|  |  |  |  |
| --- | --- | --- | --- |
| Name: |  | Date: |  |

## Purpose

This activity asks you to evaluate a number of theories about when humans first migrated to the Americas. As you evaluate these theories, you’ll begin to understand that there are many details that we have yet to discover about the history of early humans. This will allow you to see how history is much like a mystery. The story of early human history, in particular, is one that is filled with unanswered questions, and requires research from multiple disciplines to uncover answers. In addition, this activity will help you see how collective learning is a continuous process whereby previous studies illuminate and inspire the research of current investigations. Our knowledge of human history has benefited from those who came before us and current research will become a steppingstone for future discoveries.

## Process

In this activity, you’ll be presented with a number of theories about when humans (*Homo sapiens*) first arrived in the Americas. You’ll then use your claim testing abilities to decide which of these theories is the most plausible (credible).

Beginning in the 1960s, it was thought that the mystery of when humans arrived in the Americas had been solved. But new evidence found in the past few decades has challenged the accepted theory of these early human migrations. First, your teacher will break the class into groups of 3-4 students and provide each group with a set of theory cards.

Read each of the theories and the evidence used to support them, and then work together to determine which of these seems to be the most plausible explanation for these early human migrations. Remember that you should be using your claim testing abilities to assess which theory seems to be the most logical as well as the one with the most credible evidence. Once your group has decided on the “best” theory, your teacher will ask you to present the one that you think is most credible to the class, including your reasoning for choosing that theory, and your reasons for rejecting the other theories.

After the presentations, you’ll have a discussion about the pros and cons of each theory and vote on which of these theories is the best explanation to answer the question: When did humans get to the Americas?

## Theory 1: Beringia theory

Early humans migrated from Asia across the Bering Strait land bridge around the Last Glacial Maximum, approximately 18,000 years ago, and then moved down into the interior of the Americas and quickly spread south to South America by about 13,000 years ago. This theory was popularized in 1967 by geologist David M. Hopkins (PhD, Harvard University), working with an international, interdisciplinary team of botanists, archaeologists, and anthropologists.

Evidence from the interior of North America that supports this theory includes artifacts from the Clovis culture. Between 1932 and 1936, archaeologists found the remains (animals and human-made tools) of people hunting near Clovis, New Mexico. Later archaeological finds from areas in the southwestern portion of North America through Mexico and into Central America confirm that Clovis culture was widespread from about 13,000 to 11,000 years ago. The similarities of the tools used led researchers to believe that these were the people who moved across the Beringia land bridge and populated the Americas.

Over 10,000 Clovis points (fluted or shaped stone spears used to hunt large game such as bison) have been found across sites in the Americas.

## Theory 2: Coastal migration/kelp highway theory

Early humans island hopped from Asia around the Ring of Fire using primitive boats about 16,000 years ago. They sustained themselves on the lush marine life, migrating through what was known as the “kelp highway,” which extended from the Northwest Pacific coast to Baja California and then down the west coast of South America to Tierra del Fuego. This theory was proposed by archaeologist Jon M. Erlandson (PhD, University of California, Santa Barbara) and his colleagues (archaeologists and marine ecologists) in 2007.

Archaeologists have found tools in a number of sites in both North and South America that predate Clovis culture by at least 1,500 years.

Human remains have been found in underwater coastal areas in California and Mexico along with settlements in South America (Monte Verde) that have been dated to approximately 18,000 to 14,500 years ago, which is thousands of years before Clovis culture.

## Theory 3: Solutrean hypothesis

Early humans migrated from Europe (present-day France, Spain, and Portugal) by using primitive boats to travel across the North Atlantic Ocean hugging the Arctic ice sheets around the time of the Last Glacial Maximum, about 21,000 to 17,000 years ago. This theory was first proposed by archaeologist and director of the PaleoIndian Program at the Smithsonian, Dennis Stanford (PhD, University of New Mexico), in 1999.

Some archaeologists have suggested that there are similarities between Solutrean (European) tools and those of the Clovis culture. These stone tools were found across five sites in the mid-Atlantic region of North America. Tools such as anvils, blades, and spear points were found around the Chesapeake Bay islands (Maryland). These tools were found in soil dated to about 20,000 years old (meaning the experts are basing this on the date of the soil in which the tools were found), which may indicate that humans were in this region of North America (quite far from the Bering Strait land bridge) before the ice sheets melted and allowed passage into North America. Dr. Stanford has matched each of the North American tool finds to similar tools used in Europe at Solutrean sites.

Scholars have found that the remains of some early humans do not have the same facial and cranial characteristics as the Native American/Asian populations do, which may indicate that an early human population arrived on the east coast of North America from Europe. However, these differences in facial features could also be explained by evolutionary or genetic changes that took place once early humans arrived in the Americas and lived in relative isolation for thousands of years.

## Theory 4: Two founding populations theory

There were at least two and maybe more migrations of early humans: one migration from Eurasia across the Bering Strait land bridge or kelp highway route and another with genetic markers to Australasians who may have arrived after the initial Eurasian migration. This theory was first proposed in 2015 by geneticist Pontus Skolund (PhD, Uppsala University, Sweden) and an international, interdisciplinary team including a geologist, biologist, and anthropologist.

Scholars have found that some early humans do not have the same facial and cranial characteristics as the Native American/Eurasian populations do. One such find was made by archaeologist Annette Laming-Emperaire (PhD, Sorbonne) in 1975 when she discovered the human remains of a woman in Brazil that scholars named Luzia. This skull was dated to about 11,000 years ago and modern facial reconstruction of the skull done by Richard Neave, an expert forensic artist, in the late 1990s indicates that Luzia looks more like Australasians than indigenous Americans.

In particular, these scholars have found a group of Amazonian peoples (Xavante, Karitiana, and Suruí) whose DNA markers more closely match those of Australasian descent than those of indigenous Americans with Asian descent.

## Theory 5: Cerutti mastodon theory

Humans, either *Homo sapiens*, *Neanderthals*, or another species, arrived in the Americas (California) much earlier than all other theories suggest, possibly via the Bering Strait, coastal pathway, or another coastal/sea route such as island hopping in the Pacific Ocean.

In 1992, broken mastodon bones were found by Richard Cerutti (field paleontologist at the San Diego Natural History Museum) and analyzed by a team of scholars including evolutionary biologist Tom Deméré (PhD, University of California, Los Angeles) in coastal San Diego. These bones have markings on them that appear to have been made by human tools. In addition, tools such as anvils and hammerstones were also found at the site.

Researchers used uranium dating and discovered that the tusk and markings dated to around 131,000 years ago. These researchers also re-created the markings made in the mastodon bones and were able to perfectly replicate the original markings and even matched those markings to the specific tools found. The results of these studies were published in the journal *Nature* in 2017.

|  |  |
| --- | --- |
| Theory 1: Beringia theory   * Early humans migrated from Asia across the Bering Strait land bridge around the Last Glacial Maximum, approximately 18,000 years ago, and then moved down into the interior of the Americas and quickly spread south to South America by about 13,000 years ago. This theory was popularized in 1967 by geologist David M. Hopkins (PhD, Harvard University), working with an international, interdisciplinary team of botanists, archaeologists, and anthropologists. * Evidence from the interior of North America that supports this theory includes artifacts from the Clovis culture. Between 1932 and 1936, archaeologists found the remains (animals and human-made tools) of people hunting near Clovis, New Mexico. Later archaeological finds from areas in the southwestern portion of North America through Mexico and into Central America confirm that Clovis culture was widespread from about 13,000 to 11,000 years ago. The similarities of the tools used led researchers to believe that these were the people who moved across the Beringia land bridge and populated the Americas. * Over 10,000 Clovis points (fluted or shaped stone spears used to hunt large game such as bison) have been found across sites in the Americas. | Theory 2: Coastal migration/kelp highway theory   * Early humans island hopped from Asia around the Ring of Fire using primitive boats about 16,000 years ago. They sustained themselves on the lush marine life, migrating through what was known as the “kelp highway,” which extended from the Northwest Pacific coast to * Baja California and then down the west coast of South America to Tierra del Fuego. This theory was proposed by archaeologist Jon M. Erlandson (PhD, University of California, Santa Barbara) and his colleagues (archaeologists and marine ecologists) in 2007. * Archaeologists have found tools in a number of sites in both North and South America that predate Clovis culture by at least 1,500 years. * Human remains have been found in underwater coastal areas in California and Mexico along with settlements in South America (Monte Verde) that have been dated to approximately 18,000 to 14,500 years ago, which is thousands of years before Clovis culture. |

|  |  |
| --- | --- |
| Theory 3: Solutrean hypothesis   * Early humans migrated from Europe (present-day France, Spain, and Portugal) by using primitive boats to travel across the North Atlantic Ocean hugging the Arctic ice sheets around the time of the Last Glacial Maximum, about 21,000 to 17,000 years ago. This theory was first proposed by archaeologist and director of the PaleoIndian Program at the Smithsonian, Dennis Stanford (PhD, University of New Mexico), in 1999. * Some archaeologists have suggested that there are similarities between Solutrean (European) tools and those of the Clovis culture. These stone tools were found across five sites in the mid-Atlantic region of North America. Tools such as anvils, blades, and spear points were found around the Chesapeake Bay islands (Maryland). These tools were found in soil dated to about 20,000 years old (meaning the experts are basing this on the date of the soil in which the tools were found), which may indicate that humans were in this region of North America (quite far from the Bering Strait land bridge) before the ice sheets melted and allowed passage into North America. Dr. Stanford has matched each of the North American tool finds to similar tools used in Europe at Solutrean sites. * Scholars have found that the remains of some early humans do not have the same facial and cranial characteristics as the Native American/Asian populations do, which may indicate that an early human population arrived on the east coast of North America from Europe. However, these differences in facial features could also be explained by evolutionary or genetic changes that took place once early humans arrived in the Americas and lived in relative isolation for thousands of years. | Theory 4: Two founding populations theory   * There were at least two and maybe more migrations of early humans: one migration from Eurasia across the Bering Strait land bridge or kelp highway route and another with genetic markers to Australasians who may have arrived after the initial Eurasian migration. This theory was first proposed in 2015 by geneticist Pontus Skolund (PhD, Uppsala University, Sweden) and an international, interdisciplinary team including a geologist, biologist, and anthropologist. * Scholars have found that some early humans do not have the same facial and cranial characteristics as the Native American/Eurasian populations do. One such find was made by archaeologist Annette Laming-Emperaire (PhD, Sorbonne) in 1975 when she discovered the human remains of a woman in Brazil that scholars named * Luzia. This skull was dated to about 11,000 years ago and modern facial reconstruction of the skull done by Richard Neave, an expert forensic artist, in the late 1990s indicates that Luzia looks more like Australasians than indigenous Americans. * In particular, these scholars have found a group of Amazonian peoples (Xavante, Karitiana, and Suruí) whose DNA markers more closely match those of Australasian descent than those of indigenous Americans with Asian descent. |

|  |  |
| --- | --- |
| Theory 5: Solutrean hypothesis   * Humans, either *Homo sapien*s, *Neanderthals*, or another species, arrived in the Americas (California) much earlier than all other theories suggest, possibly via the Bering Strait, coastal pathway, or another coastal/sea route such as island hopping in the Pacific Ocean. * In 1992, broken mastodon bones were found by Richard Cerutti (field paleontologist at the San Diego Natural History Museum) and analyzed by a team of scholars including evolutionary biologist Tom Deméré (PhD, University of California, Los Angeles) in coastal San Diego. These bones have markings on them that appear to have been made by human tools. In addition, tools such as anvils and hammerstones were also found at the site. * Researchers used uranium dating and discovered that the tusk and markings dated to around 131,000 years ago. These researchers also re-created the markings made in the mastodon bones and were able to perfectly replicate the original markings and even matched those markings to the specific tools found. The results of these studies were published in the journal *Nature* in 2017. |  |