Art & Literature

Science

EDUCATION DAYS

LEARNING IS A SCREAM AT LAKE WINNIE!

LAKE WINNEPESAUKAH

Teachers Guide

SOCIAL STUDIES

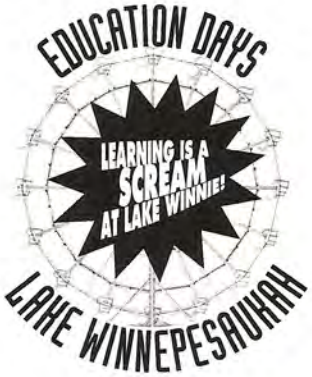
MATH & PHYSICS

Come On, Get Happy

Lake Winnepesaukah

Amusement Park

CHATTANOOGA - TENNESSEE



Come On, Get Happy
Lake Winnepesaukah
Amusement Park
CHATTANOOGA - TENNESSEE

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NOTE TO TEACHERS:

You are to be congratulated for getting your students out of the classroom, so they can see how science operates in the real world.

Before you come to Lake Winnepesaukah it will be best if students have a working knowledge of Newton's 3 laws of motion. See the following pages for an overview of the laws and simple demonstration activities that can be done in the classroom, and internet sites with applicable lesson plans.

As students move around the park answering the questions on the handout, it will be important that each group have:

A stopwatch (or watch with a second hand)
A pen or pencil
Clip Board (optional)
Calculators would be helpful to make quick calculations
Bathroom scale (optional)

Decide if you want each student to have their own copy of the questions and information, or if each group* only needs one, then make sure you have enough copies. Remind students to put their names on their completed forms, and keep them as clean, dry and wrinkle-free as possible during this exciting day.

If your students have a shorter amount of time, or attention span, do not feel that they need to do all the activities. You can assign the ones that you are the most interested in them doing, because they match best with what you have been studying in class, or best meet their ability level.

Please remind your students to be considerate of the other guests in the park, and have a great day!

*NOTE: Recommended # in each group is 8-10. Lake Winnie furnishes 1 copy of this handout, unbound, for teacher's ease of copying.

Newton's 3 Laws of Motion

Newton's 1st Law (Law of Inertia)

The First Law says that objects at rest tend to stay at rest and objects in motion tend to stay in motion and in a straight line. That's why it's hard to get something moving from a complete stand still (like pushing a car), why you have to wear a seat belt to keep from flying forward if the car stops suddenly, and why when you swing something around it wants to fly off in a straight line. Try these simple demonstrations at home or in the classroom.

Put an object into a wagon or toy car and let it roll down a ramp and come to a sudden stop, so the object flies forward. This simulates the need for a seat belt.

Put a book or other slightly heavy object on a sheet of paper or cloth and then jerk the paper or cloth out quickly. Or, place a note card over a cup with a coin on top then pull or "flick" the card out quickly so the coin drops into the cup. These both simulate the table cloth from under the dishes trick.

Tie a string onto a cup or can, add some water and swing the cup or can upside down without any water coming out. This simulates artificial gravity.

Newton's 3 Laws of Motion

Newton's 2nd Law

The Second Law says that when a force is applied to an object, the object accelerates in the direction of the force, and the more force you apply, then the more acceleration you will have also, but the more mass you have (the heavier the object), then the less acceleration. That's why a ball goes the direction you hit it, the ball goes faster when you hit it harder, and a heavier ball would require a harder hit to go the same distance (or a bigger car requires a bigger engine).

TRY THIS AT HOME OR AT SCHOOL:
Experiment with balls with very different weights; ping pong ball vs. softball or tennis ball vs. bowling ball. See that it takes more force to get the heavier ball rolling or that if you push the same size ball with more force it accelerates faster.

Newton's 3rd Law

The Third Law says that for every action there is an equal and opposite reaction. That's why rockets and jet airplanes go forward when the exhaust is shooting out the back.

TRY THIS AT HOME OR AT SCHOOL:
1. Attach a balloon to a straw and then with a pin to a pencil eraser to make it spin around. Or, attach a straw to the side of a balloon and run a tight string through it so the balloon will shoot along the string when released.
2. Have two students sit on rolling objects (chairs, skateboards, etc.) and push against each other. They should both go backwards.

Some Helpful Amusement Park Internet Sites

AMUSEMENT PARK PHYSICS: WHAT ARE THE FORCES BEHIND THE FUN?
http://www.learner.org/exhibits/parkphysics/

AMUSEMENT PARK PHYSICS
http://www.wcsscience.com/amusement/park.html

AMUSE ME: THEME PARK PHYSICS
http://library.thinkquest.org/C005075F/

THE PHYSICS OF AMUSEMENT PARKS
http://library.thinkquest.org/2745/data/openpark.htm?tqskip1=1

ROLLER COASTER SIMULATION
http://www.funderstanding.com/k12/coaster/

HOW STUFF WORKS: HOW ROLLER COASTERS WORK
http://www.howstuffworks.com/roller-coaster.htm

ROLLER COASTER PHYSICS WITH LABS
http://www.vast.org/vip/book/home.htm

AMUSEMENT PARK PHYSICS LESSON PLANS
http://www.physics.emich.edu/amusement/

Designing at Lake Winnie

1. Create a billboard or logo for a new ride or for the park.

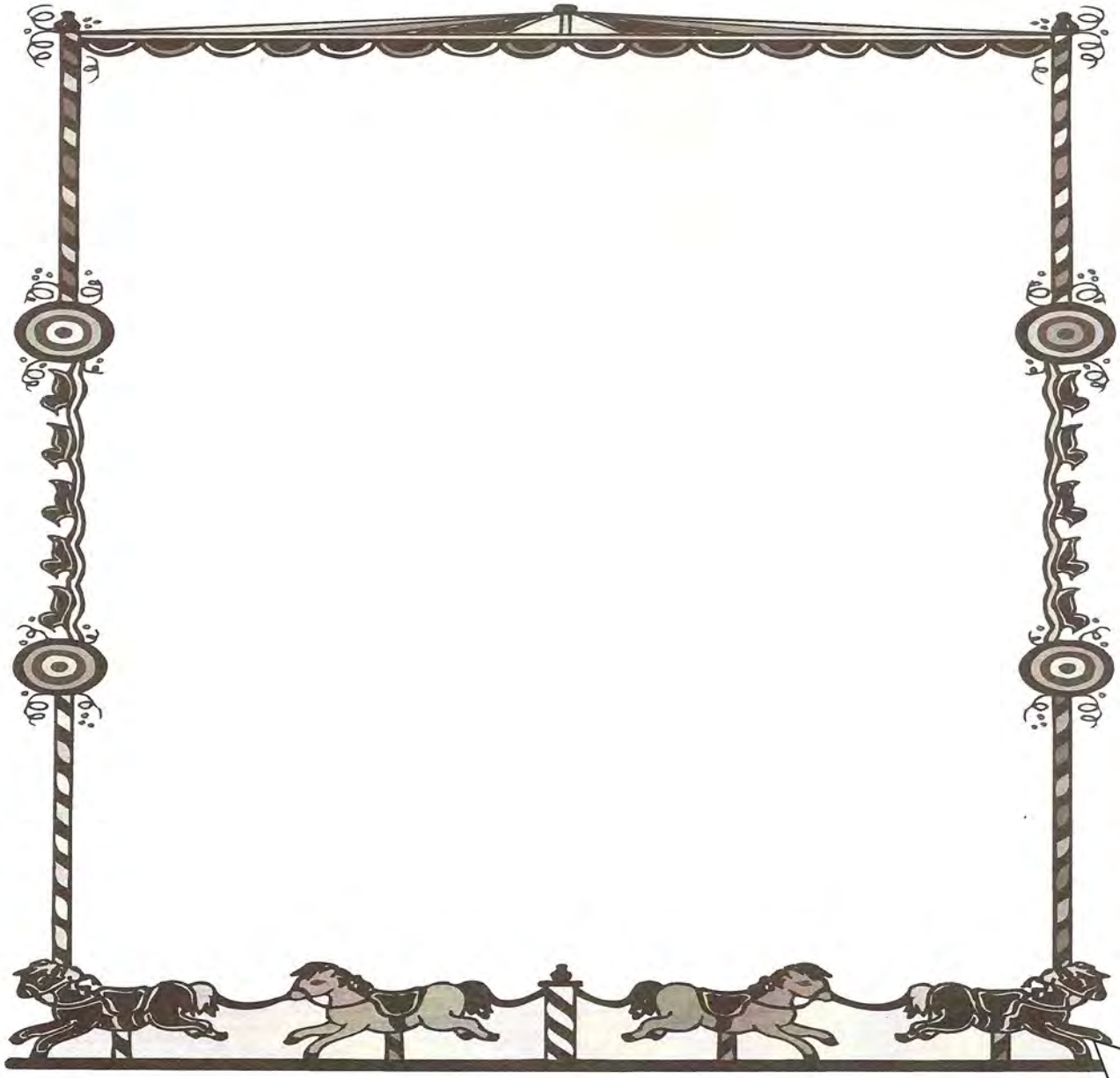
2. Design a new "mascot" or animal for the park.

Designing at Lake Winnie

3. Design a new water attraction or ride to compliment the Pipeline Plunge.

Designing at Lake Winnie

5. Design and draw a picture of a horse or other animal/creature that you would want to make for the Carrousel. Remember that most Carrousel horses and other creatures are colorful and have a lot of detail.



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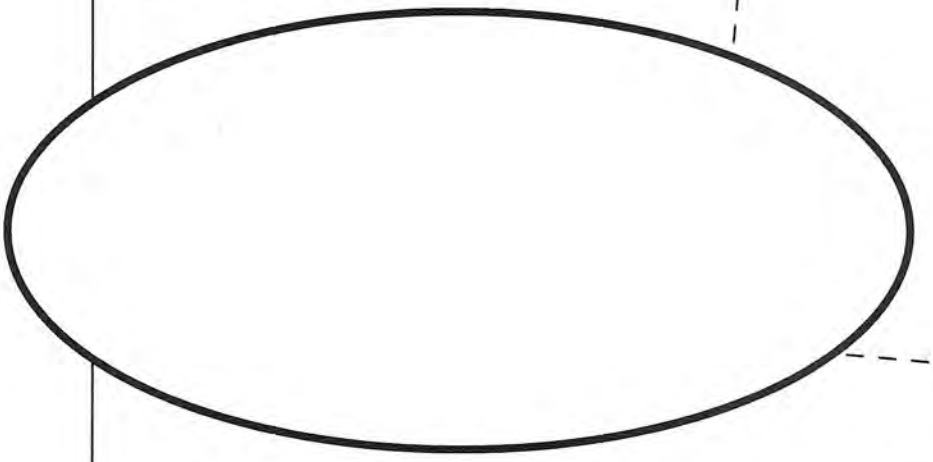
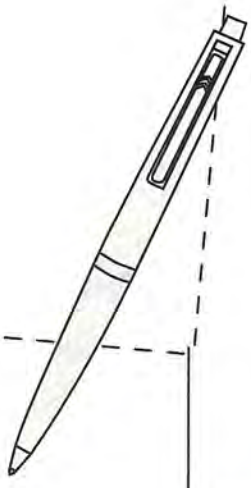
Follow Up Activities (for after your visit)

Writing Across the Curriculum

1. Write a brief description of your trip to the park. Include all your senses (i.e. hear and feel besides just see) and how it made you feel.

2. Which of the learning activities did you enjoy or learn the most about?





3. Write a brief advertisement for Lake Winnepesaukah, using descriptive phrases and words of all the fun and excitement that can be experienced there.

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Follow Up Activities (for after your visit)

Poetry in the Park

A very important characteristic of poetry is that it tries to involve the reader in experiences, emotions, moods, attitudes, or ideas rather than just telling about them. It appeals directly to the senses, (sound, smell, taste and touch) so we feel and share what a poet wishes to convey. To do this, the poet relies on imagery or word pictures to get the idea across.

One special type of poetry that uses imagery is the ***haiku.*** It is a Japanese poem of three lines, usually having 5, 7 and 5 syllables, that creates a picture which arouses an emotional response and some further insight or thought.

1. Look at the example and compose a ***haiku*** that paints a word picture of an experience or feeling that you had during your visit to Lake Winnepesaukah.

Example: On the "Lightnin" swift (5)
I gasp breathless and hold tight (7)
Senses, soul, flash of life. (5)

2. Use the following fun figures of speech to describe some things you notice while at the park.

Onomatopoeia: The effect when words are made to sound like the thing they mean.
Example: The "buzz" of bees, the "whir" of the motor.

Personification: Animals, things, ideas are given human qualities.
Example: The gourmet ice "bit" my tongue.

Alliteration: First letter of words are the same.
Example: Cannonball clattering, climbing, collecting...

3. Create an illustrated poetry book that goes along with each ride you go on while at Lake Winnepesaukah.

English at Lake Winnie

4. Write a :30 second radio advertisement for Lake Winnepesaukah, using descriptive phrases and words of all the fun and excitement that can be experienced there.

Geography

1. If you are from near Chattanooga, find where Lake Winnepesaukah is on a city map.
   A. What part of the greater Chattanooga area is it near?

   _____

   B. About how far in miles is it from your school?

   _____

   C. How many kilometers is that? (multiply miles by 1.6 to get km)

   _____

2. If you came to Lake Winnepesaukah from outside this area, find where the park is located on a map of the state.
   A. What are some towns nearby?

   _____

   B. About how many miles is the park from your school?

   _____

   C. How many kilometers is that? (multiply miles by 1.6 to get km)

   _____

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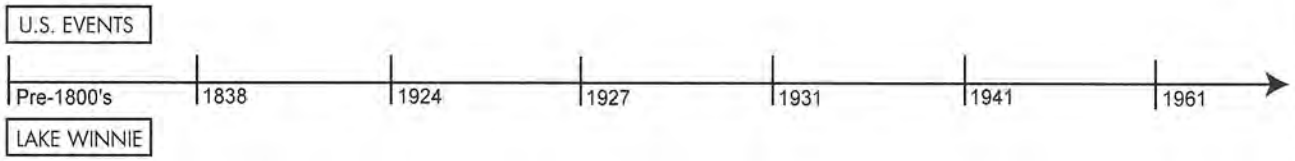
Follow Up Activities (for after your visit)

HISTORY - LAKE WINNEPESAUKAH TIME LINE

Create a parallel time line using the Lake Winnepesaukah Time line and the Important Events Time Line available on pages 15-25. Use the format below:



Use your time line to answer the following questions:

1. If you were a buffalo living long ago, what trail would you take from the coastal Georgia area to NW Georgia and Tennessee?
2. What Civil War battle took place near the Lake Winnie property?
3. Who were the founders of Lake Winnepesaukah?
4. What important trial was taking place during the year Lake Winnepesaukah opened to the public?
5. What happened at Lake Winnie during the World War II years?
6. What important sports event took place the year the pony track and Fly-O-Plane were added?
7. What was going on in the world the year the Cannon Ball was opened and what tragedy occurred?
8. What was the original attraction at Lake Winnie?
9. Was Lake Winnie in operation during the Great Depression?
10. When the first boat went down the Boat Chute, who was setting a new record in flying?

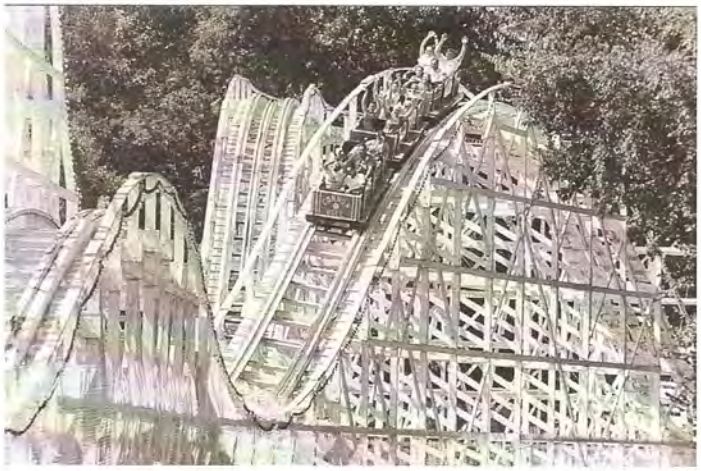
Make your own quiz for your fellow students based on the time line you create.

Follow Up Activities (for after your visit)

CAN YOU MAKE A MODEL OF THE CANNON BALL?

Each team or partners designs and constructs a roller coaster track for a marble. Experiment with different sizes and masses. A good and relatively cheap material for the track is the foam rubber insulation tubes used on hot water pipes, slit in half.

A 6' length from a building supply store will give you 12'. Consider giving 24' per team and encourage at least one hump, one loop and one gap. Using wire or tape attach the track to chairs, tables, or the wall. Get it going fast enough to take the loop but not fly off the track, which would be frowned upon in the world of roller coasters.



SUPPLY LIST:

Wire or tape to assemble the track

Sissors to cut insulation tubes in half

24' of insulation tube per team

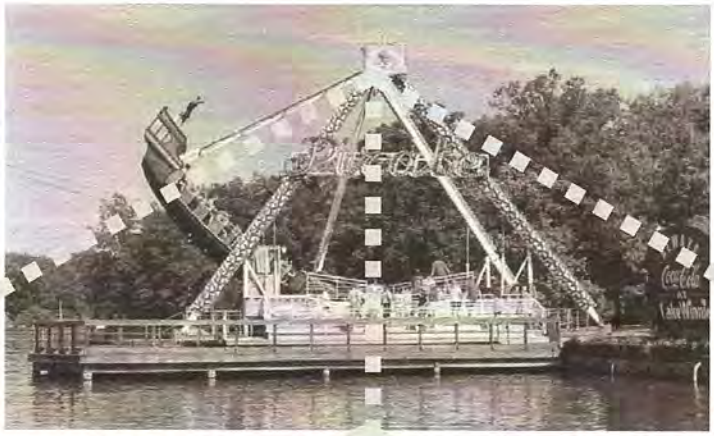
Various sizes of marbles

Follow Up Activities (for after your visit)

PENDULUMS (PIRATE SHIP)

Using the same length of string and pulling back the same distance (tape the string to a table and lay a meter stick on the floor), time how long it takes for 10 swings (up and back is one) with different amounts of washers or other weights (divide by 10 to find the period of each swing).

Remember to try it more than once and average the time (make a chart using the space below). While you're working with pendulums, feel free to experiment with the length of the string and distance pulled back, to see what affects the period.



Important Events (page 1 of 6)

Pre-1800's Georgia became the 4th state to ratify the U.S. Constitution. (1788) Eli Whitney invents the cotton gin at Mulberry Grove Plantation in Georgia, (1792).

Early 1800's Walker County, GA is created, (Dec. 18, 1833).

1838 Trail of Tears. Cherokees are expelled from Georgia. The Underground Railroad starts.

1853 Catoosa County is established, (December 5, 1853).

1863 September 19, 1863: The 2-day Battle of Chickamauga began as Union Troops under George Thomas clashed with Confederates under Nathan Bedford Forrest.

1800's – 1890's Coca-Cola went on sale for the first time at a drugstore in Atlanta, (March 29, 1886).

1924 Jimmy Carter was born in Plains, GA, (Oct.1, 1924). France hosts the very first Winter Olympics. Insecticides are used for the first time on crops in the U.S.

1925 A teacher, John Scopes is put on trial for teaching evolution in Dayton, Tennessee during the "Scopes Monkey Trial".

1926 Germany is admitted to the League of Nations.

1927 Charles Lindbergh becomes the first man to fly solo across the Atlantic Ocean. The first pop-up toaster is invented in the U.S. Babe Ruth hits 60 home runs and breaks the season record.

Late 1920's Walt Disney creates his first Mickey Mouse cartoon, (1928). The U.S. stock market crashed creating a worldwide economic crisis and the beginning of the Great Depression, (October 1929). Martin Luther King, Jr. is born in Atlanta, GA, (Jan. 15, 1929).

1930 The first supermarket opens in the U.S. The "Smoot-Hawley" high tariff is approved.

1931 The Empire State building opens in New York City.

1932 Al Capone was sent to prison for income tax evasion. Amelia Earhart is the first woman to fly solo across the Atlantic Ocean. Charles Lindbergh's infant son is kidnapped and murdered.

1933 Franklin D. Roosevelt is inaugurated as President. The Tennessee Valley Authority is created to revitalize and provide jobs to the Tennessee Valley. The 21st Amendment is added to the Constitution, repealing Prohibition.

1934 Farm families leave the dust bowl-stricken Great Plains states and move west to California. The Masters Golf Tournament for professionals begins at Augusta National Golf Club.

Important Events (page 2 of 6)

1935 The Works Progress Administration, (WPA) is set up to create jobs and improve America. To keep America out of the war in Europe, congress passes the Neutrality Act. Congress passes the Social Security Act. A Wealth tax is passed penalizing wealthy Americans with higher taxes in an attempt to help with the depression.

1936 Margaret Mitchell writes *Gone With the Wind* which becomes an American classic. Jesse Owens wins 4 gold medals at the Olympics in Berlin, Germany.

1937 Japan invades China.

1938 Orson Welles' radio broadcast of H.G. Wells' *War of the Worlds*, causes a national panic. The Volkswagon beetle begins production in a factory in Nazi Germany.

1939 The motion picture "Gone With the Wind" premieres in Atlanta. The movie, "The Wizard of Oz" premieres as one of the first color films. John Steinbeck publishes *The Grapes of Wrath*. Georgia finally ratifies the Bill of Rights, 150 years after the birth of the federal government. Britain and France declare war on Germany beginning WWII.

1940 The President asks Congress to approve the production of 50,000 planes per year.

1941 Japan launches a surprise attack on Pearl Harbor, Hawaii. The U.S. officially declares war on Japan, thus entering WWII.

1942 The Revenue Act of 1942 established an income tax for the first time on working Americans. Japanese Americans are relocated to internment camps due to wartime suspicions of spies. The Eighth Air Force is activated in Savannah, GA. Popular movies such as "Casablanca" glorify the war effort and inspire troops.

1943 Research your own popular culture event here.

1944 Allied forces invade Europe at Normandy, France referred to as D-Day, (June 6, 1944) . The Germans launch a failed counterattack named the "Battle of the Bulge" leaving them vulnerable against further allied attacks, (Dec. 1944). Hitler commits suicide in Berlin and Germany surrenders to the Allies.

1945 President Roosevelt dies in Warm Springs, GA at the age of 63 and is succeeded by Vice President Harry Truman (April 12, 1945). The United Nations is established, (June 26, 1945). The world's first atomic bomb is detonated in the desert in New Mexico, (July 16, 1945). The U.S. drops the first atomic bomb on Hiroshima, Japan, (August 6, 1945). The 2nd atomic bomb is dropped on Nagasaki, Japan, (August 9, 1945). Japan surrenders to the U.S. ending WWII, (Sept. 2, 1945).

1946 Research your own historical event here.

1947 Jackie Robinson becomes the first African-American to play baseball in the Major Leagues.

Important Events (page 3 of 6)

1948 Scientists invent the transistor, a pivotal step in miniaturizing electronics and other future technological devices. George Orwell's, *1984*, is published.

1949 North Atlantic Treaty Organization (NATO) is established.

1950 President Truman authorizes the production of the H-bomb. A computer is used for the first time to tally a census. Senator Joseph McCarthy begins his anti-communist charges and campaign. The Korean War begins, (June 25, 1950). The color television is introduced in the U.S.

1951 The U.S. presidency is restricted to 8 years. The U.S. occupation of Japan and its islands ends after 6 years.

1952 The U.S. detonates the first thermo-nuclear bomb in a test on a Pacific Island. Jackie Robinson became the highest paid player in Brooklyn Dodger history.

1953 An American company develops the first microwave oven. Over half of all families in the U.S. own televisions. American communists Julius and Ethel Rosenburg are executed for traitorous espionage.

1954 The McCarthy Hearings are televised nationally leading to the downfall of Senator Joseph McCarthy. Racial segregation in schools is declared unconstitutional by the Supreme Court.

1955 The first McDonald's restaurant is opened by Ray Kroc. Rosa Parks refuses to give up her seat to a white man on a bus in Montgomery, AL. The film, "Rebel Without A Cause" opens.

1956 The first transatlantic telephone cable begins operation.

1957 The great space race between the U.S. and Soviets begins with the successful launch of the Soviet satellite Sputnik. President Eisenhower sends soldiers to integrate a Little Rock, AR high school.

1958 The first U.S. satellite, Explorer1, goes into orbit.

1959 Cuba becomes a communist state after the takeover by Fidel Castro.

1960 The first laser device is invented by U.S. scientists. The Soviet Union shoots down a U-2 spy plane. The Kennedy/Nixon presidential debates appear on TV.

1961 Russian, Yuri Gagarin, becomes the first human in space, escalating the space race. An attempted invasion of Cuba, called "The Bay of Pigs", fails.

Important Events (page 4 of 6)

1962 U.S. astronaut John Glenn orbits the earth in a spacecraft. The Cuban Missile Crisis occurs, (October, 1963).

1963 A civil rights march on Washington, D.C. takes place. President John F. Kennedy is assassinated in Dallas, TX, (Nov. 22, 1963). Vice President Lyndon Johnson succeeds Kennedy as president. The U.S. sends troops to Vietnam.

1964 The Beatles rock band gains international fame. Congress ratifies the Civil Rights Act.

1965 President Johnson increases the number of U.S. troops in Vietnam. Malcolm X is assassinated in New York by a rival African American muslim faction. Race riots occur in Los Angeles.

1966 A court ruling establishes the Miranda Rights law. The Vietnam War continues.

1967 Three Apollo astronauts die in a fire on the launch pad.

1968 Robert Kennedy and Martin Luther King, Jr. are assassinated. Riots break out at the Democratic Convention in Chicago. Richard Nixon is elected President.

1969 The U.S. is the first nation to land astronauts on the moon. Neil Armstrong is the first man to set foot on the moon.

1970 The U.S. begins to withdraw troops from Vietnam. Rock stars Janis Joplin and Jimi Hendrix die of drug overdoses.

1971 The 26th Amendment lowering the voting age to 18 is ratified.

1972 A break-in at the Democratic Headquarters in the Watergate Hotel sets off the Watergate scandal. The U.S. begins full-scale bombing of North Vietnam after peace negotiations fail.

1973 The Senate Watergate hearings begin. Vice President Spiro Agnew resigns. The Vietnam Peace pacts were signed in Paris. The end of the military draft was announced.
An energy crisis occurs. The last of the U.S. forces leave Vietnam. Gerald Ford becomes the first Vice President appointed under the 25th Amendment.

1974 President Nixon resigns. Gerald Ford is sworn in as President the same day. Hank Aaron tied Babe Ruth's home-run record by hitting his 714th home run.

1975 The Soviet Sojuz and U.S. Apollo spacecraft link up in space.

1976 The United States celebrates its 200th anniversary. Jimmy Carter becomes 39th President.

Important Events (page 5 of 6)

1977 The biggest selling movie of all time, "StarWars", is released.

1978 Iranian terrorists seize the American Embassy in Tehran, taking 63 American hostages.

1979 Research your own popular culture event here.

1980 The U.S. Olympic Committee votes to boycott the Moscow Summer Olympics in retaliation for the Soviet invasion of Afghanistan. Mt. St. Helens erupts in a violent blast. John Lennon is shot and killed in New York. Ronald Reagan is elected 40th President of the U.S.

The PC, Personal Computer, is launched by IBM. President Ronald Reagan announces the release of 52 Americans held hostage in Iran for 444 days. The space shuttle Columbia is sent into space and returns successfully. The Reagan Tax Cuts are passed, resulting in increased tax revenues and 20 years of economic prosperity for American citizens.

1981 Federal air traffic controllers are fired after defying a back-to-work order by President Reagan.

1982 Research your own scientific event here.

1983 The compact disc, "CD" is launched. Sally Ride becomes the first American woman to travel in space on the Space Shuttle. U.S. troops invade the Caribbean island of Grenada to free American medical students held by communist militants.

1984 The Apple McIntosh computer with a mouse is launched. Reagan defeats Mondale in a tremendous re-election landslide winning 49 of 50 states.

1985 Research your own event here.

1986 Martin Luther King, Jr. Day is observed for the first time, (Jan. 20, 1986). The space shuttle Challenger explodes shortly after lift-off killing 6 astronauts and a teacher named Christa McAuliffe. The U.S. bombs Libya in retaliation for Libyan leader Khaddafi's involvement in terrorist attacks. The Iran-Contra scandal erupts, involving the sale of arms to Iran to fund the Contra, anti-communist rebels, in Nicaragua.

1987 The world stock market crashes in October on "Black Monday". President Reagan and Soviet leader Gorbachev sign an arms treaty.

1988 George H.W. Bush is elected 41st President of the U.S.

1989 The Berlin Wall falls uniting communist East and capitalist West Germany. This was a great day for the world and preceded the end of the Soviet Union.

1990 Iraq invades Kuwait.

Important Events (page 6 of 6)

1991
President Bush launches Operation Desert Storm to free Kuwait. The war lasts 42 days with the defeat and surrender of Iraqi forces. The Soviet Union collapses under the failed system of communism and ceases to exist.

1992 Russia and the U.S. sign a treaty officially ending the Cold War. President Bill Clinton is elected 42nd President of the U.S. The World Wide Web begins for home and office use.

1993 The World Trade Center in New York is bombed for the first time. The 51-day federal siege at a religious complex in Waco, TX ends in the death of dozens of citizens including women and children.

1994 U.S. troops invade Haiti.

1995 A car bomb destroys the Murrah Federal building in Oklahoma City, OK. The Atlanta Braves win the World Series.

1996 President Clinton defeats Bob Dole to be re-elected as President. The summer Olympics take place in Atlanta, GA.

1997 Research your own event here.

1998 President Clinton is charged with lying to a federal grand jury.

1999 Research your own historical event here.

2000 George W. Bush is elected 43rd President of the U.S. in a controversial victory.

2001 The World Trade Center and Pentagon are attacked by Islamic terrorists using civilian airliners in suicide attacks, (Sept. 11, 2001).

2002 Research your own popular culture event here.

2003 The Iraq War.

2004
George W. Bush is re-elected beating Sen. John Kerry of MA. A devastating and cataclysmic Indian Ocean tsunami occurs in December, following a 9.5 earthquake under the ocean near Indonesia. Eleven countries are effected and over 150,000 people are killed.

Lake Winnie Time Line (page 1 of 5)

PRE-1800'S The swampy spring-fed property lies along the Nick-A-Jack Trace, a prehistoric pathway leading from the Augusta, Georgia area to the Nashville, Tennessee area. The well-worn pathway was used by migrating wildlife, Native Americans and early settlers.

EARLY 1800'S White settlers begin to move into the area occupied by Native Americans.

1838 Native Americans still occupy the area taking advantage of the fresh water springs and abundant wildlife.

SEPTEMBER 19, 1863 Union General Steadman's 4,500 man reserve force of Illinois and Michigan units encamped here. The left flank of General Rosecrans line, Steadman's forces hear the first volleys of the Battle of Chickamauga. The water is contended for between Gen. Daniel McCook and Gen. Scott during the 19th and 20th, 1863. Confederate forces push the Union back to Chattanooga until the Battle of Missionary Ridge in November 1863. The land then became the camp of Ex-President Jefferson Davis and Gen. Bragg on the night of the battle. It later became the encampment of the 2nd Div. of the Army of the Cumberland from December 25th, 1863, to May 3rd, 1864, Maj. Gen. George Thomas, commanding.

1880's - 1890's The Green Family obtains the low swampy property known as McAfee Springs, builds a dam and operates a grist mill. The lake has 35 large springs that supply 35,000 gallons of pure spring water per hour. The lake becomes known as Green's Spring Lake.

EARLY 1900's The lake and surrounding property is owned by a private fishing club, who later sold it to the Dixon's.

1924 Carl and Minette Dixon purchase the property known as Green's Spring Lake. Mr. Dixon dredges out the existing lake and cleans out the springs and renames the lake, "Lake Winnepesaukah", after a Native American word for "bountiful waters" or "beautiful lake of the highlands".

1925 Lake Winnepesaukah opened on Saturday, May 30, 1925 with approximately 1,000 persons visiting the new amusement center. The next day, Sunday, June 1, 1925, a Chattanooga newspaper report estimated that 5,000 persons were in attendance at Chattanooga's new playground.

1926 Lake Winnepesaukah debuted a new concrete swimming pool, one of the largest and finest in the South. The pool, 105 feet by 210 feet, had six diving boards and was filled with fresh, filtered water from the lake. Electric lights were installed and canoes were available for rent. A large baseball field and tennis courts were under construction.

1927 The Boat Chute, the park's first ride opens. The Mid-South Swim Meets were held for the first time at Lake Winnepesaukah. Fishing permits were issued for the bream and bass flourishing in the lake.

Late 1920's A kiddie plane ride and three horseshoe pits were added to the park's activities, along with the completed baseball field.

Lake Winnie Time Line (page 2 of 5)

1930 What is now the oldest Miniature Golf course was installed in the park. (The original Tom Thumb course at Fairyland Club on Lookout Mountain no longer exists). A new bathhouse and a 40 foot by 50 foot sand beach readied the park for the Southeastern A.A.U. Swimming Meet.

1931 A large skating rink called "The Casino" was added to the park, allowing for dancing, skating, Skee Ball, and a shooting gallery. One of the largest driving ranges in the area opened adjacent to the lake, complete with floodlights for evening golfers.

1933 Carl O. Dixon died an untimely death on April 28. Lake Winnepesaukah hosted air shows, swim meets, aquatic shows, boxing matches, and stunt exhibitions for the growing number of visitors to the park.

1934 A new bathhouse was opened and barbeque pits were installed in the picnic grove. A 322-pound man billed as the "human cork" bobbed in the lake for 73 hours straight during a July 4 celebration.

1935 Kiddie Day is initiated, allowing children under 12 to enjoy all the attractions for only 5 cents. Football games were held during the fall, and ice skating was available in the winter months. The first motorcycle races in the area were held at the park.

1936 The new public address system announced the appearance of airplane stunts and broadcast radio programs throughout the park. Free swimming lessons were held in the pool. Fireworks were held for the first time to celebrate Independence Day.

1937 A bridle path was opened for horseback riding.

1938 Electric motor boats were added for use on the lake. For one week, Senora Carver, a blind woman, dove into a tank of water from a 42-foot tower astride her horse, Red Lips.

1939 The lake was stocked with rainbow trout and small & large mouth bass. The Miss Chattanooga Pageant was held at the park.

1940 The Ferris Wheel was introduced along with new refreshment stands and a dining room.

1941 New amusements included a shooting gallery, penny arcade, bowling alleys, and an Auto Skooter ride. Theatrical shows were presented weekly at the new amphitheater adjacent to the lake.

1942 A chair swing, a kiddie auto ride and the Tilt-A-Whirl were among the new rides at the park. The Lake Winnepesaukah staff musician played request programs several times daily. The park hosted a war show, with all receipts going to the Army-Navy relief fund. The Women's Army Corps (WACS) and soldiers frequently marched through the woods from Fort Oglethorpe for visits to the park. Guests at Lake Winnepesaukah could hear them marching and singing for quite a distance. September 24, 1942, fire destroys the skating rink and damages the nearby concessions and the Ferris Wheel.

Lake Winnie Time Line (page 3 of 5)

1943 A large portable skating rink replaces the one lost by fire.

1944 Bus service to Lake Winnepesaukah was provided free of charge to help conserve gasoline for the war effort.

1945 Rubber rafts were added to the vessels on the lake. Discounts to the park were given to all servicemen.

1946 Veterans could register for free swim tickets and thrill rides. Midget auto races were held on the new 1/4 mile speedway every Sunday afternoon.

1947 A new pony track opened, along with the new Fly-O-Plane ride: the closest one could get to actually flying.

1948 The most recent additions included a new streamlined Merry-Go-Rouond.

1950 The Little Royal Palm Train, a miniature, diesel powered train, offered a mile ride around the park. To celebrate the 25th Anniversary, a huge cake was served to guests.

1951 A miniature roller coaster was added to the delight of children, along with more Skee Ball alleys.

1952 Three new rides graced the park: The Ferris Wheel, Kiddie Boats and the Kiddie Jeep Ride.

1953 Free country music shows were a feature of the 29th season, held on a floating stage. Rowboats were added to the lake's activities and a new Kiddie Whirlo ride was presented.

1955 The park now had 10 major rides, 4 kiddie rides, miniature golf and snack bars, along with the swimming pool and activities on the lake and grounds.

1956 The Scrambler and Kiddie Sky Fighter were added to the list of rides. The Showboat, a replica of a Mississippi River Steamer, took patrons around the 9 acre lake.

1958 The Cake House gave children an extra special place for birthday parties: a replica of a real birthday cake with pint size table and benches. Founder Mrs. Minette Dixon died on September 6, 1958, following a long illness.

1959 The Flying Coaster and Hand Cars were put into operation, along with a new Helicopter ride.

1960 The season opened with a total of 16 major rides and 6 kiddie rides. The Mad Mouse, Roadway and Tower Slide were new additions to the park.

1961 New rides for the season included the Paratrooper and Kiddie Jolly Caterpillar.

Lake Winnie Time Line (page 4 of 5)

1963 New motor boats and Kiddie Circus carts made a total of 25 rides at the park. Mr. Jerry Daniels, a Lake Winnie lifeguard was selected as Mr. America.

1964 A replica of the famous Civil War train "The General", "The 1864 Iron Horse Train", debuted in a new area called Pioneerland. Guests thrilled to scenes of the old west as the train puffed its way through train robberies and wild west action. The swimming pool closed to the public.

1965 The Astro-Lift, a sky ride over the lake, offered a bird's eye view of Lake Winnepesaukah. U-Drive It Electric Boats were now available in the former swimming pool.

1966 The Antique Car ride opened, with colorful reproductions of the old-time touring cars.

1967 After six years of planning, the Cannon Ball Roller Coaster was ready for passengers. From the top of the one-half mile long coaster, riders are propelled over a 70 ft. main incline and nine other "hills" on this breath-taking ride. The ride takes approximately one minute and thirty-two seconds and reaches speeds up to 50 miles an hour. The roller coaster was designed and engineered especially for Lake Winnepesaukah by the Philadelphia Toboggan Company and at the time was the fastest and largest amusement ride in the tri-state area.

1968 The season opened with four new rides: the Trabant, the Spider, Kiddie Sports Cars, and the Antique Carrousel. The Carrousel is one of the oldest and largest in the country, with 68 hand-carved and hand-painted steeds. Contructed by Swiss and Italian artists in 1916, the Carrousel was purchased from Lakewood Park in Atlanta, Georgia.

1969 The Castle, a new thrill ride, offered guests a sensational ride through a darkened castle, full of fantastic special effects.

1971 An Italian Bumper Car Ride with a brilliantly illuminated pavilion was introduced. Jim Ed Brown, Crystal Gayle and The Leamon Sisters were among the performers at the park.

MID-1970's Additional attractions included a Mistic Mansion walk-through, and the "Old 99" children's train ride. Grand Ole Opry stars continued performances on the Lake Winnepesaukah stage.

1977-1997 Operations of Lake Winnepesaukah were leased to Fun Town, Inc., while the family maintained ownership of the park and property. During this timeframe the Alpine Way Sky Ride and the Pipeline Plunge were installed.

Time Line

Lake Winnie Time Line (page 5 of 5)

1998 The founding family ended the lease with Fun Town, Inc. and resumed management and operation of the park. A Parachute Ride was introduced on Kiddie Hill.

1999 The park opened with three new rides: The Kiddie Swings, the Balloon Ride and Orbiter. Water Wars was added as a new game.

2000 For the 75th Anniversary of the park, the Frog Hopper and Paratrooper were introduced.

2001 The Fly-O-Plane and Wild Lightnin' opened, giving the park 33 rides.

2003 The Conestoga ride debuted, along with the Hat Shop, a new Ring Toss game, and a new entrance.

2004 Scooby Doo, Sponge Bob and Spider Man visit the park.

2005 In celebration of Lake Winnepesaukah's 80th birthday, four new rides are added: The Bumble Bees, The Whale, The Wave Swinger, and a new and larger Ferris Wheel. In addition, a new food court area with upper deck seating is unveiled.

2006 Lake Winnepesaukah takes thrills to spectacular new heights with addition of the OH-ZONE! , a 14-story freefall where guests plummet to the ground at a breathtaking 4.6G's!

2007 The park celebrated the 80th anniversary of the Boat Chute and the 40th anniversary of the Cannon Ball Roller Coaster.

2008 Runaround Playground opened.

2009 Chill Down Kid Town, an interactive water play area, opened.

2011 The new Wacky Factory attraction opened.

2012 Fireball Ride opened.

Internet Search for Amusement Park Physics

Go to: http://www.learner.org/exhibits/parkphysics/

1. Although the rides are typically very safe, the designers of amusement park rides use what to simulate danger? _____

Click on "Roller Coaster"

1. What drives the roller coaster when it has no engine but can be traveling at 60 mph?

   _____
2. What do each of the 3 different types of wheels on the roller coaster do?

   _____

   _____

   _____
3. What are the different advantages of wooden verse steel roller coasters? _____

   _____

Click on "More about their History"

1. When and where was the first true roller coaster made in America?

   _____
2. When and where was the first tubular steel coaster made or ridden, which allowed for loops, corkscrew track, and stability?

   _____
3. When was the first successful up-side-down coaster introduced?_____

Click on "Design a Roller Coaster"

When you are successful (good safety and fun ratings), list the various components:

1. Height of first hill: _____
2. Shape of the first hill: _____
3. The exit path: _____
4. Height of the second hill: _____
5. The loop: _____

Click on "Carousel"

1. If the carousel could gain enough speed, what would happen to the riders? _____

   _____
2. Which horses have a faster linear speed?

   _____

Click on "Bumper Cars"

1. Which physics law helps to explain why you feel a jolt when you collide with another bumper car?

   _____
2. How does the large rubber bumper help protect the riders from danger? _____

   _____
3. What factors affect how much of a jolt each driver feels when 2 cars collide? _____

   _____

   _____

Click on "Predict the Outcome of Bumper Car Collisions"

Which is the right outcome to select in each of the collisions?

Collision 1: _____
Collision 2: _____
Collision 3: _____

Click on "Pendulum" on the bottom diagram

1. Feelings of weightlessness on pendulum rides are not due to decreased gravity, but what?

   _____
2. The high g-forces often experienced are not due to increasing forces of gravitation, but what?

   _____

Click on "Motion Sickness"

1. Motion sickness is caused when the information from your eyes does not jive with what?

   _____

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Internet Search for Amusement Park Physics

Go to: http://www.wcsscience.com/amusement/park.html

Click on "Centripetal Force"

1. Amusement park rides that suspend your body while spinning in a circle rely on what to keep you from falling? _____
2. There is no such thing as centrifugal force (that's a body's desire to move in a straight line), but the inward force that holds you in a circle is called what? _____

Click on "Buoyancy"

3. Even though the paddle boat and passengers weighs over a thousand pounds, how can it float on water? _____

Click on "Evaporation"

4. Why would you shiver when the outside air temperature is over 90°f? _____

Click on "Friction"

5. The reason why many slides are dampened with water is that dry plastic has a high what? _____

Click on "Reflection"

6. Assuming the wall is flat, the Law of Reflection says that the angle of reflection (the direction the ball bounces off) is equal to what? _____

Go to: http://www.howstuffworks.com/roller-coaster.html

1. Roller coasters are driven almost entirely by what 3 basic forces that are all used to make a great ride? _____

Click "Next Page" at the bottom and click "Play" on the simulation "How Roller Coasters Work"

2. At which spots (letters) is the potential energy higher than the kinetic energy? _____
3. At which letters does the car have greater kinetic energy than potential energy? _____

Click "Next Page" again to get to "Staying on Track".

4. What keeps the cars on the track? _____

Use the table of contents if you wish to skip ahead to "Lighter than Air".

5. Why do you feel like you are lifting out of your seat sometimes? _____

Finally, go to "Feeling Loopy".

6. Why do you feel the "gravity" pushing you into your seat while you are going upside down on a loop? _____