make a huge impact in decreasing plastic waste.

Another way to reduce plastic pollution is by developing bioplastics—plastics made from plants. These forks are made from a type of plant. Bioplastics can break down much faster than synthetic plastics—in weeks instead of hundreds of years.

Scientists are also using materials like rubber to make bioplastics. The sap from this rubber tree can be used to make all kinds of things such as gloves, tyres, and mattresses.

Plastic is present in almost every aspect of modern life. But by reducing the amount of plastic we use and throw away, and by producing more bioplastics, we can help save the planet.

Unit 12: Earhart Mystery

Narrator: Over 11,000 kilometers of empty ocean lie between Amelia Earhart and her attempt to be the first person to fly around the world following the Equator. She and her guide, Fred Noonan, take off from New Guinea and head for Howland Island, a tiny island in the middle of the Pacific. It was the last time anyone would see her.

After search efforts by the U.S. Navy found nothing, they concluded that Earhart ran out of gas and crashed in the open ocean near Howland Island. They believe her plane is laying thousands of kilometers down on the ocean floor.

While many accept this, there is no significant evidence to prove it. Some people have other ideas about what might have happened to Amelia Earhart. Some investigators imagine something very different taking place in the plane after Earhart's last radio message.

One idea is that Earhart decided not to continue looking for Howland Island. With only several hours of gas left in her tanks, they believe she flew to another island called Gardner Island (now known as Nikumaroro). As she approached, she landed on a reef and then went to the island. Earhart and Noonan waited for help to come, but with no water, died of thirst.

Another idea is that Earhart changed her route, taking a completely different path to the Marshall Islands—a group of islands that, in 1937, were controlled by the Japanese. It may sound like a Hollywood movie, but the idea that Earhart was taken prisoner by the Japanese is supported by many people who claimed to have seen the two captured American flyers. They believe that Earhart and Noonan both died while being held by the Japanese.

Yet another idea is that Amelia Earhart's disappearance in 1937 was not an accident. Some believe she was actually an American spy. Earhart's mission? To pretend she was having problems with her plane, so she would then have to fly to the Marshall Islands. Why? To give the U.S. Navy a reason to search Japanese waters in the Pacific.

Interestingly, just days after Earhart disappeared, the United States asked Japan if they could search the Marshall Islands. The Japanese said no.

One of the strangest ideas about what happened to Earhart was that she survived the war and returned to the United States to live the life of a New Jersey housewife by the name of Irene Bolam.

The mystery of Earhart's final flight has led to many different ideas of what really happened to the famous pilot. Will we ever really know what happened? It may be doubtful, but what is certain is people will continue to try to find answers.

Before leaving on this adventure, Earhart had told her friends that this would be her last big flight. She also left the world with these words: Find me if you can—and we've been hunting for her ever since.