A Mississippian in Antarctica

Objectives:
Using a primary source document, close reading tactics, and math, students will learn about native Mississippian Alton N. Parker and his role in the Richard Byrd Antarctic Expedition of 1928-1930.

The *Mississippian in Antarctica* lesson is adaptable for grades 3 - 5.

Curricular Connections		
Common Core Language Arts	Grade 3	RI1; RI2; RI3; RI4; RI6; RI7; RI8; RI9; SL1; SL2; SL3; SL4; SL6; L1; L3; L4; L5; L6
	Grade 4	RI1; RI2; RI3; RI4; RI5; RI7; RI8; RI9; SL1; SL2; SL3; SL4; SL6; L1; L3; L4; L5; L6
	Grade 5	RI1; RI2; RI3; RI4; RI5; RI6; RI7; RI8; RI9; SL1; SL2; SL3; SL4; SL6; L1; L3; L4; L5; L6
Common Core Math	Grade 3	3.OA.1; 3.OA.2; 3.OA.3; 3.OA.5; 3.OA.6; 3.OA.8; 3.NBT.1; 3.NBT.2; 3.NF.1; 3.NF.3
	Grade 4	4.OA.1; 4.OA.2; 4.OA.3; 4.NBT.1; 4.NBT.2; 4.NBT.3; 4.NBT.4; 4.NBT.5; 4.NBT.6; 4.NF.2; 4.NF.6; 4.NF.7
	Grade 5	5.NBT.5; 5.NBT.6
Social Studies	Grade 3	2; 3b; 4a; 4c; 4e; 5a
	Grade 4	3a

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Objectives: Using a primary source document, close reading tactics, and math, students will learn about native Mississippian Alton N. Parker and his role in the Richard Byrd Antarctic Expedition of 1928-1930.

Materials: *The Byrd Antarctic Expedition, 1928-1930; Cool People, Places, and Words to Know; A Mississippian in Antarctica;* Alton N. Parker Letter; *Letter Discussion Guide; Close Reading #1: Sunsets; Close Reading #2: Dog Teams;* math worksheets (three); Internet.

Procedures:

Activity One: Antarctica Overview

1. Using *The Byrd Antarctic Expedition, 1928-1930*, introduce students to this historic event. The reading may be distributed to students individually or in groups and divided into smaller sections that they then report on to the class, or it may be used (along with additional resources if desired) as a teacher guide to discuss its contents as a class.
2. Note: If the reading is distributed to students, have them identify words that they are unfamiliar with and have them attempt to try to define them using context clues within the text. Compile a list and determine the meanings as a class using *Cool People, Places, and Words to Know* or any other teacher approved resource.
3. Distribute *A Mississippian in Antarctica* to students for review individually or in groups along with the Alton Parker letter. Using the *Letter Discussion Guide*, discuss its contents as a class.

Activity Two: Close Reading

1. Distribute the *Close Reading #1: Sunsets* and/or *Close Reading #2: Dog Teams* for students to complete.
2. As a class, review the worksheets. Using a chalkboard or smart board, list the verbs and adjectives located, write the theme of the excerpt, and list and define the unknown words. Allow students to share their favorite examples of imagery and defend their choices if necessary.
3. Have students share the questions they would like to ask the author. Can any of the questions be answered?

Activity Three: Antarctic Math

1. Distribute any or all of the three math worksheets.
2. Allow students to complete word problems based on data related to Antarctic weather conditions, dog sledging teams, and polar flights.
3. Review the math worksheets as a class to understand the importance of math in exploration, travel, and survival.

Activity Four: A Changing Continent

1. Antarctica has changed greatly since the first Byrd Expedition in 1928-1930. The continent has drifted, moving the geographic South Pole each year, and ice floes have broken off the edge of the continent, dramatically changing the coastline and obliterating some sites completely (such as the Bay of Whales).
2. Working individually or in groups, have students use the Internet, library books, or any other teacher approved resource to conduct research about the changing continent. Topics could include but are not limited to:
    - Geographic Shift
    - Climate Changes
    - Animal Life
    - Types of Scientific Research
    - Tactics of Scientific Research
    - Living Conditions in Antarctica
    - The Antarctic Treaty
    - Antarctic Tourism
    - Travel and Transportation

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3. Students may compile their findings in a research paper, poster board, or power point and share their findings with the class.

Extension Activities:

Where in the World?: Using a classroom map of the world locate Antarctica as well as other sites significant to the Byrd Expedition, such as New York City (the starting point of the expedition), New Zealand (their southern base), and Hazelhurst, Mississippi (Alton Parker's home town).

From Radio to Internet: The members of the Byrd Expedition were pioneers of technology in Antarctica. Not only did they bring with them airplanes, but also a rudimentary snowmobile, victrola (record player), movie projector, and radios so that they could remain in constant contact with each other and the world. Today, people who live and work in Antarctica also have the use of telephones and the Internet. Use today's modern technology to explore the Byrd Expedition at Ohio State University's Byrd Polar Research Center at https://library.osu.edu/find/collections/byrd-polar-archives/byrd/byrd-digital-exhibits/ On the website you'll be able to view photographs, artifacts, papers, and art from multiple Byrd Expeditions as well as treasures from other Antarctic explorers.

Cold Cases: Access online lesson plans from the Byrd Polar Research Center at http://hti.osu.edu/byrd. Use primary source documents to learn about the men who accompanied Richard Bryd on the Expedition (including Boy Scout Paul Siple) and daily life at Little America.

Byrd on Film: Watch *With Bryd at the South Pole*, the Paramount Pictures documentary filmed during the expedition and released in 1930. Available on DVD, clips may also be seen on websites such as YouTube.

Needs vs. Wants: Byrd, Parker, and all the men of the 1928-1930 Antarctic Expedition had to adhere to strict rules about what they could and could not take to Antarctica. In fact, Byrd kept extensive records about the amounts, sizes, and weights of all supplies transported to Antarctica and on each sledge and plane journey while on the continent. Imagine you were loading your sledge for a scientific expedition away from Little America. What would you bring?

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The Byrd Antarctic Expedition, 1928-1930

An Age of Exploration

People around the world were captivated by the exploits of explorers during the first decades of the 20th century. Colonel Percy Fawcett explored the rainforests of South America and searched for El Dorado, the lost city of gold, before his 1925 disappearance in Brazil. Roy Chapman Andrews traveled through China and Mongolia in search of fossils. Howard Carter discovered the tomb of King Tutankhamun in November, 1922, while British mountain climbers attempted to scale Mount Everest, and Charles Lindbergh became the first person to fly solo across the Atlantic Ocean in May, 1927.

This period was also a golden age of Arctic and Antarctic exploration. Americans Frederick Cook and Robert Peary explored the North Pole in 1908 and 1909. Two years later, on December 14, 1911, Norwegian Roald Amundsen and members of his exploration team were the first to reach the South Pole. The British explorer Robert Scott and four companions reached it on January, 17, 1912. No one would set foot on the South Pole again until the 1950s.

However, in 1928 another type of exploration (and one equally important) would be tested in the southern region of Antarctica. For the first time a flight over the South Pole would be attempted. The leader of the expedition was Richard Evelyn Byrd, a native Virginian, Naval aviator, and at the age of 40 a veteran explorer. In 1925 Byrd had overseen naval planes and personnel on the MacMillan Arctic Expedition. The following year, as the leader of the Byrd Arctic Expedition, he and pilot Floyd Bennett became the first to fly over the North Pole on May 9, 1926. In June, 1927, he and pilot Bernt Balchen made the second non-stop trans-Atlantic flight one month after Charles Lindbergh's historic flight. Unlike Lindbergh's single-engine *Spirit of St. Louis*, Byrd chose a three-engine plane named *America*. It was his belief that it would be multi-engine planes that would make commercial air travel a reality.

The use of multi-engine planes would be key to the Byrd Antarctic Expedition of 1928-1930. Previously polar explorers had relied mainly upon dogs as transportation in these sub-zero regions. While dogs would still play a key role in Byrd's expedition, the planned program of exploration extended further than dogs alone could accommodate. Indeed, Byrd's expedition would be the most ambitious of its kind to date, and it would use more sophisticated technology than previous Arctic or Antarctic explorations. This included the use of radio, which would allow smaller teams of explorers to remain in constant touch with the home base and with civilization outside of Antarctica, and the use of photographs and movie cameras, which would provide a more comprehensive and detailed record of the continent.

A combination of purchased and borrowed ships brought the Byrd Antarctic Expedition from New York City to New Zealand to Antarctica. With them was approximately $1.1 million dollars worth of equipment (including three airplanes), eighty-three men that included sailors, scientists, and dog handlers (forty-two of whom would remain in Antarctica to make up the Winter Party), and ninety-five dogs. On December 25, 1928, the Byrd Antarctic Expedition landed on the world's southernmost continent.

The Barrier's Edge. Used with the permission of the Byrd Polar Research Center.

Quotes from *Little America*, by Richard Evelyn Byrd, 1930. All images from the Byrd Antarctic Expedition I, 1928-1930: Glass Slide Collection in the Byrd Polar Research Center at Ohio State University. Access the entire collection at https://byrdpolarmedia.osu.edu/index.cfm?fuseaction=collections.seeCollection&CollectionID=A03437C6-3B0E-4299-8AC7-DBD3084DC719

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Life in Little America

Time was now of the essence. The ships had to be unloaded quickly so they could return to New Zealand, load additional supplies, return to Antarctica, unload, and then sail north before the end of the Antarctic summer and the freezing of southern waters. On February 22, 1929, the final ship sailed north, leaving the forty-two men of the Winter Party behind to complete their preparations for the coming winter. This included establishing a home base several miles from the edge of the Barrier at enough of a distance to ensure that the base would not become stranded on an iceberg. The base had to be built and teams of men and dogs had to sledge the distance between the base and the Barrier with thousands of pounds of supplies. This was done in below zero temperatures and the occasional summer snowstorm. To achieve these heroic tasks, every member of the expedition helped.

Top: ***Dog Teams Preparing to Leave the Ship for the Trip to Little America.*** **Left:** ***Jim Feury and Arnold Clark Shoveling Snow.*** **Right:** ***Constructing One of the Houses in Little America.*** **Bottom:** ***A Beautiful View of Little America from a Distance. Used with the permission of the Byrd Polar Research Center.***

A permanent home base was established nine miles from the edge of the Barrier and the docked ships on January 1, 1929. Byrd named it Little America. The buildings constructed included a mess hall, administration building, meteorological station, and radio house. Other "structures" were dug out of the snow, namely hangers for the three airplanes, living quarters for the dogs (an area known as Dog Town), storage rooms, and tunnels to connect all of them. Ultimately, with the exception of three sixty-five foot radio towers, all of Little America would find itself snowed under, making a system of underground tunnels the most practical mode of city transportation. This was the world the explorers would inhabit during the Antarctic winter from March through September.

During the dark winter months a strict schedule was adhered to by the forty-two men who remained behind after the last ship had sailed to make up the Winter Party. They awoke at 8 a.m. to a breakfast of canned fruit and mush or oatmeal cakes. They then dispersed throughout the city. Weather men, radio men, carpenters, and machinists went to their respective shops, and

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the fuel engineer dispersed enough gasoline for the day's activities. The bustle of activity that took place in Little America during these winter months was directed towards the planned program of exploration that was to begin in the spring. The carpenters built and tested sledges and repaired dog harnesses. The doctor worked out a detailed daily ration for the sledgers. The radio men built small emergency radio sets. And calculations were performed to ensure that every necessary item was prepared for the springtime journeys, that every eventuality was prepared for, and every unnecessary ounce of supplies was left behind. The working day was when the inventive spirit was most evident in the men. They devised heaters that used less gasoline and thermoses that could keep food warmer longer, in addition to anything that would make life easier or safer in the inhospitable land, save fuel, supplies, or food, or allow the dog teams and airplanes to travel with lighter loads.

While lunch was an informal, buffet-style affair, the 5 p.m. supper was the major event of the day. It always contained meat (a dark mutton or roast beef, or penguin, whale, or seal meat which had been hunted in the Antarctic), canned soup, dehydrated and canned vegetables, and a dessert of custard or pie. Supper also ushered in a period of relaxation for the men. Not only was it during this time that the affairs of the day and of the next were discussed, but it allowed everyone to relax. Poker and bridge were popular entertainments in the evening hours, as was the weekly boxing match, the Sunday afternoon movie, twice weekly lectures about geology, radio science, weather, aviation, and aerial surveying, a library and victrola, and the daily press releases (received via radio each evening from *The New York Times*). Lights out occurred promptly at 10 p.m.

The Program of Exploration

The first flights had occurred on January 15, 1929, soon after Little America was established. The purpose of these flights was to ensure the planes were in good condition and to gain a first look at Antarctica by air. The first passengers on these test flights were the aviation mechanics whom Byrd chose because the mechanics "on whom every flight depends to large measure, are too frequently overlooked." (p. 102) Byrd went up the next day on a short exploration flight. In the space of a few hours he surveyed 1,200 square miles of unknown land, a feat which would have taken travelers on foot weeks to discover. "I do not altogether agree with some of the authors who say that aviation can accomplish nothing in the Antarctic," he wrote, "I am more than ever encouraged in my belief that it can accomplish a great deal." (p. 105-106)

Several additional brief flights would be made before winter set in. With these flights went Captain Ashley C. McKinley, an aerial photographer. One of the primary goals of the Byrd Antarctic

Top: ***The Radio Room with Carl Petersen at the Instrument.*** **Middle:** ***Interior of the Ford Hangar, Built Entirely of Snow Blocks.*** **Bottom:** ***A Meal at Little America. Used with the permission of the Byrd Polar Research Center.***

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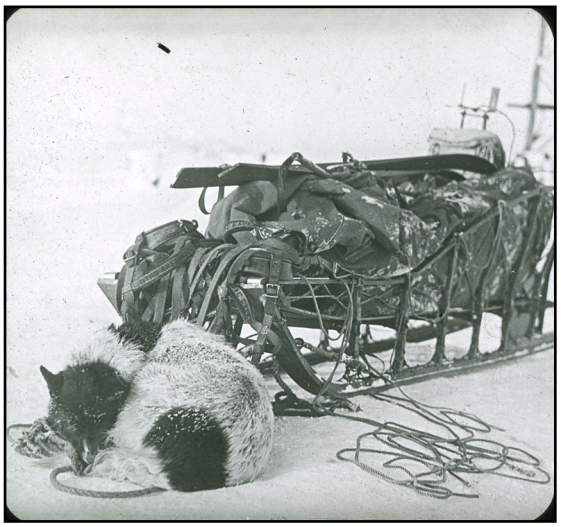
Expedition was not only to explore the region by air but to document it with still photography. Thus, while McKinley's equipment was extremely heavy it was always considered essential gear on every exploration flight. The development of his film was also a very sensitive process that required handling in absolute darkness and 200 gallons of water per reel to develop, no easy feat in a cold climate where liquid freezes almost instantly. But McKinley's photographic record was so essential to the success of the operation that every consideration was given him and the result was thousands of feet of film that is still used by researchers today.

Two flights were especially noteworthy, one because it was a sensational news story, the other because it would investigate new land to the east. The sensational flight was the one to the South Pole on November 29, 1929. For this dangerous flight Byrd chose pilot Bernt Balchen, with whom he had flown across the Atlantic in 1927, to pilot the *Floyd Bennett*. Accompanying them was McKinley and radio operator Harold June. They reached the Pole and dropped an American flag before returning home to Little America. The search for Carmen Land, an eastern area of high ground adjacent to the Queen Maud Range discovered by Amundsen, was found to be non-existent. This area would be explored further on Byrd's next flight.



Byrd called the flight to the east perhaps "the most important flight of all." (p. 348) With this flight it was hoped to determine if Antarctica was one or two continents or a series of islands in a large sea. On December 5, 1929, the *Floyd Bennett* took off with Alton N. Parker as pilot, McKinley and his photographic equipment, June as radio operator, and Byrd navigating. On this flight the explorers mapped coastlines, mountain ranges, lakes, nunataks, and ice islands in the Ross Sea. It proved that there was not only land but an immense landmass to the east, one which was always jammed with ice, making it impossible to reach by sea. Byrd named this new area Marie Byrd Land after his wife.

The last objective of the Byrd Antarctic Expedition was to complete a geological survey of the region. This was accomplished under the leadership of geologist Dr. Laurence M. Gould and a team of scientist-sledgers. This may have been the most difficult part of the entire expedition as it consisted of six men traveling 1,500 miles south in temperatures of five to thirty degrees below zero for a length of three months. During this time they discovered lichens, the southernmost evidence of life found to date, and performed a geological and geographical study of the Queen Maud Mountains and nearby glaciers. They also made an exciting discovery on December 26: the cairn built by Amundsen and his party and the note they had left behind upon reaching the South Pole on December 14-16, 1911. The Geological Party confirmed that no Carmen Land existed and explored the Ross Shelf Ice one hundred miles further east than it had been known to exist.

Top: ***The Return from the South Polar Flight.*** **Middle:** ***A Basket Sled Loaded for the Trail.*** **Bottom:** ***Amundsen's Cache Found by the Geological Party. Used with the permission of the Byrd Polar Research Center.***

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A Mississippian in Antarctica

It must have been a shock for a man born and raised in the heat and humidity of Mississippi to travel to the coldest continent on earth but Alton N. Parker did just that. Born in Hazlehurst on July 12, 1895, Parker was raised by his grandparents, attended the Mississippi Agricultural and Mechanical College (now Mississippi State University), and joined the U.S. Navy during World War I. It was while in naval aviation school in Pensacola, Florida, that he met and befriended future explorer Richard Evelyn Byrd.

Parker accompanied Byrd on his Arctic Expedition of 1926 and his first Antarctic Expedition of 1928-1930. On December 25, 1928, Parker had the distinction of being the first member of the expedition to set foot on Antarctica. Byrd wrote in his diary that as the ship the *City of New York* approached the edge of Discovery Inlet "the aviator Parker made a flying leap ashore with the cry: 'The Marines are always the first ashore.'" (p. 79) On January 15, 1929, Parker would also make the first of several flights off the Barrier, test flights made to assess the condition of the airplanes, in which he carried as passengers the aviation mechanics.

The Aviation Pilots in Conference in the Library: left to right, Dean C. Smith, Alton N. Parker, Richard E. Byrd, Bernt Balchen, and Harold June. From the Byrd Antarctic Expedition Photo Album I. Image used with the permission of the Byrd Polar Research Center. Available at http://hdl.handle.net/1811/25316

Most of 1929 was spent preparing for the expeditions that would occur in the Antarctic spring and summer which began around October and last through February. As part of the Aviation Team he worked with the mechanics to ensure that the three airplanes were kept in pristine condition and with the pilots to plan routes and make supply lists for the exploration flights, including the one to the South Pole. He also assisted aerial photographer Captain Ashely C. McKinley in developing thousands of feet of film he had taken on some short, initial exploratory flights soon after arriving in Antarctica, and, like everyone else in camp, he took his turn with daily chores such as making weather observations and shoveling snow. Parker also adopted one of the Eskimo pups born during the winter and named it Sky. At one point late in the expedition Byrd confided his fears in his diary about the dwindling dog power in camp: "We shall be hard-pressed for dogs if any rescue efforts are necessary. Gould has already proposed to borrow the two pups, Sky and Ski, which Parker and McKinley have adopted. If he values his life, he had better bring them back. McKinley and Parker will put up a real protest when this plan is suggested." (p. 276) As it happened, not only would Sky survive the expedition but would also return with Parker to Mississippi.

Ski and Sky, Two Pups Adopted by Captain McKinley and Captain Parker. Used with the permission of the Byrd Polar Research Center.

While Parker did not accompany Byrd on his historic flight to the South Pole, he was chosen to pilot a flight in December 1929 to explore the lands to the east. Byrd considered this flight perhaps "the most important flight of all." (p. 348) It resulted in a newly discovered region that Byrd christened Marie Byrd Land after his wife. After his return to the United States, Parker was awarded the Distinguished Flying Cross by Congress for his piloting ability and courage in flying into unknown lands over water and ice.

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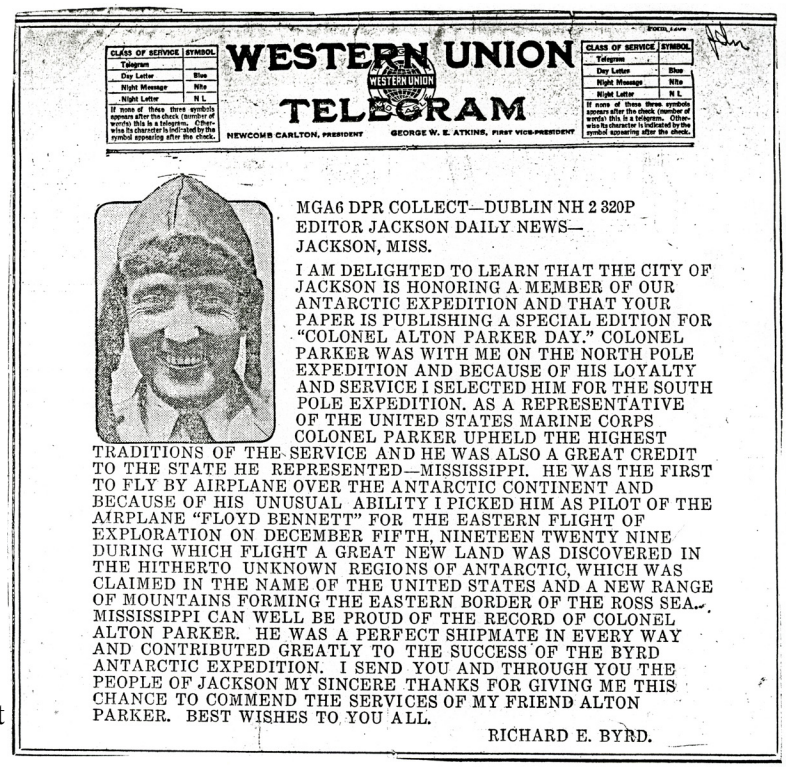
When the Byrd Antarctic Expedition returned to the United States, the explorers were hailed as heroes and treated to ticker-tape parades throughout the country. Parker arrived in Jackson, Mississippi, on September 5, 1930, where he was greeted by Governor Theodore Bilbo, Mayor Walter A. Scott, and a host of other dignitaries. In the afternoon a parade was held through downtown after which Alton N. Parker Day was celebrated at the State Capitol and Parker received numerous medals. Sky was also formally introduced and presented with a silver collar and harness.

While Byrd would go on to make four more expeditions to Antarctica, Parker did not accompany him. In 1930 he signed on as a pilot with the Transcontinental and Western Airlines, an air mail operation. Over the next thirteen years he flew over 2 million miles for the company both in the United States and abroad. He died on November 30, 1942, at the age of forty-seven.



WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT — GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

MGA6 DPR COLLECT—DUBLIN NH 2 320P
EDITOR JACKSON DAILY NEWS—
JACKSON, MISS.

I AM DELIGHTED TO LEARN THAT THE CITY OF JACKSON IS HONORING A MEMBER OF OUR ANTARCTIC EXPEDITION AND THAT YOUR PAPER IS PUBLISHING A SPECIAL EDITION FOR "COLONEL ALTON PARKER DAY." COLONEL PARKER WAS WITH ME ON THE NORTH POLE EXPEDITION AND BECAUSE OF HIS LOYALTY AND SERVICE I SELECTED HIM FOR THE SOUTH POLE EXPEDITION. AS A REPRESENTATIVE OF THE UNITED STATES MARINE CORPS COLONEL PARKER UPHELD THE HIGHEST TRADITIONS OF THE SERVICE AND HE WAS ALSO A GREAT CREDIT TO THE STATE HE REPRESENTED—MISSISSIPPI. HE WAS THE FIRST TO FLY BY AIRPLANE OVER THE ANTARCTIC CONTINENT AND BECAUSE OF HIS UNUSUAL ABILITY I PICKED HIM AS PILOT OF THE AIRPLANE "FLOYD BENNETT" FOR THE EASTERN FLIGHT OF EXPLORATION ON DECEMBER FIFTH, NINETEEN TWENTY NINE DURING WHICH FLIGHT A GREAT NEW LAND WAS DISCOVERED IN THE HITHERTO UNKNOWN REGIONS OF ANTARCTIC, WHICH WAS CLAIMED IN THE NAME OF THE UNITED STATES AND A NEW RANGE OF MOUNTAINS FORMING THE EASTERN BORDER OF THE ROSS SEA. MISSISSIPPI CAN WELL BE PROUD OF THE RECORD OF COLONEL ALTON PARKER. HE WAS A PERFECT SHIPMATE IN EVERY WAY AND CONTRIBUTED GREATLY TO THE SUCCESS OF THE BYRD ANTARCTIC EXPEDITION. I SEND YOU AND THROUGH YOU THE PEOPLE OF JACKSON MY SINCERE THANKS FOR GIVING ME THIS CHANCE TO COMMEND THE SERVICES OF MY FRIEND ALTON PARKER. BEST WISHES TO YOU ALL.

RICHARD E. BYRD.

MDAH Archives and Records Services.

The Mississippi Department of Archives and History is proud to care for two items associated with its Antarctic hero. One is the state flag that Parker brought with him to Antarctica, the only state flag on the expedition. This was presented to Lieutenant Governor Bidwell Adams during the Alton N. Parker Day celebrations. The second item is a letter written by Parker to his friend Theodore Kendall Dampeer, a friend from Crystal Springs. This letter, which briefly discusses the expedition and Parker's desire to return home, was written from Little America on October 20, 1929. When the letter was mailed and received is a bit of a mystery. On Saturday, February 2, 1929, the first mail from the American colony of Little America began its journey north on the ship the *Eleanor Bolling*. (p.132) The last ship to leave Antarctica before the winter set in was the *City of New York* which left on February 22. The forty-two men of the Winter Party would not see her or any other ship until the *City* returned twelve months later, on February 18, 1930. Thus it seems probable that Parker's letter to Dampeer was mailed in February of 1930 and when the *City* arrived in New Zealand, it probably made its way to Mississippi via a faster transport than the personnel of the expedition, thus beating Parker back home to Mississippi.

Mississippi state flag carried by Parker to Antarctica in 1928 and presented to Mississippi Lieutenant Governor Bidwell Adams on September 5, 1930. 13.25 x 18.25 inches. MDAH Museum Division Collections.

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Cool People, Places, and Words to Know

Antarctic Treaty: signed on December 1, 1959 by twelve countries, it promises that Antarctica will be used only for peaceful purposes and that scientific observations and results from Antarctica shall be exchanged and made freely available. Since 1959 the number of countries to sign the treaty has risen to fifty.

Antarctica: the South Pole.

Arctic: the North Pole.

Bay of Whales: a former indentation in the Ross Ice Shelf that housed the bases of explorers Roald Amundsen and Richard Byrd. Over ten miles wide in 1911, the bay narrowed through the 1950s when part of the ice shelf broke off and carried away part of the Little America IV station. The Bay of Whales disappeared completely in 1987 when a 99 mile long iceberg broke off from the Ross Ice Shelf.

bergs: chunks of frozen fresh water that break off ice shelves.

cairns: mounds of ice built by explorers to serve as landmarks.

calving: when a glacier or iceberg breaks off and detaches from a larger ice mass.

Carmen Land: land area seen by Roald Amundsen during his South Pole expedition in 1910-1912. The Byrd Expedition of 1928-1930 proved that this land did not exist and was most likely the product of an optical illusion, a common occurrence in Antarctica where there are no physical landmarks and where the combination of ice and sun create glare.

ceremonial South Pole: located outside the Amundsen-Scott South Pole Research Station, the ceremonial South Pole is surrounded by flags representing the nations that have signed the Antarctic Treaty.

crevasse: a fissure or deep cleft in glacial ice.

depot: a place where supplies and materials are stored for distribution at a later date.

Donald MacMillan: American explorer who made over thirty expeditions into the Arctic. Richard Byrd commanded the aviation unit attached to the MacMillan Arctic expedition in 1925.

Douglas Mawson: Australian Antarctic explorer who reached the magnetic South Pole and who was the first to climb Mount Erebus, Antarctica's second highest volcano with Ernest Shackleton in 1908.

Edsel Ford Range: a group of mountains in Marie Byrd Land, Antarctica, discovered by the Byrd Antarctic Expedition on December 5, 1929, and named for one of Byrd's financial supporters.

Ernest Shackleton: Irish explorer who traveled further south than any other explorer had previously reached, crossing the magnetic South Pole, and climbing Mount Erebus in 1908-1909. After Roald Amundsen reached the South Pole in 1911, Shackleton attempted to cross the Antarctic continent from sea to sea via the Pole

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in 1914-1917. The attempt was foiled when his ship was trapped and crushed in the pack ice, leaving the expedition members trapped on a drifting ice floe. After a harrowing journey across the open Antarctic sea, Shackleton was able to locate a whaling station on South Georgia Island who then rescued the remaining expedition members.

floes: pieces of ice ranging in size from ice cubes to slabs several feet thick and thousands of feet square which surrounds the pack.

Framheim: Roald Amundsen's base camp on the Ross Ice Shelf, established on January 14, 1911.

Frederick A. Cook: an American explorer and the first to reach the North Pole on April 22, 1908. He had previously accompanied Robert Peary on his 1891-1892 Arctic expedition and saved the lives of the expedition members by providing food that prevented scurvey. Peary later disputed Cook's claim that he reached the North Pole because he never produced detailed original navigational records and maps.

geographic South Pole: the place where all the longitude lines converge. Because the site is located on a moving glacier, the geographic pole is remarked each year.

glacier: an extended mass of ice formed from snow falling and accumulating over the years and moving very slowly, either descending from high mountains, as in valley glaciers, or moving outward from centers of accumulation, as in continental glaciers.

glare ice: ice with a smooth, glassy surface that reflects sunlight.

graupel: hail-like dry pellets of snow.

haycocks: hard snow mounds.

Knud Rasmussen: a Danish-Eskimo explorer and ethnologist who traveled throughout the American Arctic and Greenland to learn Eskimo languages, collect folktales, mythology, and songs.

Little America: Richard Byrd's Antarctic base established during his first expedition in 1928-1930.

magnetic South Pole: a wandering point on the Earth's Southern Hemisphere where the geomagnetic field lines are directed vertically upwards.

Marie Byrd Land: a region of land in Antarctica first discovered by Richard Byrd in 1929 and mapped and surveyed for the first time by Paul Siple in 1935. It is the location of a U.S. research base opened in 1959.

mirage: an optical phenomenon, especially in the desert or at sea, by which the image of an object appears displaced above, below, or to one side of its true position as a result of spatial variations of the index of refraction of air. Also very common in Antarctica both while traveling overland and while flying.

névé: granular snow that accumulates and is compacted into glacial ice.

nunatak: a hill or mountain that has been completely encircled by a glacier.

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pack: thick band of densely packed ice.

pemmican: dried meat pounded into a powder and mixed with hot fat or dried fruits or berries, pressed into a loaf that may be easily transported and eaten by polar explores.

Queen Maud Mountains: a major mountain group first explored by Roald Amundsen in November, 1911, and named for the Norwegian Queen Maud of Wales. The mountains were observed by Ernest Shackleton and Robert Scott and mapped during a series of expeditions beginning with Richard Byrd in the late 1920s.

Richard Evelyn Byrd: American explorer, pilot, and polar adventurer who headed five expeditions to Antarctica and helped bring an unprecedented level of technology to Antarctica.

Roald Amundsen: Norwegian explorer who became the first to reach the South Pole on December 14, 1911. He also explored the Northwest Passage and the North Pole before disappearing in 1928 while on a rescue mission in the Arctic.

Robert E. Peary: American explorer who reached the North Pole on April 6, 1909.

Robert F. Scott: British polar explorer who staged two expeditions to Antarctica. On the second, from 1910-1912, he and four companions reached the South Pole only to find that Roald Amundsen had reached it five weeks prior. The five men all perished on the journey back to their base camp due to bad weather conditions, starvation, illness, and ill-fortune.

Rockefeller Mountains: a group of mountains discovered by the Byrd Antarctic Expedition on January 27, 1929, and named for one of Byrd's financial supporters.

Ross Ice Shelf (also known as the Great Ice Barrier or the Barrier): the world's largest body of floating ice, it measures approximately 188,000 square miles – the size of France – and is between 1,100 and 2,300 feet thick. It rises between 50 and 160 feet above the water but ninety percent of the floating ice is below the water level. The Ross Ice Shelf is loosely attached to land but due to crevasses and calving icebergs it is in continual movement. Little America was located on the Ross Ice Shelf.

Ross Sea: the southernmost area of the Pacific Ocean which makes a deep indentation into the circular continental outline of Antarctica. Because it is the least iced and most accessible of the Antarctic seas it has been used by many explorers to reach the continent. Today it is regularly accessed by tourist vessels.

sastrugi: ridges of snow formed on a snowfield by wind.

sledge: a sled mounted on runners and pulled by dogs that is used to transport people or goods over snow and ice.

sledging: to drive a dog-pulled sled.

Ver-sur-Mer Bay: inlet on the Bay of Whales where Little America was founded. Named after a fishing village in France where Byrd had to make a forced landing on his flight across the Atlantic in 1927.

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Byrd Expedition.
Little America,
Antarctica,
Oct 20, 1929.

Dear Kimell,

How is every thing in Crystal Springs? I heard that the season wasn't so good there last year. That is one thing about this world, and that is, it is cold all the time. We have had some rather interesting as well as exciting experiences. Our quatest and most interesting work is yet to be done. In three months from now the story will be told and we will be on our way home. Four months from then we will arrive in New York, with good luck. The dog teams are on the trail and we are digging our planes from their snow hangars. They are about twelve feet beneath the surface.

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The sun has returned and for about a month we have day and night. After that we will have daylight all the time. We have the most beautiful sunsets here I have ever seen. I don't think any person has ever seen sunsets so beautiful as they are here. I saw a green sunset the other afternoon, or a green flash, as it is called. Well Matta May how are you and your little daughter getting along? I have an Eskimo dog and will have Jack take her riding behind him when we return. He is on the trail now. A beautiful black dog with white marking on feet & chest. He is seven months old and weighs eighty pounds. Every one says he is the best looking dog in Camp. I'm looking forward to my return to U.S.A. & Crystal Springs, or home. Best regards to all my friends. Kindness and luck to you all. Tell your mother and dad Hello, and Dr. Jim. So long

Alton!

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Alton N. Parker Letter Transcript

PAGE ONE

Byrd Expedition,
Little America,
Antarctica,
Oct 20, 1929.

Dear Kendall,

How is every thing in Crystal Springs? I heard that the season wasn't so good there last year. That is one thing about this world, and that is, it is cold all the time. We have had some rather interesting as well as exciting experiences. Our greatest and most interesting work is yet to be done.

In three months from now the story will be told and we will be on our way home. Four months from then we will arrive in New York, with good luck. The dog teams are on the trail and we are digging our planes from their snow hangers. They are about twelve feet beneath the surface.

PAGE TWO

The sun has returned and for about a month we have day and night. After that we will have daylight all the time. We have the most beautiful sunsets here I have ever seen. I don't think any person has ever seen sunsets as beautiful as they are here. I saw a green sunset the other afternoon, or a green flash, as it is called.

Well Mattie May how are you and your little daughter getting along? I have an Eskimo dog and will have Jack take her riding behind him when we return. He is on the trail now. A beautiful black dog with white marking on feet and chest. He is seven months old and weighs eighty pounds. Every one says he is the best looking dog in camp. I'm looking forward to my return to U.S.A. and Crystal Springs, <u>or home</u>. Best regards to all my friends, Kendall and luck to you all. Tell your Mother and dad Hello, and Dr. Jim. So long

Alton

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Letter Discussion Guide

What do you think the phrase "Our greatest and most interesting work is yet to be done" refers to?

The flight to the South Pole and the exploring and scientific work that will be done during the Antarctic summer.

Parker says that it will take four months (with good luck) to return to New York. Why would it take so long to return?

First, the ships had to get through the pack ice to Little America and the amount of ice varied from year to year, making it difficult to judge in advance how quickly a ship could get to Antarctica. Secondly, the ships not only had to get through the ice but could encounter other bad weather that could delay their voyage or damage the ship to the extent that it needed to find a harbor for repairs. The ships were also sailing with a combination of sail and coal power and thus dependent on the wind and the coal supply. Finally, on the return voyage (as on the voyage to Antarctica) the ships stopped in New Zealand where a reshuffling of men, dogs and supplies took place. Some members of the expedition immediately returned to the states, such as the news and cameramen, who needed to get their stories, film, and photos into newspapers around the world. Others remained in New Zealand for months as they helped disband the expedition's supplies.

Why does Parker say they will have day and night for only a month and then daylight all the time?

Antarctica and the Arctic have long periods of constant daylight followed by long periods of constant night because they lie at very low latitudes. This means that at times the bottom of the Earth points more towards the sun creating an Antarctic day where the sun never sets below the horizon. At other times the Earth points away from the sun and the light cannot reach it, creating the Antarctic night.

What is a green flash?

Atmospheric conditions in Antarctic lead to many unusual weather phenomena so it makes a wonderful place to conduct scientific experiments and observations related to weather (hence the presence of weather experts on the Byrd Expedition). The green flash that Parker mentions refers to a phenomena where the last sliver of a setting sun turns vivid green or blue. It is caused when the atmosphere acts like a prism and spreads the sunlight into a spectrum of colors that shows blue and green above the horizon and others below. Because the sun rises and sets so slowly in Antarctica the green flashes can last for hours.

How do you think Parker feels about his dog? Explain your reasoning.

How do you think Parker feels about home? Explain your reasoning.

Compare Parker's words about sunsets and Eskimo dogs to Byrd's in the excerpts. How are their descriptions and opinions the same? How are they different?

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NAME _____ DATE _____

Close Reading #1: Sunsets

The following excerpt is from the 1930 book *Little America* by Richard Evelyn Byrd. Read the excerpt carefully and mark the text in the following manner:

- Underline the verbs.
- Circle the adjectives.
- Highlight one example of imagery.
- In the left margin, using 10 words or less, write the theme of the excerpt.
- In the right margin, draw the theme of the excerpt.

> ***We last saw the sun on April 17th, but its beauty remained behind…This last time it rolled like a burning disc around the northern horizon, touching off in a final burst of radiance the scene it would quit for four months. It poised for a while on the western horizon, and a long, tantalizing twilight began to spread gray tendrils over the Barrier. Then it dipped suddenly below the horizon. An eruption of green, blue, red and yellow diffused the entire southern horizon, and stayed for a time the descent of night. But night advanced with deepening power, and soon was in full sway of his empire. (p. 196-197)***

What is one word that you don't know the definition of? _____

What is one word to describe the tone of the excerpt? _____

Explain the meaning of the final sentence. _____

_____

Do you think the author considers the Antarctic sunsets good or bad? Why? _____

_____

What is one question that you would like to ask the author? _____

_____

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NAME _____ DATE _____

Close Reading #1: Sunsets Answer Key

The following excerpt is from the 1930 book *Little America* by Richard Evelyn Byrd. Read the excerpt carefully and mark the text in the following manner:

- Underline the verbs.
- Circle the adjectives.
- Highlight one example of imagery.
- In the left margin, using 10 words or less, write the theme of the excerpt.
- In the right margin, draw the theme of the excerpt.

The final, brilliant sunset before months of continued darkness.

We last saw the sun on April 17th, but its beauty remained behind…This last time it rolled like a burning disc around the northern horizon, touching off in a final burst of radiance the scene it would quit for four months. It poised for a while on the western horizon, and a long, tantalizing twilight began to spread gray tendrils over the Barrier. Then it dipped suddenly below the horizon. An eruption of green, blue, red and yellow diffused the entire southern horizon, and stayed for a time the descent of night. But night advanced with deepening power, and soon was in full sway of his empire. (p. 196-197)

What is one word that you don't know the definition of? _____

What is one word to describe the tone of the excerpt? _____

Explain the meaning of the final sentence. _____

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Do you think the author considers the Antarctic sunsets good or bad? Why? _____

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What is one question that you would like to ask the author? _____

_____

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NAME _____ DATE _____

Close Reading #2: Dog Teams

The following excerpt is from the 1930 book *Little America* by Richard Evelyn Byrd. Read the excerpt carefully and mark the text in the following manner:

- Underline the verbs.
- Circle the adjectives.
- Highlight one example of imagery.
- In the left margin, using 10 words or less, write the theme of the excerpt.
- In the right margin, draw the theme of the excerpt.

Knud Rasmussen once said, "I bless the fate which allowed me to be born in an age when the Arctic dog sledge was not yet out of date." And after seeing them race into Little America, team after team, while the drivers fought top-heavy loads which threatened constantly to tip over into the snow, I could exclaim with him. Had it not been for the dogs, our attempts to conquer the Antarctic by air must have ended in failure. On January 17th, Walden's single team of thirteen dogs moved 3,500 pounds of supplies from ship to base, a distance of 16 miles each trip, in two journeys. Walden's team was the backbone of our transport. (p. 107)

What is one word that you don't know the definition of? _____

What is one word to describe the tone of the excerpt? _____

Explain the meaning of the final sentence. _____

_____

Do you think the author considers the dogs important to the expedition? Why or why not? _____

_____

What is one question that you would like to ask the author? _____

_____

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Close Reading #2: Dog Teams Answer Key

The following excerpt is from the 1930 book *Little America* by Richard Evelyn Byrd. Read the excerpt carefully and mark the text in the following manner:

- Underline the verbs.
- Circle the adjectives.
- Highlight one example of imagery.
- In the left margin, using 10 words or less, write the theme of the excerpt.
- In the right margin, draw the theme of the excerpt.

The importance of dogs and sledging to Antarctic transportation.

Knud Rasmussen once said, "I bless the fate which allowed me to be born in an age when the Arctic dog sledge was not yet out of date." And after seeing them race into Little America, team after team, while the drivers fought top-heavy loads which threatened constantly to tip over into the snow, I could exclaim with him. Had it not been for the dogs, our attempts to conquer the Antarctic by air must have ended in failure. On January 17th, Walden's single team of thirteen dogs moved 3,500 pounds of supplies from ship to base, a distance of 16 miles each trip, in two journeys. Walden's team was the backbone of our transport. (p. 107)

What is one word that you don't know the definition of? _____

What is one word to describe the tone of the excerpt? _____

Explain the meaning of the final sentence. _____

_____

Do you think the author considers the dogs important to the expedition? Why or why not? _____

_____

What is one question that you would like to ask the author? _____

_____

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NAME _____ DATE _____

Math Worksheet #1: Weather

Use the excerpts from the 1930 book *Little America* by Richard Evelyn Byrd to answer the following questions.

> ***How cold was it, really, at Little America?***
> ***Well, let us look at [meteorologist William] Haines' charts. During 114 days the temperature reached 40° below zero; on 62 days, 50° below; on 33 days, 60° below, and on three days, 70° below. Yet it was subject to violent changes. During a blizzard on the 5th and 6th of June, the temperature rose from 49° below to 16° above in the space of 20 hours – a change of 65 degrees. A rise in temperature of from 30° to 40° within a few hours was not uncommon during a blizzard; in fact, was a characteristic result. (p. 231)***

1. The temperature dropped below 40° for 212 days. Express the fractional part of the 212 days that the lowest temperatures were in the -40s, -50s, -60s, and -70s.

   - 40°F = _____ - 50°F = _____

   - 60°F = _____ - 70°F = _____

2. Simplify the fractions to their simplest form.

   - 40°F = _____ - 50°F = _____

   - 60°F = _____ - 70°F = _____

3. Compare the following fractions using the symbols > , < , or =

   $\frac{114}{212}$ _____ $\frac{62}{212}$ $\frac{62}{212}$ _____ $\frac{31}{106}$

   $\frac{3}{212}$ _____ $\frac{33}{212}$ $\frac{57}{106}$ _____ $\frac{31}{106}$

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NAME _____ DATE _____

May began with a warm spell. On the 2nd the thermometer registered as high as 13 degrees above zero. But on the 4th it plunged to 42° below. On the 26th, a wind from the south-southeast drove it up to 5° above after an uninterrupted spell of sub-zero weather, but the wind shifted again to the east and before the day ended, the thermometer read 38° below zero. The monthly average was 22.6° below. (p. 230)

1. What was the range in temperature between May 2nd and 4th?

2. What was the range in temperature on May 26th?

3. Chart the monthly averages on the number line.

May 1929: 22.6° below June 1929: 10.7° below July 1929: 44.7° below

-50° -40° -30° -20° -10° 0° 10°

_____

…March [1929] was the cloudiest of all months. Haines' charts show that during its 31 days, there was only one clear day. Eight were partly cloudy and twenty-two very cloudy… (p.187)

1. Express in fractional form the number the days of the month for each type of weather condition.

   clear days =

   partly cloudy days =

   very cloudy days =

2. Translate the fractions into percentages. Round answers to the nearest whole number.

   clear days =

   partly cloudy days =

   very cloudy days =

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NAME _____ DATE _____

Math Worksheet #1: Weather Answer Key

Use the excerpts from the 1930 book *Little America* by Richard Evelyn Byrd to answer the following questions.

> ***How cold was it, really, at Little America?***
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1. The temperature dropped below 40° for 212 days. Express the fractional part of the 212 days that the lowest temperatures were in the -40s, -50s, -60s, and -70s.

   - 40°F = $\frac{114}{212}$ — - 50°F = $\frac{62}{212}$

   - 60°F = $\frac{33}{212}$ — - 70°F = $\frac{3}{212}$

2. Simplify the fractions to their simplest form.

   - 40°F = $\frac{57}{106}$ — - 50°F = $\frac{31}{106}$

   - 60°F = $\frac{33}{212}$ — - 70°F = $\frac{3}{212}$

3. Compare the following fractions using the symbols > , < , or =

   $\frac{114}{212} > \frac{62}{212}$ $\qquad$ $\frac{62}{212} = \frac{31}{106}$

   $\frac{3}{212} < \frac{33}{212}$ $\qquad$ $\frac{57}{106} > \frac{31}{106}$

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NAME _____ DATE _____

May began with a warm spell. On the 2nd the thermometer registered as high as 13 degrees above zero. But on the 4th it plunged to 42° below. On the 26th, a wind from the south-southeast drove it up to 5° above after an uninterrupted spell of sub-zero weather, but the wind shifted again to the east and before the day ended, the thermometer read 38° below zero. The monthly average was 22.6° below. (p. 230)

1. What was the range in temperature between May 2nd and 4th?

   13 - -42 =

   13 + 42 = 55 degree difference

2. What was the range in temperature on May 26th?

   5 - -38 =

   5 + 38 = 43 degree difference

3. Chart the monthly averages on the number line.

May 1929: 22.6° below June 1929: 10.7° below July 1929: 44.7° below

-50° -40° -30° -20° -10° 0° 10°

x July 1929 x May 1929 x June 1929

…March [1929] was the cloudiest of all months. Haines' charts show that during its 31 days, there was only one clear day. Eight were partly cloudy and twenty-two very cloudy… (p.187)

1. Express in fractional form the number the days of the month for each type of weather condition.

   clear days = $\frac{1}{31}$

   partly cloudy days = $\frac{8}{31}$

   very cloudy days = $\frac{22}{31}$

2. Translate the fractions into percentages. Round answers to the nearest whole number.

   clear days = **1 / 31 = 0.0323 0.0323 x 100 = 3.23 rounded to 3% clear days**

   partly cloudy days = **8 / 31 = 0.2580 0.2580 x 100 = 25.8 rounded to 26% partly cloudy days**

   very cloudy days = **22 / 31 = 0.7097 0.7097 x 100 = 70.97 rounded to 71% very cloudy days**

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Math Worksheet #2: The Sledge Teams

Use the excerpts from the 1930 book *Little America* by Richard Evelyn Byrd to answer the following questions.

> ***It was almost impossible to believe that the most important preliminary operation of the expedition – the unloading of the ships – was actually accomplished; that 225 tons of supplies from the* City *and 440 tons from the* Bolling *had been unloaded and carried to the base, under really dangerous conditions, without the loss of a man and only the loss of one or two sacks of coal. Some statistician had already figured out that the sledges had traveled a total of 12,500 miles in the shuttle operation between the ships and Little America. (p. 148)***

1. Little America was located approximately nine miles from the ships at the edge of the Barrier. How many round trips did it take the sledgers to transport all the supplies from the ships to the base? Round the answer to the nearest whole number.

2. There are 2,000 pounds in one ton. How many pounds of supplies were transported?

_____

Dog handlers calculated that each dog could pull about 150 pounds.

1. If a sledger had five dogs on his team, up to how many pounds of supplies could he transport per trip?

2. If a sledger had thirteen dogs on his team, up to how many pounds of supplies could he transport per trip?

_____

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NAME _____ DATE _____

In March 1929, four sledgers embarked on a depot-laying trip to store supplies along the trail that would be traveled by the Geological Party in the spring.

> ***The following depots were made and the following supplies cached:***
> ***20 mile depot, 180 pounds dog food, 50 pounds man food, 8 pounds clothing, and one lobster pot tent.***
> ***40 mile depot, 300 pounds dog food, 100 pounds man food, 8 pounds clothing, one lobster pot tent, and one primus stove.***
> ***44 mile depot, 300 pounds dog food, 371 pounds man food, 8 pounds clothing, two lobster pot tents, one primus stove, two pairs snowshoes, two ice hatchets, one hatchet and one sledge runner. (p. 174)***

1. Each sledge team set out pulling 800 pounds. How much did they begin with total?

2. The sledgers distributed approximately 1,350 pounds of supplies among the three depots. What was the approximate weight of the supplies needed to make the trip there and back?

3. 1,700 pounds of dog food (pemmican) was brought along. How much was not deposited at the three depots?

4. Assuming that the sledgers carried a 20% safety ration of pemmican as required by Byrd and that it was not deposited during the journey, how much pemmican did the dogs eat on the trip?

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NAME _____ DATE _____

Math Worksheet #2: The Sledge Teams Answer Key

Use the excerpts from the 1930 book *Little America* by Richard Evelyn Byrd to answer the following questions.

> ***It was almost impossible to believe that the most important preliminary operation of the expedition – the unloading of the ships – was actually accomplished; that 225 tons of supplies from the* City *and 440 tons from the* Bolling *had been unloaded and carried to the base, under really dangerous conditions, without the loss of a man and only the loss of one or two sacks of coal. Some statistician had already figured out that the sledges had traveled a total of 12,500 miles in the shuttle operation between the ships and Little America. (p. 148)***

1. Little America was located approximately nine miles from the ships at the edge of the Barrier. How many round trips did it take the sledgers to transport all the supplies from the ships to the base? Round the answer to the nearest whole number.

   12,500 / 9 = 1,388.89 trips **9 x 2 = 18 miles round trip**

   OR

   1,388.9 / 2 = 694.44 rounded to 694 round trips **12,500 / 18 = 694.44 rounded to 694 round trips**

2. There are 2,000 pounds in one ton. How many pounds of supplies were transported?

   225 + 440 = 665 tons

   665 x 2,000 = 1,330,000 pounds

Dog handlers calculated that each dog could pull about 150 pounds.

1. If a sledger had five dogs on his team, up to how many pounds of supplies could he transport per trip?

   5 x 150 = 750 pounds

2. If a sledger had thirteen dogs on his team, up to how many pounds of supplies could he transport per trip?

   13 x 150 = 1,950 pounds

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NAME _____ DATE _____

In March 1929, four sledgers embarked on a depot-laying trip to store supplies along the trail that would be traveled by the Geological Party in the spring.

> ***The following depots were made and the following supplies cached:***
> ***20 mile depot, 180 pounds dog food, 50 pounds man food, 8 pounds clothing, and one lobster pot tent.***
> ***40 mile depot, 300 pounds dog food, 100 pounds man food, 8 pounds clothing, one lobster pot tent, and one primus stove.***
> ***44 mile depot, 300 pounds dog food, 371 pounds man food, 8 pounds clothing, two lobster pot tents, one primus stove, two pairs snowshoes, two ice hatchets, one hatchet and one sledge runner. (p. 174)***

1. Each sledge team set out pulling 800 pounds. How much did they begin with total?

   800 x 4 = 3,200 pounds

2. The sledgers distributed approximately 1,350 pounds of supplies among the three depots. What was the approximate weight of the supplies needed to make the trip there and back?

   3,200 - 1,350 = 1,850 pounds

3. 1,700 pounds of dog food (pemmican) was brought along. How much was not deposited at the three depots?

   180 + 300 +300 = 780 pounds stored at depots

   1,700 - 780 = 920 pounds not cached

4. Assuming that the sledgers carried a 20% safety ration of pemmican as required by Byrd and that it was not deposited during the journey, how much pemmican did the dogs eat on the trip?

   20 / 100 = 0.2

   0.2 x 920 = 184 pounds as safety ration

   920 - 184 = 736 pounds of pemmican eaten

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Math Worksheet #3: Flying

Use the excerpts from the 1930 book *Little America* by Richard Evelyn Byrd to answer the following questions.

> ***Here is my list of ideal equipment for the [South Pole] base-laying flight ... Gas for 900 miles at 6 lbs. per gal., and consumption of 52 gals. Per hour, with 20% safety factor ... 3,370 pounds (p. 246)***

1. How many gallons of gas does this estimate include? Round the answer to the nearest whole number.

2. How many hours can be flown on this amount of gas?

3. Using your answer from #2, if the average speed of the airplane is 100 mph, how many miles can the plane travel?

> ***[Pilot and radioman Harold June believed that] The amount of gasoline you can cache also depends upon whether you carry it in cans alone, or in cans held in boxes. In 5 gallon cans, the gasoline averages 7 pounds per gallon; with the boxes, 9 pounds per gallon. If the field is bumpy, you ought to have boxes. The cans won't stand much pounding around. (p. 246)***

1. If 3,370 pounds of gas is carried in cans, how many gallons can be carried? Round the answer to the nearest whole number.

2. How many hours can be flown on this amount of gas?

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NAME _____ DATE _____

3. Using your answer from #2, if the average speed of the airplane is 100 mph, how many miles can the plane travel?

4. If 3,370 pounds of gas is carried in boxes, how many gallons can be carried? Round the answer to the nearest whole number.

5. How many hours can be flown on this amount of gas?

6. Using your answer from #5, if the average speed of the airplane is 100 mph, how many miles can the plane travel?

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NAME _____ DATE _____

Math Worksheet #3: Flying Answer Key

Use the excerpts from the 1930 book *Little America* by Richard Evelyn Byrd to answer the following questions.

> ***Here is my list of ideal equipment for the [South Pole] base-laying flight ... Gas for 900 miles at 6 lbs. per gal., and consumption of 52 gals. Per hour, with 20% safety factor ... 3,370 pounds (p. 246)***

1. How many gallons of gas does this estimate include? Round the answer to the nearest whole number.

   3,370 / 6 = 561.67 rounded to 562 gallons

2. How many hours can be flown on this amount of gas?

   562 / 52 = 10.81 hours

3. Using your answer from #2, ifthe average speed of the airplane is 100 mph, how many miles can the plane travel?

   10.81 x 100 = 1,081 miles

> ***[Pilot and radioman Harold June believed that] The amount of gasoline you can cache also depends upon whether you carry it in cans alone, or in cans held in boxes. In 5 gallon cans, the gasoline averages 7 pounds per gallon; with the boxes, 9 pounds per gallon. If the field is bumpy, you ought to have boxes. The cans won't stand much pounding around. (p. 246)***

1. If 3,370 pounds of gas is carried in cans, how many gallons can be carried? Round the answer to the nearest whole number.

   3,370 / 7 = 481.43 rounded to 481 gallons

2. How many hours can be flown on this amount of gas?

   481 / 52 = 9.25 hours

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NAME _____ DATE _____

3. Using your answer from #2, ifthe average speed of the airplane is 100 mph, how many miles can the plane travel?

   9.25 x 100 = 975 miles

4. If 3,370 pounds of gas is carried in boxes, how many gallons can be carried? Round the answer to the nearest whole number.

   3,370 / 9 = 374.44 rounded to 374 gallons

5. How many hours can be flown on this amount of gas?

   374 / 52 = 7.19 rounded to 7 hours

6. Using your answer from #5, if the average speed of the airplane is 100 mph, how many miles can the plane travel?

   7 x 100 = 700 miles

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Further Reading

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Helpful Internet Resources

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MISSISSIPPI DEPARTMENT OF HISTORY LESSON PLANS

TEACHER EVALUATION

COMPLETE BOTH SIDES AND PLEASE MAIL OR FAX TO THE ADDRESS ON THE NEXT PAGE. THANK YOU!

TEACHER NAME _____

SCHOOL NAME & ADDRESS _____

_____

EMAIL *(OPTIONAL)* _____

TOTAL NUMBER OF STUDENTS_____ **GRADE LEVEL** _____

LESSON TITLE _____***A Mississippian in Antarctica*** _ _____

1. In your opinion, did this lesson elicit better than average student response; if so, how?

2. Which segments of the lesson exceeded your students' attention span?

3. Will this lesson be of assistance to you in developing future classroom activities; if so, how?

4. How did this lesson add to your earlier teaching on the same subject?

5. Would this lesson plan be handier to use as a:
   ___multi-day unit ___multi-week unit ___other

6. Were the activities appropriate for your students? Why or why not?

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Please rate the following lesson materials and activities by circling the appropriate number.

4=excellent, **3**=good, **2**=average, **1**=inadequate

Directions and Notes	4	3	2	1
Curricular Connections	4	3	2	1
Student Worksheets	4	3	2	1
Interactive Activities	4	3	2	1
Historic Images	4	3	2	1
References and Resources	4	3	2	1

Activity One: Antarctica Overview	4	3	2	1
Activity Two: Close Reading	4	3	2	1
Activity Three: Antarctic Math	4	3	2	1
Activity Four: A Changing Continent	4	3	2	1
Extension Activities	4	3	2	1
Overall Unit	4	3	2	1

We would appreciate any additional comments on this teaching unit and any suggestions for improvement. Comments may be entered in the space below.

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