

Carl Linnaeus



Science in Action: Kyle and Jamie

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Science in Action: Kyle and Jamie



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Kyle's Nature Adventures

Kyle lives in a small town with meadows and tall forests. He is curious and loves exploring outside.

Kyle wakes up each morning with the sun shining through his window. He jumps out of bed and gets dressed. After breakfast, he rushes outside for a new adventure.

Kyle's home is near a big meadow. Kyle loves to sit in the tall grass. Kyle also likes to listen to the sounds of nature.



One sunny morning, Kyle and his mom were walking past their favorite tree. This is when they met his grandfather. His grandfather has lived in the small town his whole life.

"Hello, young explorer," he said to Kyle. "What brings you all to the meadow today?"

"We are looking for adventure," Kyle said. "We want to see what is past the trees and shrubs."



His grandfather laughed. "Well, you have come to the right place. This meadow is full of adventures. You just need to know where to look."

His grandfather became their guide. He showed Kyle and his mom how to spot the tracks of small animals. He also taught them how to listen for the sounds of tiny creatures hiding in the bushes.

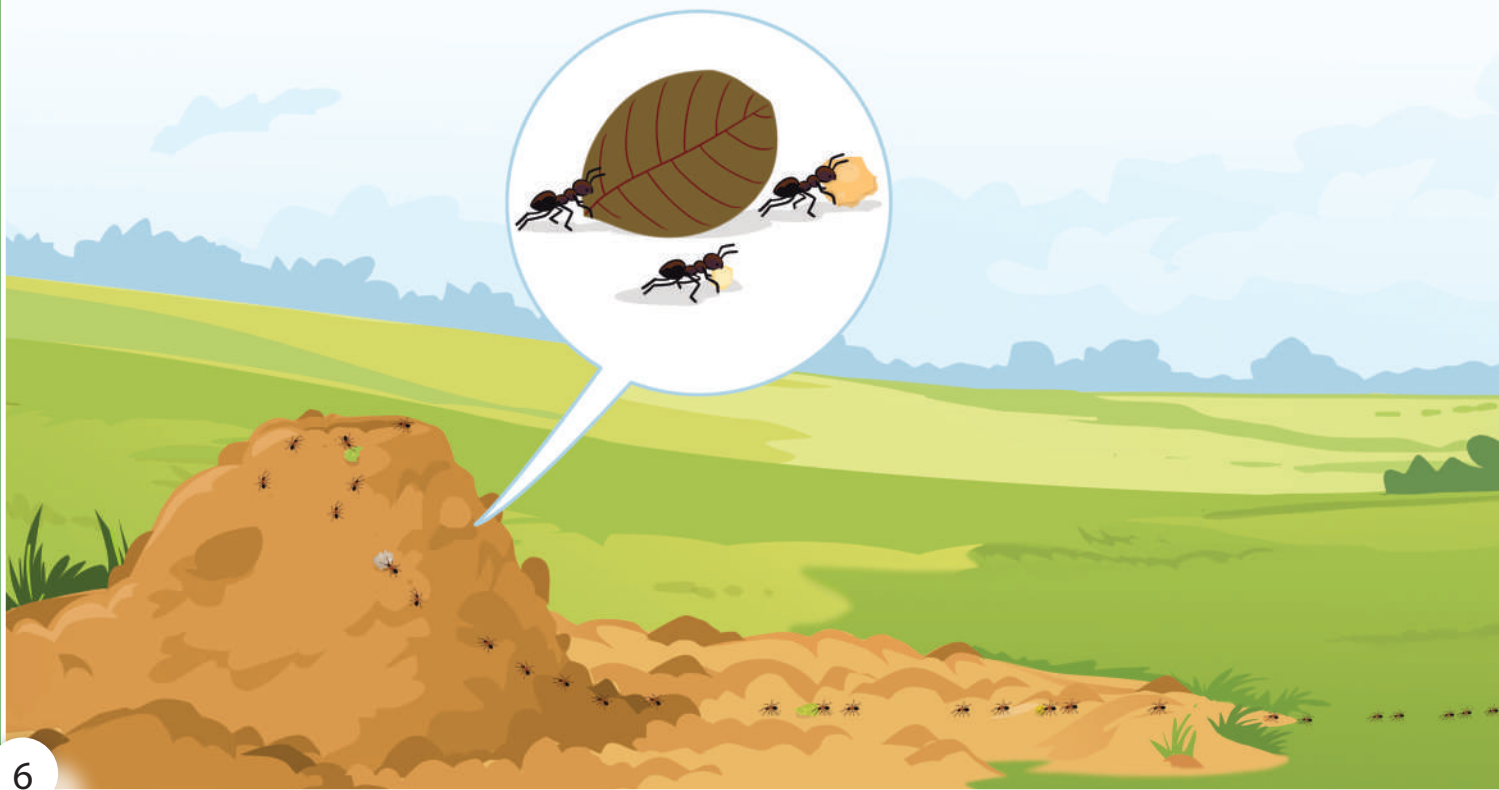


“Look over there,” his grandfather whispered, pointing to some yellow flowers. “Do you see that tiny spider spinning its web? Spiders are nature’s builders. They make their webs with silk threads that are stronger than steel.”

Kyle’s eyes grew wide as he watched the spider carefully weave its web. He had never seen anything so amazing before.



As the days passed, Kyle, his mom, and his grandfather explored every area of the meadow together. They found ladybugs hiding under leaves, caterpillars chewing on green leaves, and even a family of mice sleeping inside a tree log. But Kyle's favorite discovery of all was the ants. His grandfather showed Kyle how ants work together to build tunnels underground. They watched as ants carried pieces of leaves and crumbs of food.



"Ants are amazing," his grandfather said with excitement.

"They may be small, but they are very social. They teach us that when we work together, we can do great things."

Kyle tried to imagine himself as part of the busy ant colony, helping his friends carry food and build tunnels.

The one thing Kyle was sure of is that he loved the outdoors. He loved being in nature, in a field or in the woods. Whatever he did in life he wanted to be outdoors.



One afternoon, Kyle sat under his favorite tree with his mom. He decided he wanted to learn more about ants and other insects.



The two of them went to the library to check out some books on ants. Kyle spent hours reading about different types of insects.

"I want to be an scientist when I grow up," Kyle announced to his parents one night at dinner.

Kyle's days became filled with ant adventures. He drew pictures of insects and of ants marching in lines and building their homes in the soil.



The next summer, Kyle went to summer camp. He met other children who loved nature just as much as him. “Did you know that ants can carry things that are much heavier than they are?” Kyle asked his friends at camp.

His friend Emma laughed. “Wow, Kyle, that’s amazing! I wish I could lift heavy things like ants can.”



As Kyle grew older, his love for insects, the outdoors, and nature grew stronger. He went to college and learned more about science and the environment. He studied how insects help plants grow and keep the soil healthy.



Kyle Bradford: Studying Ants

Kyle's Adventures with Bugs

Have you ever seen an ant? They are small, hardworking insects that live almost everywhere! Let me tell you about Kyle Bradford. Kyle is a type of scientist called a biologist. He loves studying insects. He works for an ecology program in New York that researches plants and animals and teaches people how to work with the land.



Discovering Science

In middle school, Kyle really liked science and math. This is also when he learned that Earth has some big problems. If Earth gets too hot, it can cause problems for plants, animals, and people. Kyle knew that he wanted to help fix these problems.



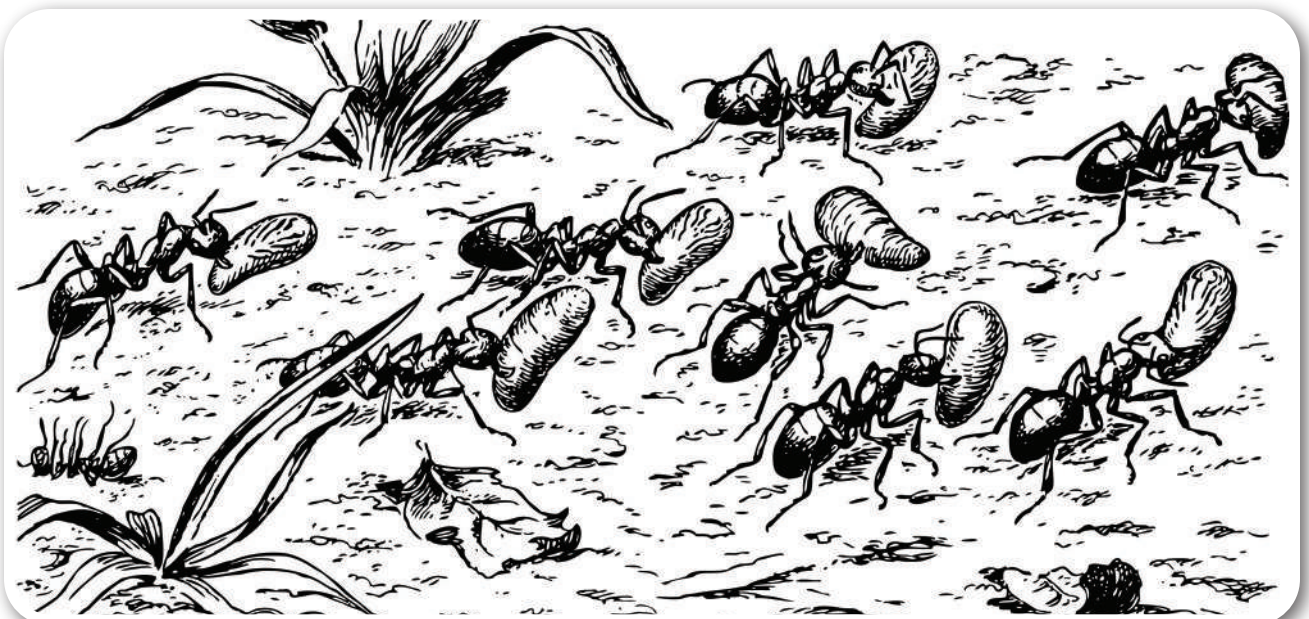
Going to College

Kyle went to college at the University of Vermont. He learned how to farm in ways that are good for Earth. When he started working at an ecology program after college, he started learning about field biology. Field biology is studying plants and animals in their natural area.



Studying Ants

One of Kyle's projects was to study ants. He looked at ants using a microscope. He saw all their tiny details like hairs. He noticed how different kinds of ants like to live in different places. Some ants like dry fields, and some like shady forests. Kyle learned that there are about eighty different kinds of ants in the area where he works. One ant is called the Amazon ant. It cannot do a lot of things for itself. So, it makes other ants do the work.



Ants Are Helpful

Ants are also very helpful. They spread seeds so new plants can grow. They also move through the soil. This helps make the soil better for plants. Some ants eat all kinds of food. But other ants prefer tiny bugs or seeds.



Ants in Danger

Some ants are in danger of being gone forever. One type of ant Kyle studies likes living in grassy meadows. If the fields change a lot, the ants can lose their homes. Kyle works to find ways to protect these ants.



Taking Care of Nature

One problem Kyle worries about is animals and plants losing places to live. When too many houses or roads are built, animals like ants can lose their homes. Kyle also worries about plants that are not native to the area. These plants can cause problems for plants and animals that have lived in the area for a long time.



Teaching and Sharing

Kyle loves sharing what he knows with others. He talks, writes, and invites people to see the amazing world of ants. He thinks people can help take care of nature better if they know about it.



Working Together

Kyle believes that science isn't just about remembering facts. It is about exploring, imagining, and discovering new things. He thinks everyone can be a scientist if they are curious.

Kyle knows that protecting nature takes teamwork. Scientists need help from everyone, even artists and musicians. He hopes more people will learn about nature and help take care of Earth.



Keep Exploring

Kyle hopes you explore nature, too! There is always something new to discover in nature. Maybe one day, you will be a scientist like Kyle and help protect Earth!



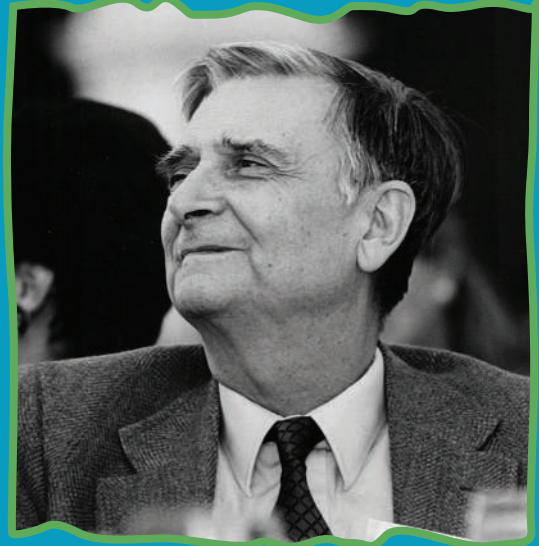
Inspired by . . .

To be **inspired** by someone means they made us want to try something.



E. O. Wilson, Ant Expert

- American biologist
- Born in Alabama, USA, in 1929
- Graduated from universities
- Taught at a university



Neat Work

- Discovered that ants communicate with chemicals from their bodies
- Grouped ants in the South Pacific
- Wrote books about how animals act
- Influenced many people who like bugs, especially ants



Kyle Bradford was inspired by E. O. Wilson and Carl Linnaeus. When Kyle groups ants, he is using the work of Wilson and Linnaeus.



Carl Linnaeus, Classifier

- Swedish botanist
- Born in Sweden in 1707
- Graduated from a university
- Taught at a university



Neat Work

- Wrote about the grouping, or classification, of plants and animals

FUN FACT: Using grouping can help scientists name new animals.



Who inspires you to find out more about the way things happen? Who has helped you figure out how something works?

Jamieson's Explorations

Nature's Playground

Jamieson loves exploring outside. He runs through fields, climbs trees, and looks under rocks. "What's hiding here?" he wonders.

He watches ants marching, butterflies fluttering, and birds chirping. Every day is a new adventure in nature for Jamieson.

He is excited to discover something new each time he steps outside. Nature is his favorite playground.



In the Woods

The area where Jamieson lives has many trees. These areas are called woods.

There are young trees with thin trunks and smooth bark. Young trees are shorter. The tops with all the leaves are not wide because the young trees are still growing up.



There are older trees. These trees have wide trunks and are covered in rough bark. Older trees are taller. The tops of these trees are wide and full of leaves. Over time, older trees can form a canopy. This is the top layer of a forest. Animals like birds and squirrels make their nests in the canopy of a forest.

Math in the Woods

Some days Jamieson enjoys the woods. Other days he goes to school. He loves to do math when he is at school.

Jamieson counts how many trees there are in a picture. He tells which things are big. He tells which things are little. He puts things in order from smallest to biggest.



In math class, Jamieson learns about patterns. A pattern is the way something repeats, or happens over and over again.

Leaf Patterns

At first liked math much more than science. Jamieson science. But he started to realize how math and nature are related. Scientists study nature. Scientists use math to study nature. He looks at leaves in the woods. He sees how things repeat in both science and math pattern are important.

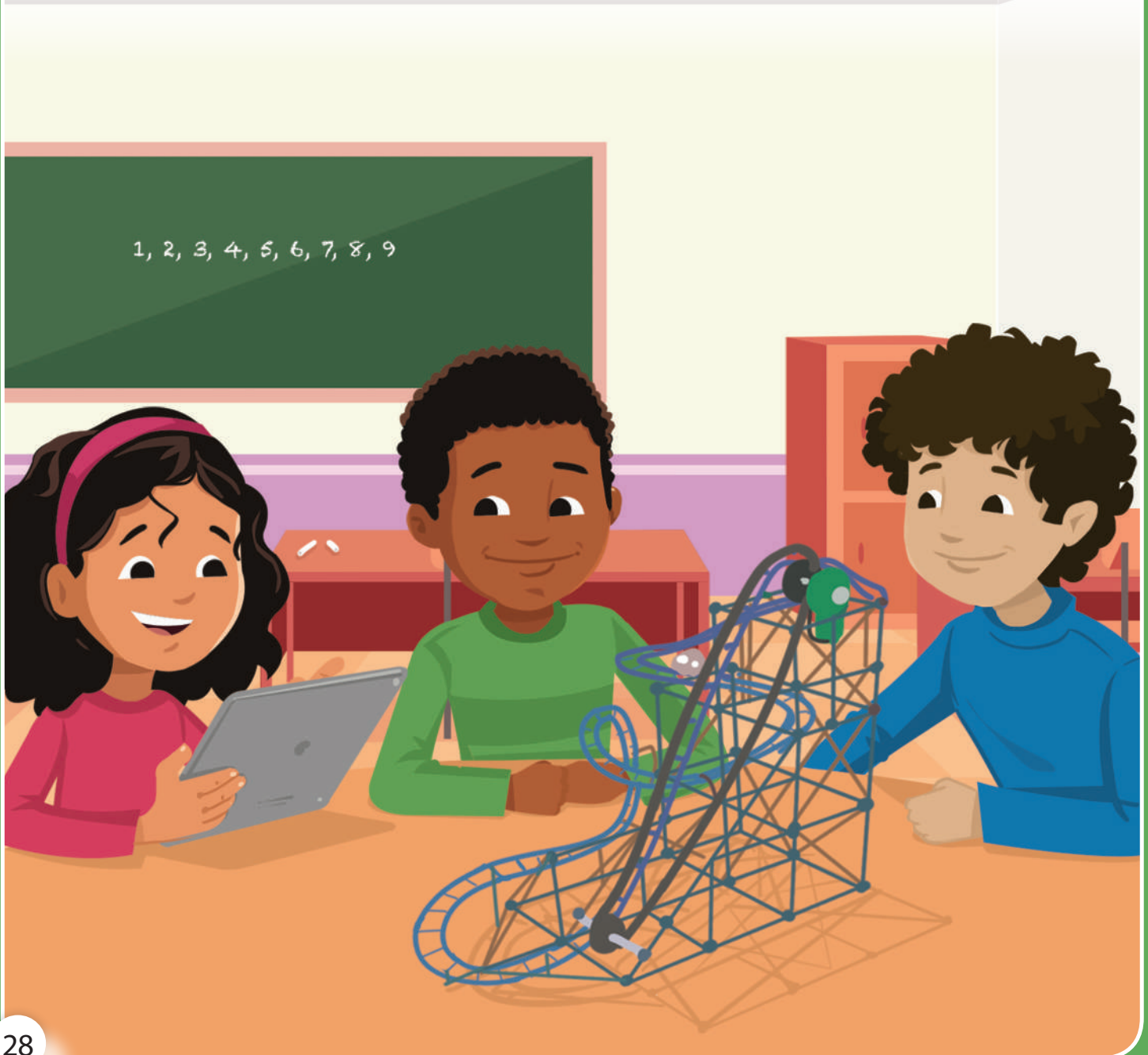


As he grows up, he likes doing math more and more. Knowing math helps him with science. Knowing science helps him with math.

Love for Math

In school, Jamieson loves math. He solves puzzles, makes graphs, and plays with robots. “Math helps me understand the world,” he thinks.

Math becomes his favorite subject. He enjoys the challenge and feels proud when he solves problems.



Discovering Science

In high school, Jamieson starts to really like science classes. He learns about Earth and the environment. "Science is a big puzzle," he thinks. "And I love puzzles. Puzzles can have patterns." He did experiments with his friends. They studied plants, animals, and weather. His interest in science grows every day. He starts to dream about having a job that uses math and science.



College Dreams

Jamieson works hard and gets into Clark University in Massachusetts. He studies environmental sciences.

He meets exciting professors and makes new friends. "This is where I belong," he thinks.

College is a great adventure for him. He learns a lot about nature. He also learns how he can help make nature better. His love for science and exploration continues to grow.



Graduation Day

The big day comes!
Jamieson graduates!
He wears a cap and gown.
“I did it!” he cheers.

Now that he has
completed college, he
is ready for the next
big adventure. He feels
proud and excited for
the future. His family and
friends celebrate with
him. Jamieson is ready
to start helping Earth.
Now he can start looking
for a job that will let him
help Earth.



Becoming a Scientist

Jamieson becomes a geographic information scientist. He uses special tools and satellites to study Earth. The special tools and satellites help Jamieson see things he cannot walk to.

"I'm helping to understand our planet," he says proudly. He loves his job and the work he does to help protect nature.

His research helps people understand the environment better. He feels happy to be helping the environment.



Exploring Forever

Jamieson never stops exploring. He still goes to the woods where he lives now. He still finds patterns in the pictures and videos.

“Exploring is my forever adventure,” he says with a smile. He wants others to explore and learn more about the world, too.

Jamieson’s adventures show that curiosity and hard work can lead to amazing discoveries.



Jamieson Chaitman: Mapping Trees

Jamieson Cares for the Trees

Have you ever wondered who looks out for trees in a forest? Some forests are very large. The trees need people to help care for them.

Jamieson is one of those people. Jamieson helps out the United States Forest Service.

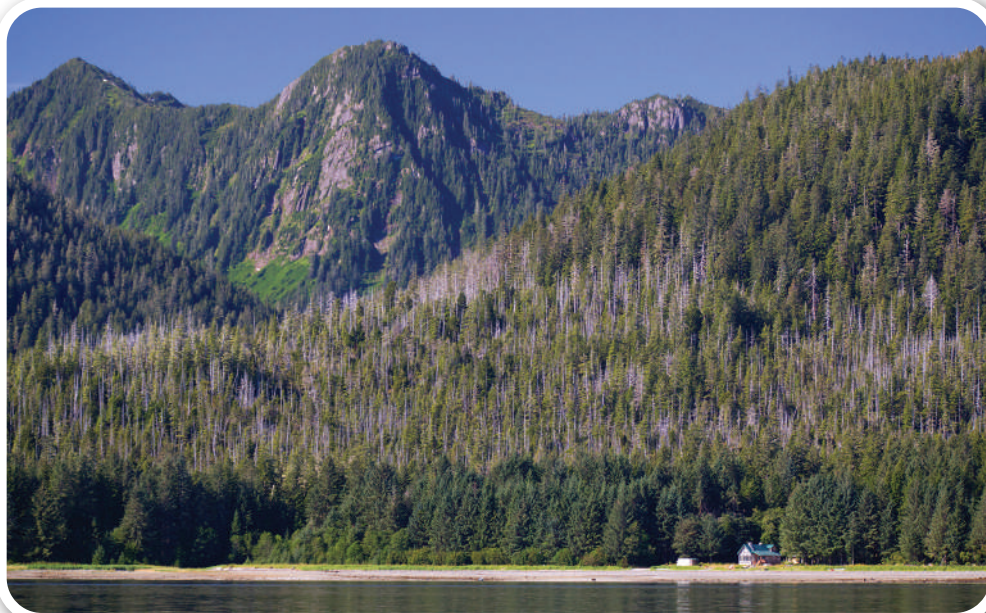
He helps take care of forests all over the country. He uses special pictures from satellites to look at trees and forests.



Watching Over All Forests

Jamieson works from his home. However, he gets to see forests everywhere! He has even studied trees in Alaska. One time, he studied mangroves.

Some of his work comes after a natural disaster. He finds ways to help trees that were damaged in tornadoes or hurricanes.



Using Satellites

Jamieson lives in Massachusetts. To make maps of forests, he uses a computer to talk with satellites. He tells the satellites where to take pictures.

Some satellites are free. Other satellites are owned by people or companies. These satellites cost money to use. Jamieson knows some satellites are always taking pictures. He can check when the satellite will be close to the forest he is watching. Then he can use the information from those pictures.



Finding Damaged Trees

At times, Jamieson works with a team. The team looks for dead or dying trees. Then they use this information to help forests.

The information helps get more money and support. This allows Jamieson and his team to keep helping trees.



Fixing Nature's Problems

Jamieson always liked math in school. And he made good grades in science and math classes.

Growing up around nature made him want to know more about it. He explored the outdoors and the woods by his home.

In high school, he learned about environmental science.

Environmental science is learning about problems in nature and ways to fix the problems.

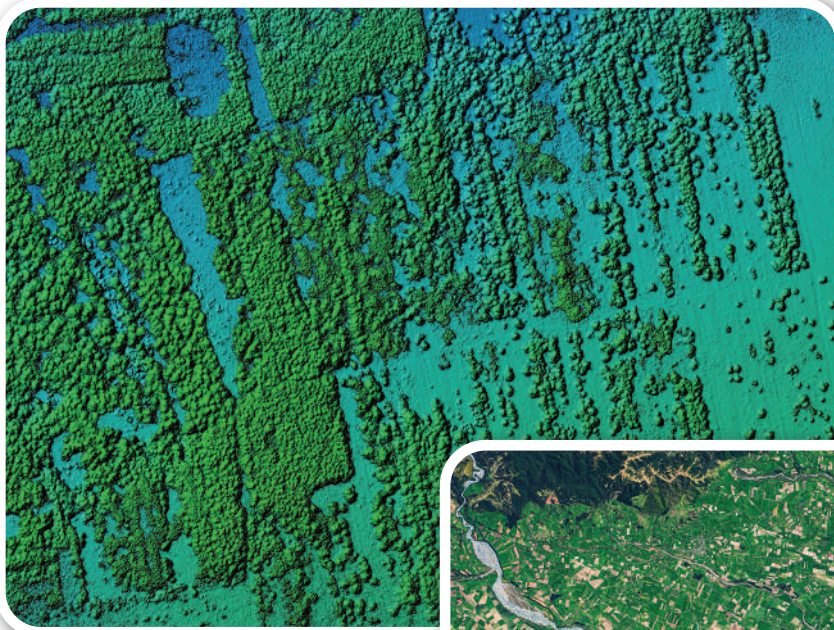


Going to College

Jamieson went to Clark University. He learned about environmental science and geography. Geography is the study of the parts of Earth.

He also learned about Geographic Information Systems (GIS). GIS is a computer tool that collects information.

After college, he decided to find work collecting data about the surface of Earth. Collecting data about Earth's surface is called remote sensing. Jamieson graduated and is now a geographic information scientist.



First Job

Jamieson's first job as a scientist was in Hawaii. He used GIS to make maps. The maps helped bees.

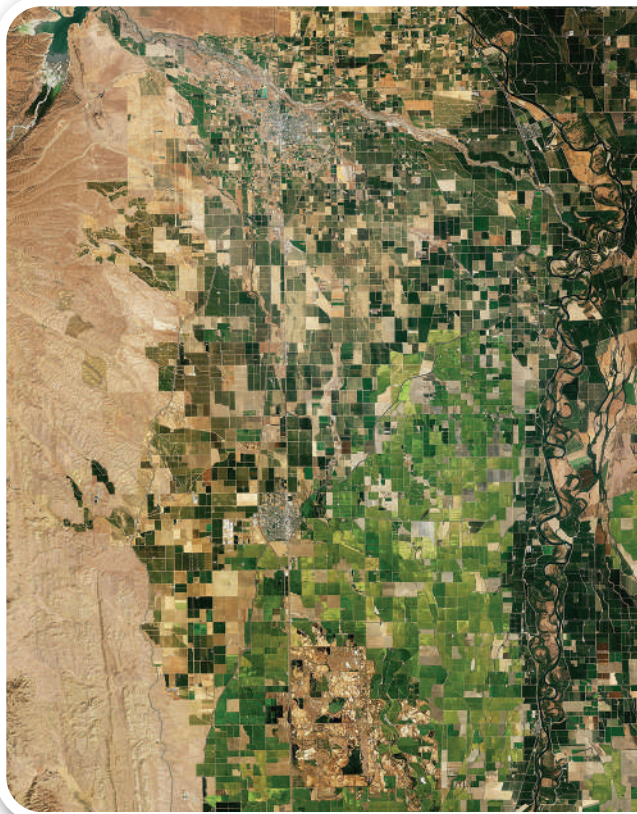
The bees were in trouble. They needed a new place to live. Jamieson used information from satellite pictures to help the bees. The information helped find better places for the bees to live.



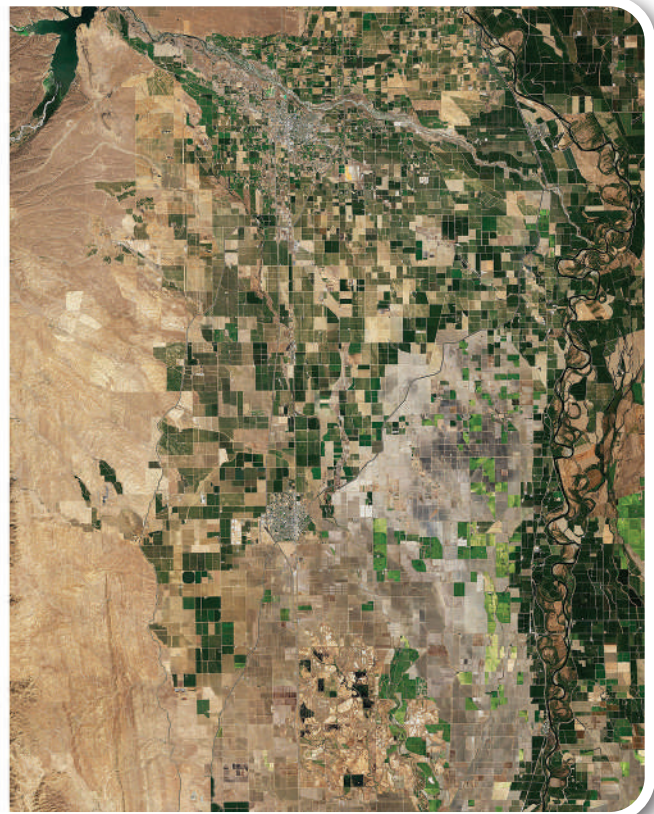
Making Maps

The way Jamieson makes maps is different from how people did it a long time ago. Maps a long time ago were made on paper. People would draw parts of Earth on paper.

Jamieson uses satellites and computers to make detailed maps. His maps help people make important decisions about the environment.



This photo shows a rice-growing area of California.

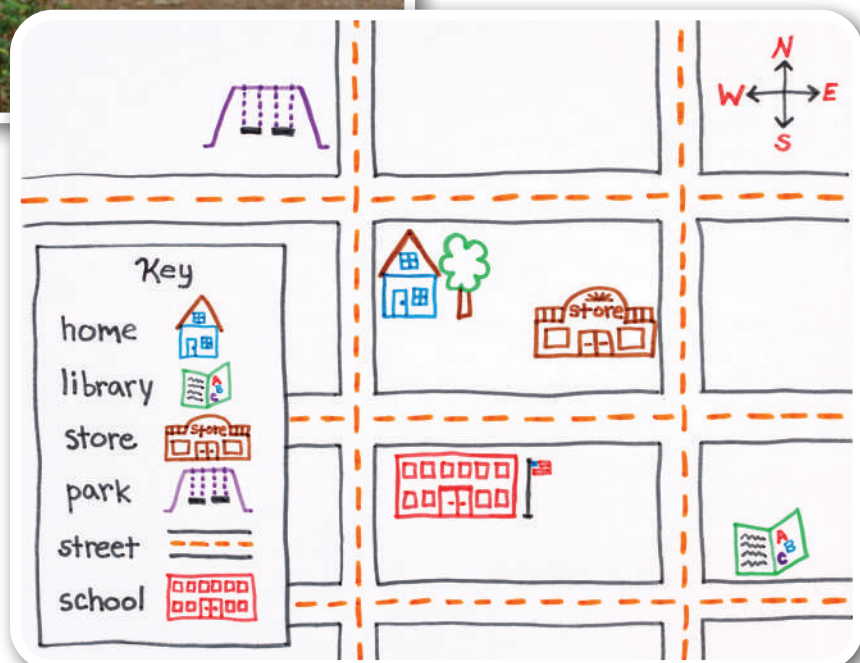


This photo shows the same area after a year with little rain.

Using Maps Every Day

Have you used a map before? You might use a map to find where your school is located. Maps are important on nature trails. Adults use maps on their phones to know where to drive. Maps are part of everyday life.

From the maps on our phones to maps that help protect forests, maps are important. Jamieson helps keep our environment healthy with the maps he makes.



Keep Learning

Jamieson wants you to keep learning about trees and nature, too! There are always new things to learn.

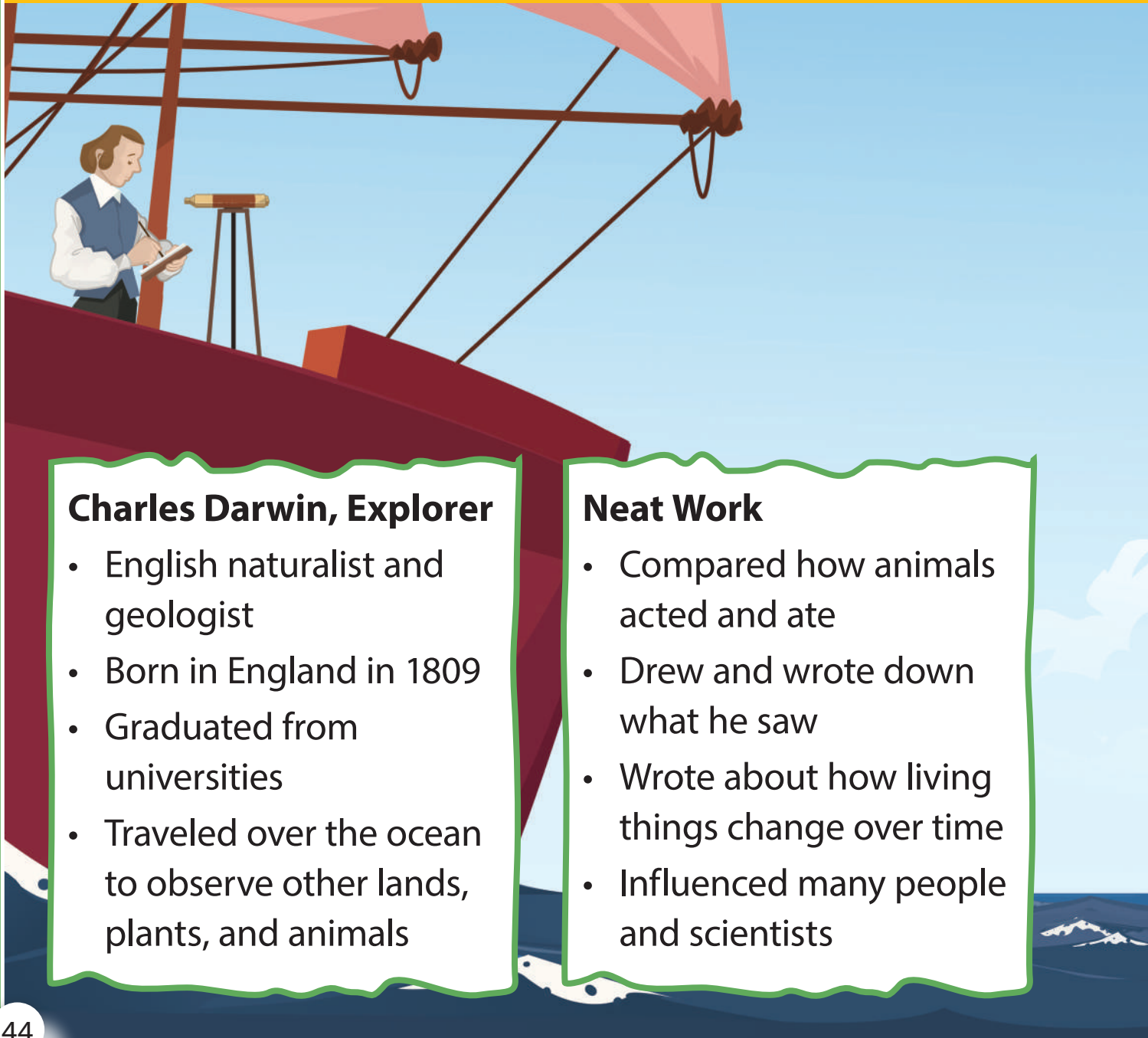
In 2024 rains from a strong hurricane. caused great damage in the hills of western North Carolina. Jamie and his team were called on by the Forest Service to assess the terrible damage. Data from Jamie and his team will help restore the forests.

Maybe one day, you will use computers like Jamieson and help save trees and other parts of nature.



Inspired by . . .

To be **inspired** by someone means they made us want to try something.



Charles Darwin, Explorer

- English naturalist and geologist
- Born in England in 1809
- Graduated from universities
- Traveled over the ocean to observe other lands, plants, and animals

Neat Work

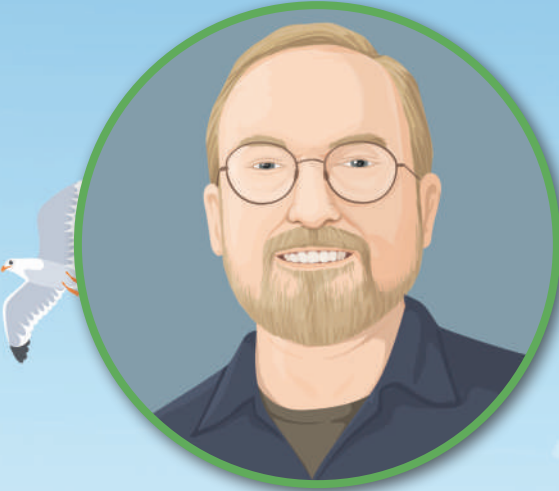
- Compared how animals acted and ate
- Drew and wrote down what he saw
- Wrote about how living things change over time
- Influenced many people and scientists

Jamieson Chaitman was inspired by Charles Darwin and by Ronald Eastman who was one of Jamie's teachers.



Ronald Eastman, Teacher

- American research scientist
- Graduated from a university
- Traveled over the ocean to observe other lands, plants, and animals



Neat Work

- Helped develop remote sensing
- Teaches others to use remote sensing

FUN FACT: Remote sensing lets people explore places without going to them.

Who inspires you to find out more about the way things happen?
Who has helped you figure out how something works?



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