

Disclaimer: This packet is intended ONLY for the use of students enrolled in Leon County Schools.

Complete the assignments below.

6th Grade

Week 1:

- Life Science (SL.6.L.14; SL.6.L.15)**
- Content Area Reading: The Wolf Within (LAFS.RI.1.1;SL.6.L.14)**
- Skill Activity: Scientific vocabulary and textual support (RI.1.2; RI.4.10)**

Week 2:

- Physical Science (SC.6.P.11; SC.6.P.12; SC.6.P.13)**
- Content Area Reading: How are Rainbows Formed? (RI.1.1;SC.6.P.11)**
- Skill Activity: Scientific vocabulary and textual support (RI.1.2; RI.4.10)**

Week 3:

- Technology and Science: (SC.6.N.1; SC.6.N.2; SC.6.N.3)**
- Content Area Reading: Safe at Any Speed (RI.1.1;SC.6.N.3)**
- Skill Activity: Scientific vocabulary and textual support (RI.1.2; RI.4.10)**

Week 4:

- Technology and Science: (SC.6.N.1; SC.6.N.2; SC.6.N.3)**
- Content Area Reading: Blue Lightning (RI.1.1;SC.6.N.3)**
- Skill Activity: Scientific vocabulary and textual support (RI.1.2; RI.4.10)**

The Wolf Within



We love dogs, all types of dogs: small dogs, big dogs, yappy dogs, lap dogs. Each year we spend billions of dollars on our canine pals, making sure our lovable mutts have enough to eat and lots of toys to play with.

For their part, dogs love us. They lick our faces, protect our homes, and come when we call them (sometimes).

But where did our favorite four-legged companions come from? How and when did dogs get to be our best friends? Some scientists believe they have found some of the answers.

From Wolf to Woof

Scientists have long known that dogs evolved from wolves. Just when the transformation from wolf to

dog actually took place, however, remained a mystery.

Some said dogs evolved as a separate species 135,000 years ago in two parts of the world. One group of dogs developed in Europe and Asia from Asian wolves. Another group evolved in North, Central, and South America from American wolves.

Now, researchers say, those theories are wrong. New studies suggest that *domesticated*, or tamed, dogs first appeared 15,000 years ago in eastern Asia. They also say that every modern dog, from the Taco Bell Chihuahua to Frank, the adorable pug in the movie *Men in Black II*, descended from approximately five female Asian wolves, the mothers of all modern dogs.

Old Bones

How did scientists come to those conclusions? Scientist Jennifer Leonard and a team of researchers began investigating the **origins** of dogs by collecting the bones of canines that once lived in North, Central, and South America before Christopher Columbus arrived in 1492.

Researchers then **extracted** a bit of DNA from the cells in those bones. DNA is the substance that makes up the genes of living things. Genes determine a dog's inherited characteristics, such as eye and fur color.

The scientists then compared the DNA samples to the DNA of modern dogs and wolves not only in North and South America, but also in Europe and Asia. Scientists found that the genes of the ancient American dogs were similar to the genes of dogs born in Europe and Asia. Scientists also concluded that every breed of dog, from English setters to Labrador retrievers, descended from wolves that lived in Europe and Asia and migrated to North and South America.

Land Bridge

Scientists suspect dogs first set paw in North America by following settlers across a land bridge that once linked northern Asia and North America.

"We can't say in detail how [the dogs got to America]; that's something for the future," said Peter Savolainen, a scientist in Sweden. "But what's certain is that by 9,000 years ago, [dogs] were in America and all over Europe and Asia."

Good Friends

No one knows exactly how dogs became domesticated. Some researchers believe that they accomplished that task themselves over a number of generations by hanging around human campsites sniffing for scraps of food. Those that were not afraid of people ate well, survived, and multiplied.

Other researchers say that humans manipulated every aspect of canine behavior by breeding dogs for certain traits.

Either way, dogs developed an uncanny ability to pick up human signals, endearing the pups to humans, scientists say. As the years passed, humans and dogs became fast friends, a relationship that has lasted thousands of years.

Today, there are 78.2 million owned dogs in the United States. In a recent survey of U.S. dog owners, 94 percent said they own dogs for companionship.

"He's really a good friend," 11-year-old Kerry Knott said about her family's Weimaraner. "I try to look out for him."

inherit in · her · it

Definition

verb

1. to receive from a person who has died.

James inherited land and money from his grandfather.

Advanced Definition

transitive verb

1. to receive (money, property, or the like) through a will made by, or legal succession to, a person who has died; be heir to.

I inherited this watch from my uncle.

She inherited several million dollars upon her father's death.

2. to receive (a characteristic) by genetic transmission through a parent.

He inherited the disease from his father.

She inherited her blue eyes from her mother's side of the family.

3. to receive (something) from or as if from a predecessor.

She inherited the previous tenant's dreadful wallpaper.

The new president inherited the problems that arose under the former administration.

intransitive verb

1. to receive property or succeed to a position or title as an heir, or have the right to do so.

He inherits when he becomes twenty.

2. to receive characteristics, authority, duties, or the like from a forebear or predecessor.

Spanish cognate

heredar: The Spanish word *heredar* means inherit.

These are some examples of how the word or forms of the word are used:

1. Scientist Roger Kornberg won the chemistry prize for his work on how people **inherit** diseases.
2. Schweitzer said that new techniques might make it possible for scientists to one day extract a dinosaur's genetic material. Genetic material determines an animal's **inherited** characteristics, such as eye color and hair color.
3. Your genes determine how tall you grow, what color hair you have, and how quickly your skin gets sunburnt. Our genes are **inherited** from our parents, which is why you see family resemblance between parents, children and siblings. These genes are passed on through generations by either artificial or natural selection.
4. **Inherited** genetic information explains why certain species look different from others. Monarch butterflies, orange butterflies with black markings and white spots on their wings, are most common in Mexico and the United States. Their bright color makes them easily noticeable to predators, but also acts as a warning that they are poisonous if eaten.
5. So many of our most defining traits have been learned, rather than **inherited**. For instance, if you're really great at video games, it's not because one or both of your parents passed down skills in some video game mastery gene. It's because you practiced, played a lot of video games, and developed those skills yourself.
6. The middle class quickly realized that a good education was very important in order to survive. They couldn't rely on **inherited** wealth like the very rich or nobility. However, they could earn money if they had the right knowledge and tools.
7. Genetic material determines an animal's **inherited** characteristics, such as eye color and hair color.
8. Most countries in Europe had laws about who could **inherit** an estate. These laws stated that the oldest son in a family would inherit all of his father's land, goods, and money.
9. Unlike kings and emperors who **inherit** their right to run a country from their family, the president is elected by the people of the states. The president cannot make laws.

Name: _____ Date: _____

1. According to new studies, what did every modern dog descend from?

- A. the Taco Bell Chihuahua
- B. English setters and Labrador retrievers
- C. American wolves in North, Central, and South America
- D. approximately five female Asian wolves

2. What does the author describe in the section "From Wolf to Woof"?

- A. The author describes how dogs that were not afraid of people ate well, survived, and multiplied.
- B. The author describes how researchers say some theories about the way in which dogs evolved from wolves are wrong.
- C. The author describes how researchers extracted DNA from the cells in the bones of dogs.
- D. The author describes how genes determine a dog's inherited characteristics, such as eye and fur colors.

3. Read these sentences from the text.

"Some [scientists] said dogs evolved as two separate species 135,000 years ago in two parts of the world. Now, researchers say, those theories are wrong."

What evidence in the text supports the conclusion that those theories are wrong?

- A. Each year we spend billions of dollars on our canine pals.
- B. Asian wolves came to the Americas with Christopher Columbus in 1492.
- C. Scientists found that the genes of the ancient American dogs were similar to the genes of dogs born in Europe and Asia.
- D. Five female Asian wolves developed an uncanny ability to pick up human signals.

4. Scientists have long known that dogs evolved from wolves. But no one knows exactly how dogs became domesticated.

Based on these sentences, what can you infer about wolves?

- A. Wolves are not domesticated.
- B. Wolves became extinct.
- C. Wolves come when people call them.
- D. Wolves were raised by scientists.

5. What is the main idea of this text?

- A. Christopher Columbus arrived in the Americas in 1492.
- B. Researchers say every modern dog, including American dogs, descended from Asian wolves.
- C. A land bridge once linked northern Asia and North America.
- D. Dogs are the most popular type of pet in the United States.

6. Read these sentences from the text.

"Scientists have long known that dogs evolved from wolves. Just when the transformation from wolf to dog actually took place, however, remained a mystery."

Based on these sentences, what does the word "evolve" most likely mean?

- A. to develop and change
- B. to die off completely
- C. to outlive
- D. to tame

7. Read this sentence from the text.

"Scientists suspect dogs first set paw in North America by following settlers across a land bridge that once linked northern Asia and North America."

What word or phrase could replace "once linked" without changing the meaning of the sentence?

- A. later linked
- B. always linked
- C. still links
- D. used to link

8. Scientists used to think dogs evolved in two different groups in which two parts of the world?

9. According to new studies by scientists, how do the genes of ancient American dogs compare to the genes of dogs born in Europe and Asia?

10. Read these sentences from the text:

Some [scientists] said dogs evolved as a separate species 135,000 years ago in two parts of the world. One group of dogs developed in Europe and Asia from Asian wolves. Another group evolved in North, Central, and South America from American wolves. Now, researchers say, those theories are wrong.

Explain how what scientists learned about the genes of ancient American dogs and the genes of dogs born in Europe and Asia affected their theories about how dogs evolved.

Support your answer with evidence from the text.
