Presents

ELEMENTS OF FUN!!!

Educational Field Trip Lessons
for the
Elementary Grades

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INTRODUCTION

Dear Teacher,

In the production of this teacher's manual, Canobie Lake Park continues its commitment to family entertainment beyond a delightful day at New England's finest amusement park.

Still, requests for additional learning guides beyond those previously produced continued. It is to this need that Canobie Lake Park Corporation proudly responds with "ELEMENTS OF FUN!" Your comments are welcomed, since this program's raison d'être is the educational enrichment of your students. Understanding teachers' need for a formal focus, and using the same to create examples, activities, extensions, problems and enrichment samples, educators from around New England have listed in general terms both the desired learnings and minimum essentials for this curriculum as an appendix to this document. This is open to review and change.

An attempt to organize this material from easiest to hardest has been made. In general, we've been eclectic! Proper credit for material used is listed in the Appendix. Have fun with this!

Sincerely,

CANOBIE LAKE PARK

Brief History of the Roller Coaster

The first roller coaster built in the United States was the Switchback Railway, which opened in 1884 in Coney Island, New York. Many of the early coaster designs were in a figure eight layout. As knowledge of physics advanced through the decades, so did roller coaster designs.

The first of the modern-day steel roller coasters to successfully turn riders upside-down opened in 1975 at Knott's Berry Farm, California. Since then, roller coaster designers have become much more daring. You can now ride a coaster in a standing position or by riding in a seat that hangs from an overhead track. Today, coasters can tower over three hundred feet high, run over a mile long, and reach speeds of nearly 90 mph!

Canobie Lake Park has over 85 rides, games and attractions including 16 rides specifically for younger children who are under 48 inches. And let's not forget the multitudes of rides that everyone can enjoy. Like the Canobie Express an authentic steam train, the Antique Carousel with its hand carved horses and other animals, the Mine of Lost Souls dark ride.

ALPHABETIZE THE FOLLOWING RIDES

1. Carousel
2. Xtreme Frisbee
3. Dodgem
4. Zero Gravity
5. Crystal Orbiter
6. Jr. Sports Car
8. Yankee Cannonball
9. Kiddieland
10. Sky Ride
11. Castaway Island
12. Antique Cars
13. Missile
14. Vertigo Theatre
15. Pyscho-drome
16. Helicopters
17. Caterpillar
18. Mini-Skooter
19. Canobie Queen
21. Canobie Express
22. Autobaun
23. Rowdy Roosters
24. Tilt-A-Whirl
25. Over the Rainbow
26. Corkscrew
27. Canobie "500"
28. Sea/Land Rescue
29 Pirate Ship
30. Mine of Lost Souls
31. Kiddie Canoes
32. Log Flume
34. Dragon Coaster
35. Mini-Dino's
36. Timber Splash
37 Boston Harbor Patrol
38. Flower Power
39. Boston Tea Party
40. daVinci's Dream
39. Starblaster
40. Jungle Bounce
41. Alpine Swing
42. Wipeout
43. Skater

The following activities are designed to strengthen reading comprehension, vocabulary, and word recognition skills.

IDENTIFY THE FOLLOWING WORDS IN THE PUZZLES

Patrons at Canobie Lake Park can buy many different drinks. Circle the following words in this puzzle: MILK, WATER, COCOA, TEA, COLA, SOUP, MALT, BROTH, COFFEE, MILK SHAKE, ORANGE JUICE, BOUILLON, GRAPE JUICE

O R A N G E J U I C E B
D A Q K P J C B R O T H
M M A L T V W O H C I C
R N U B O U I L L O N O
S E L T S G C O L A T F
O M I L K S H A K E E F
U W A T E R M I L K A E
P F G R A P E J U I C E

Check off each word as you find it. Circle in red the most unusual bird at Canobie Lake Park!!!

Robin Woodpecker Owl Eagle Sea Gull
Pigeon Ostrich Penguin Peacock Cardinal
Bluebird Flamingo

W O O D P E C K E R
C W F S E A G U L L
A L L E N O S T O F
R O E A G L E R S L
I N G O U W O O T A
C A R D I N A L R M
R O B I N P I G I I
B P I G E O N O C N
P E A C O C K A H G
L B L U E B I R D O

LEARN YOUR STATE BIRD, FLOWER, AND TREE

On one of the walks at Canobie you'll find a sign that lists the State flower and tree for New Hampshire. Find it and you'll know the answer. It is less widely known that many states have also designated other natural resources to honor. Some states have state animals (some list both a wild and domestic animal), insects, fish, minerals, gems, grass, fruit, nuts, mushrooms, and even soil and fossils! A complete listing of the state birds, flowers and trees are listed in the Appendix. Why do you suppose your state has chosen those particular plants and animals? Would you choose any of them differently?

ADMIRE THE LAKE AT CANOBIE

Canobie Lake is at its highest in the spring, full of water from melting snow and ice. In March and April near your homes you can watch rivers rush with abandon, even thundering with force, too. Do you see how water power might be harnessed? Many mills, of course, have been built along rivers throughout the world to take advantage of water power. Both the Log Flume and the Timber Splash Water Coasters have water wheels as part of their operation. Watch them operate and visualize a mill of yesteryear. Presently, some rivers are dammed to control their flow and are used to generate hydroelectricity.

FIND CANOBIE'S DAILY RAINBOW

Almost every day you can find a rainbow at Canobie Lake Park - unfortunately minus the pot of gold! First go to the original stone fountain built in 1902 behind the Sky Ride. The sun has to be shining and you should position yourself with your back to the sun. Look through a spray of water coming from the fountain's pool. Early in the day or late afternoon is best for this experiment because the sun's rays are slanting lower in the sky. Can you see all the colors? List them. (Hint: There are 7.) If you are too busy having fun on the rides, you can make a rainbow at home after your outing.

MAKE A RAINBOW INDOORS

Fill a glass with water (make sure it is filled to the top) and set it on a window sill in bright sunlight. It should project over the inside ledge just a bit. Put a white sheet of paper on the floor beneath the window, and a rainbow will magically appear on the paper. A prism in a sunny window will do the same thing.

READING MAPS

Map reading is an important skill. Continuing computer advancements have made distant places close. Media news coverage relies on a much more global reporting. Moreover, there are thousands and thousands of highway miles that are our main source of getting from one place to another. Proficiency in map skills will also help children to discipline themselves into a pattern of organized thinking. One of the problems associated with teaching map skills to young children is the assumption that they can master directions. Using the Canobie Lake Park map in this booklet provides the needed drill.

GETTING AROUND CANOBIE LAKE PARK

We use the words from and of to compare the distance between two places. For example, the Kiddieland Stage is west of the Roller Coaster. The Roller Coaster is the point from which the Kiddieland Stage is measured. The Log Flume ride is south of the Dodgem.

Fill in the directions for each of the sentences. Remember when you see the word of or the word from, the ride that follows will be the ride (the starting point) from which you will measure the direction you are going.

1. The Carousel is _____ of the Roundup.

2. The Jr. Sports Cars are _____ of the Turkish Twist.
3. The Mini-Dino's are _____of the Dragon Coaster.
4. The Corkscrew is _____of the Canobie Mall.
5. The Rowdy Roosters are _____ from the Wipeout.
6. The Vertigo Theatre is _____ from the Dancehall Theatre.

7. The Missile is _____ from the Tilt-A-Whirl.

8. The Skater is _____of the Pirate Ship.
9. The Crystal Orbiter is _____ of the Corkscrew.
10. The Canobie Express is _____ of the Dance Hall Theatre and _____ of the Arcade.

11. The Mine of Lost Souls is _____ from Flower Power but _____ of the main gate.

12. In which direction would you walk from the gate to Pickaxe Pub? _____.
13. Which way would you go from Giant Sky Wheel to Psycho-drome? _____
14. To get from the Caterpillar to the Front Entrance , you would first go _____and then _____.
15. If you started at the Mini-Skooter and went to Vertigo Theatre, you would go _____; then to the Popcorn Stand, go_____; then to the Carousel, go _____; then to the Turkish Twist, go _____; then to the Pirate Ship, go _____; the to the Canobie Queen, go

_____; then to the Trellis, go _____.

DIRECTIONS ON DIRECTIONS

A filler activity as you wait for the busses!!!!!! Distribute a grid of seven (7) blocks by nine (9) blocks.

1. Draw a star in the center box.
2. From that center, move 3 squares to the west. Color that box red.
3. Move north 2 squares and color that box blue.
4. Go to the east 4 boxes & color that box brown.
5. Move 5 boxes south & place a green circle in that box.
6. Move 1 square to the southeast and place a red line through the box from the northwest corner to the southeast corner.
7. Go 4 more boxes west & color the box purple.
8. Go north 3 boxes and make a red line from the southwest corner of the box to the northeast corner.
9. Go 3 boxes north, then 2 boxes east & color the box black.
10. Move 2 boxes northwest & fill the box with a brown X.
11. Move 4 boxes east & 3 boxes south & draw a blue circle in that box.
12. Go south 3 boxes & northwest one box. Place a yellow star in that box.
13. Move southwest 2 boxes and color the box green.
14. Move 6 boxes north & place a orange T in that box.
15. Go 2 boxes southeast, then 5 boxes south & fill the block with a red B.
16. Move 2 boxes northwest, then 1 box northeast, and 1 box north. Place a smiley face in that box.
17. Move south 6 boxes, then 1 box west, then 5 boxes east, turn north 7 blocks, move south 3 boxes. Place a green M in the block.
18. Move north 3 boxes, turn south 7 blocks, then west 5 boxes, then 1 box east, move north 6 boxes. Where are you? _____

MAKING DEDUCTIONS

Using Canobie Lake Park's rides and watching our patrons as they enjoy the day creates many opportunities for critical thinking and skills.

1. Bob is tall. Jim is taller than Bob. Lee is taller than Jim. Who is the tallest?
2. Adria was happy. Mia was happier than Adria. Anthony was happier than Mia. Who was the happiest?
3. Cotton Candy is light. Popcorn is heavier than Cotton Candy. A Candy Apple weights more than Popcorn. What weighs the most?
4. Mark shot many baskets at the Keg Shot game near the Timber Splash Water Coaster. Ted shot more baskets than Mark. Ed shot more than Ted. Who shot the least number of baskets?
5. The Crazy Cups go fast. The Caterpillar goes faster than the Crazy Cups. The Wipeout goes faster than the Caterpillar. What goes the slowest?
6. A balloon floated high. The Giant Sky Wheel went higher than the balloon. A plane went higher than the Giant Sky Wheel. What was the highest?
7. A kitten was small. The chipmunk was smaller than the kitten. The bird was smaller than the chipmunk. Who was the largest?

Many birds and butterflies fill the air at Canobie Lake Park. The following story tells about cocoons. Answer the questions. Some patrons at Canobie Lake Park like to ride the Caterpillar ride near the Riverboat Circle. However, there are other caterpillars at the Park that other people dislike. They look like fuzzy worms. They have many legs and creep and crawl on trees and leaves. But a caterpillar is really the beginning of something else. It eats leaves for many days. After it is very big it spins a cocoon. It stays inside for a few months. When the cocoon opens something else is inside. It is very beautiful. It flies away.

1. Why does the caterpillar eat leaves for many days?
2. What happens while the caterpillar is in the cocoon?
3. When does the cocoon open?
4. What comes out of the cocoon?

Butterflies have many different colors and designs. These colors and designs help them. When some butterflies are resting they look like leaves. Animals cannot see them. Other butterflies smell funny. Predators don't like the smell.

1. How do the different colors and designs help protect the butterfly?
2. What do they need protection from?
3. Why do some butterflies look like leaves?
4. What is a predator?

THE GIANT SKY WHEEL

This is quite a calm ride unless you have acrophobia! The ride has 20 cars on a 22 meter diameter wheel. A maximum of 4 adults per car are allowed for a total capacity of 7 tons. It is a smaller design of the ride made famous by the 1893 World Exposition in Chicago. When promoters of the Chicago's fair were searching for an engineering marvel to rival the 1889 Paris World's Fair's Eiffel Tower, George Ferris, a civil engineer and bridge builder proposed a 264-foot-tall pleasure wheel. Towering above the midway, the wheel had 36 gondolas, each 24 feet long, and carried up to 2,160 passengers on a ride of two complete revolutions. Each revolution lasted 20 minutes. George Ferris is the only amusement ride designer whose ride bears his name.

At the close of this season, Canobie Lake Park personnel will count the number of lights on the Giant Sky Wheel. However, we know that the Rowdy Roosters ride has 983 lights. Using the Rowdy Roosters as a guide, it is estimated that the Giant Sky Wheel which is lighted front and back, up and down and all around has 8,818 lights.

A light bulb changes electricity into light. Electricity passes through the very thin wire, called a filament, inside the bulb. As electricity flows through the filament, the wire gets hot and gives off light. Look very closely at the filament in a light bulb. It is made of tiny coils of wire. By using coils, more wire can be put in the bulb, so more light can be made. Draw a light bulb using one from home as a model. Label the parts of the bulb using the following words: coil filament, glass bulb, wire support, glass support, base.

On the top of your light bulb, you will see numbers and letter, such as 60W or 100W, or 60 watts and 100 watts. This tells you how much power the bulb uses. The more power the bulb uses, the brighter it glows. Assuming you have four bulbs: 60W, 15W, 100W, and 300W, answer these questions.

1. Which light bulb uses the most electricity? _____
2. Which light bulb would make a good night light in your room? _____
3. Which light bulb would glow the brightest? _____
4. Which light bulb would be good for reading? _____

HOMEWORK

The first light bulb ever made had a filament made out of cotton! It burned brightly, but didn't last long. Find out who invented the first light bulb and when it was invented. Return to Canobie Lake Park for an evening of electric light and sparkles! You can watch the pyrotechnics display every Saturday night in July & August!

Note: The parking lot is lit with mercury vapor lamps. Energy efficient!

NEWS WRITING

Among the Appendix material attached to this manual is the reproduction of a 1967 article from the New England Electric Railroad Historical Society, Inc. titled: TROLLEYS TO CANOBIE LAKE PARK. Using that copy, answer the questions below.

However, first consider that news writing is a style of writing used by newspaper reporters and other journalists who write for periodicals. Periodicals are newspapers, magazines, and newsletters that are published regularly. Magazine and newspaper writers organize their ideas and their writing around what is called "the five Ws and the H"- who, what, w hen, where, why and how. As they conduct research and interview people for articles, journalists keep these questions in mind. Now answer the questions below on a separate sheet.

WHO	Who is involved? Who is affected? Who is responsible?
WHAT	What is the event or subject? What exactly has happened?
WHEN	When did this happen?
WHERE	Where did it happen?
WHY	Why did it happen? Why will the readers care?
HOW	How did it happen?

HOMEWORK

When you return from Canobie Lake Park interview a classmate about the day's events. Use the headings below to help frame your questions. Write your interview notes on a separate page. Then use your notes to write a news story for distribution to students in your school. Don't forget to:

A. Ask who, what, when, where, why and how.
B. Use quotes accurately.
C. Use correct spelling.
D. Avoid imposing your own opinion or beliefs in the story which must be a factual account of what you are told by the person you interview.

1. What happened?
2. Time and place event occurred?
3. Who was involved?
4. What the people said?
5. What bystanders or others said?
6. Order in which events occurred?

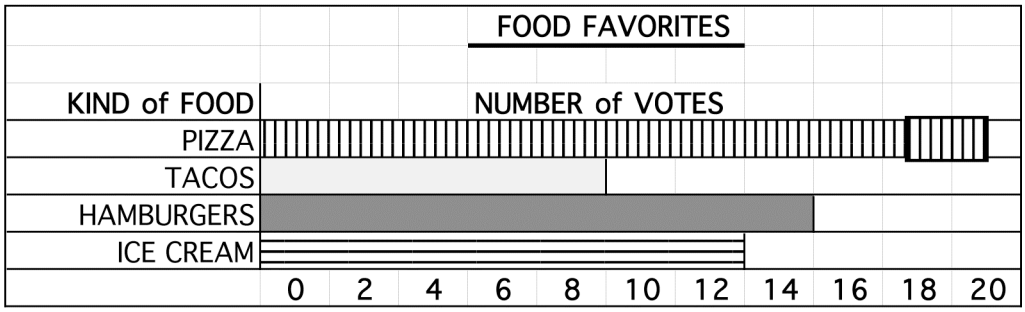
BUILDING VISUAL SKILLS: CHARTS and GRAPHS

Visual literacy is a necessary survival skill in today's society. Furthermore, understanding the visual presentations that accompany any written materials can significantly improve a student's comprehension of the text itself.

FOOD FAVORITES AT CANOBIE

Sometimes a bar stops between two numbers on a bar graph. You need to make an estimate, or a good guess to decide how much the bar stands for.

The bar graph on this page shows the results of a vote on favorite food served to a small school outing at Canobie Lake Park.



Study the bar graph,then answer the questions.

1. How many students voted for ice cream?_____
2. Which food got 14 votes? _____
3. How many fewer students voted for tacos than hamburgers? _____
4. How many votes did the most popular food get? _____
5. Vote on these foods with your class. Draw the results on a bar graph.

NOISE NEWS

Read the following paragraph. Show the facts on the bar graph.

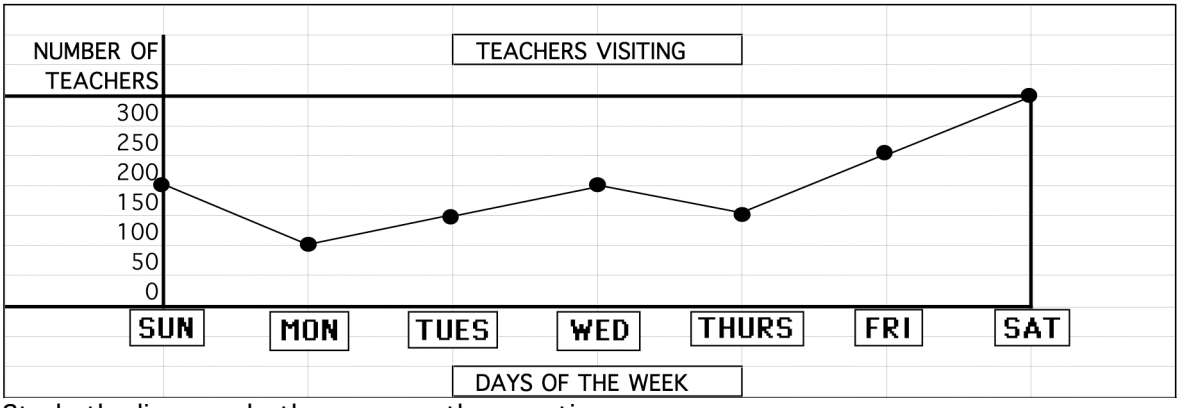
"Noise is measured in decibels. Some places and some things are far noisier than others. For example, the sound of a man riveting a large steel plate reaches a noise level of 118 decibels. The noise of both a motorcycle or subway can reach a level of 106 decibels. Busy street sounds measure about 85 decibels, while a jet taking off measures about 100. A man's speaking voice measures about 65 decibels, and a ringing telephone about 75.

1. Count the number of bars you will draw.
2. Mark how high each bar will be on the graph. List the numbers on the left from 60 to 120. Remember, some bars will stop between two numbers.
3. Draw each bar on the graph.
4. Label each bar at the bottom of the graph
5. Make up three questions about your bar graph. Ask your classmates.

UPS and DOWNS

The line on a line graph can go up or down. If the line goes up, it shows that something is increasing, or getting bigger. If the line goes down, it shows that something is decreasing, or getting smaller.

TEACHERS VISITING CANOBIE LAKE PARK



Study the line graph, then answer the questions.

1. How much time does this graph cover? _____
2. How many teachers visited Canobie Lake Park on Sunday? _____
3. On which day did the most teachers visit? _____
4. What does the line between Wednesday and Thursday show? _____
5. 87 % of all teachers on Friday had a piece of pizza. How many slices? _____
6. Why or why not do you believe this graph is accurate? _____

TWO VIEWS

You can compare information by creating a double graph. Study the following information about the average temperature for certain months at Canobie Lake Park in Salem, NH and the average temperature for the same period at Disney World™ in Orlando, FL. On a separate sheet design a double graph of this information, and answer the questions below.

MONTH	CANOBIE LAKE PARK	DISNEY WORLD™
April	49°	71°
May	52°	79°
June	69°	84°
July	82°	91°
August	81°	90°
September	74°	83°

1. What two cities does the graph compare? _____
2. How many months are compared? _____
3. Which city has a higher average temperature for August?_____
4. About how much cooler is it in Salem than Orlando in July? _____
5. In what month are both cities the warmest? _____
6. What general pattern can you see about the temperature in both cities?

OUTLINING

An outline contains the main ideas and important details of a reading selection. Making an outline is a good study aid. It is particularly useful when you must write a paper of your own. Read the following paragraph about weather's impact on the animals that live at Canobie Lake Park all year long. Use your own paper to finish the outline.

Weather has a lot to do with where animals live. Cold-blooded animals have body temperatures that change with the temperature of the environment. Cold-blooded animals include garden snakes, frogs, and lizards. They cannot live anywhere the temperatures stay below freezing for long periods of time. The body temperatures of warm-blooded animals do not depend on the environment. Any animal with hair or fur, including dogs, whales and elephants, are warm-blooded. Warm-blooded animals can live anywhere in the world where there is enough food to sustain them.

Some warm-blooded animals live where snow covers the ground all winter. These animals have different ways to survive the cold weather. Certain animals store up food to last throughout the snowy season. For example, the tree squirrel may gather nuts to hide in his home. Other animals hibernate in the winter. The ground squirrel and most northern raccoons stay in burrows all winter long, living off the body's fat reserves.

Title: _____

Main Topic: I._____

Subtopic: A. Cold-blooded animals' temperatures change with environment.
Detail: 1._____
Subtopic: B. _____
Detail: 1. live anywhere there is food

Main Topic: II._____

Subtopic: A. Animals have different ways to survive cold
Details: 1. _____
2. _____

COLONIAL SCHOOLS

You may be doing this material after your Canobie Lake Park outing. Colonial boys and girls never had such fun! Their life was hard and schools were much different than today. In early colonial days there were no schools or teachers. Children learned what they could at home from their parents, but often their parents couldn't read or write either. Later, some women in the New England colonies began teaching in their homes. These first schools were known as "dame schools." Often the books used in them were not books at all, but rather were "hornbooks" - flat, paddle-shaped wooden boards with the alphabet or Lord's Prayer on the front.

In 1647, a law was passed in the New England Colonies requiring every town of fifty or more families to establish an elementary school. By the 1700's, one-room, log schoolhouses were common. Children of all ages studied together under one strict schoolmaster. They attended school six days a week, from 7:00 or 8:00 in the morning until 4:00 or 5:00 in the afternoon. Their only textbooks were the Bible and the New England Primer, which contained the alphabet, spelling words, poems, and questions about the Bible.

Like the New England Colonies, the Middle Colonies also established schools. However, there were few schools in the Southern Colonies, where most of the people lived on widely separated farms. Wealthy plantation owners hired private teachers from England to teach their children, but the children of poor families received no education.

Answer the following questions on a separate sheet.

1. What was a "hornbook"?

2. What did the 1647 law passed in the New England Colonies require?

3. During the 1700's, what textbooks were used in the New England schools?

STUDYING THE WEATHER

Weather plays an enormous part in the planning of outings and scheduling employees for any particular day. In general, Canobie Lake Park is open everyday between Memorial Day and Labor Day. People have always searched the sky for clues about upcoming weather. Throughout the ages, farmers and sailors have looked to the winds and the clouds for approaching storms. But no real understanding of the weather could be achieved without a scientific study of the atmosphere. Such a study depends on being able to measure certain conditions, including pressure, temperature, and moisture. A true scientific examination of weather, therefore, was not possible until the development of accurate measuring instruments, beginning in the 17th century. Meteorology- the science of studying the atmosphere- was thus born in 1643 with the invention of the barometer, which measures atmospheric pressure. The liquid-in-glass thermometer, the hygrometer to measure humidity- the amount of moisture in the air- and the weather map also were invented during the 1600's.

With the measurement of these basic elements, scientists began to work out the relationships between these and other atmospheric conditions such as wind, clouds, and rainfall. Still, their observations failed to show an overall picture of the weather. Such complete weather reporting had to wait two centuries for the rapid transfer of information made possible by the invention of the telegraph during the 1840's.

Today, the forecasts of meteorologists are an international effort. There are thousands of weather stations around the world, both at land and at sea. Upper-level observations are also made by weather balloons and satellites which continuously send photographs back to earth. All of this information is relayed to national weather bureaus, where meteorologists plot it on graphs and analyze it. The information is then given to the public through radio and television stations and newspapers.

On a separate sheet, answer the questions below.

1. Which is the main idea?
   A. People have always searched the sky for clues about upcoming weather.
   B. A real understanding of weather depends on measuring conditions such as pressure, temperature, and moisture levels.

Write:

2. List 3 kinds of instruments used to measure atmospheric conditions and tell what conditions they measure.
3. During what century were many of these measuring instruments invented?
4. Name two things used for upper-level observations.

AFFECT and EFFECT

"Affect" means to act upon or influence. Studying will affect my grade. "Effect" means to bring about a result or to accomplish. The effect of her smile was immediate.

Study the examples. Then, on a separate sheet, write "affect" or "effect" in the blank to correctly complete the sentences.

1. Your behavior _____ how others feel about you.
2. His _____ on her was amazing.
3. The sunset over the lake created a striking _____ .
4. Your opinion won't _____ my decision.
5. There's a relationship between cause and _____.
6. The _____of her behavior was positive.
7. The Turkish Twist _____ed my stomach.
8. The Corkscrew Coaster created a funny _____ on my hairdo.
9. Did the audience's behavior _____the performance?
10. The cold _____ed her breathing.
11. The _____ was instantaneous!
12. Your attitude will _____ your posture.
13. The _____ on her posture was major.
14. The _____of the fireworks was dazzling
15. His broken arm _____ his ability to play the video games.

MATHEMATICS

Canobie Lake Park is a living laboratory for math problems-simple addition (how many tickets needed for the Skeeball prize), more advanced multiplication problems (total daily ridership x ride capacity per hour), probability (what's the likelihood of all ice cream cones being chocolate), word problems (how many revolutions would the Giant Sky Wheel make if it were rolled from Canobie Lake Park to Boston, 60 kilometers away), geometry (how many of the following shapes are on the exterior of any particular ride: triangle, square, rectangle, parallelogram, trapezoid, or rhombus.)

BUS PROBLEMS

Here is a problem for the bus as you travel to Canobie. Use the clues to find the answer.

1.
- The number is greater than 25
- The number is less than 35
- You say the number when you count by 3s
- You say the number when you count by 10s
- The number is _____.

2.
- The number is between 40 and 60
- It is an even number
- The sum of the digits is 7
- The number is _____.

3.
- The number is a multiple of 5
- It is less than 25
- It is a two-digit number
- It is not a multiple of 10
- The number is _____.

4.
- The number is between 242 and 250
- Each digit is even.
- Two of the digits are the same
- The number is _____.

5.
- The number is between 300 and 340
- The sum of the digits is 6
- When you divide by 5, the remainder is 0
- The number is _____.

THE C. LOUIS GREEN FAMILY

The C. Louis Green family lived in New York City. The children had heard about Canobie Lake Park from their cousins in Marblehead, MA. Mr. and Mrs. Green agreed to travel to Canobie for a family outing. Suzanne and Brooke were their teenage children. Stella Green, the mother, calculated the total expenses in advance. You do the same. Use a separate sheet to calculate the totals. Remember the five commandments for word problems.

A. I must be ready to think.
B. I must take my time and not rush.
C. I will read each problem twice for general & specific information.
D. I will be sure to use all relevant information.
E. I will check to be sure I am answering the question.

1. The family traveled 348 miles from NYC. They covered the distance in 6 hours. How many miles per hour did they travel? If their Honda got 23 miles to a gallon, how much did the gas cost if gasoline was $ 1.37/gal? How many gallons of gas did they use coming and going from the Park?

2. The Green family met their cousins, Willy, Myra, Tony, and Laura with their children Kevin, Tina, Adria, Anthony, Mia and Max and Grandma Mary in the parking lot. They had discount coupons from McDonalds. Each adult only had to pay $14. Grandma paid $10.00 and Max was less than 48 inches tall. His ticket was $ 10.00 too. Baby Anthony got in free as he was only 2 years old. What was the total cost of admission for all members of the party? It was charged to a MasterCard™.

3. They suppered at the Portofino restaurant overlooking the lake. Large deluxe pizzas were $11.00 each, giant steak bomb sandwiches were $4.75 each, 24 oz sodas in souvenir cups were $3.25 each, jumbo chicken Caesar salads were $5.95 each. Their waitress gave them extra paper products for free. Excluding the state tax and tip, what was the bill if there were 4 pizzas, 10 sodas, 3 steak sandwiches and 2 salads?

4. Before they left, each child/teenager bought a souvenir T-shirt for $12.00 and Grandma bought 3 coffee mugs @ $4.50 to bring home.

5. Everyone in the party played a series of games @ $2.50 each.

6. Before they traveled back to New York, Stella stopped and bought picnic supplies. A jar of jelly for $1.80, a jar of peanut butter that cost twice as much as the jelly, a loaf of bread for $1.29 and paper plates, napkins and soda that cost 3 times the cost of the bread. There is no sales tax in New Hampshire. (Note: don't forget the original question.)

ROUNDING OFF

Fill in the missing digit. The number must fit the fact.

1. - 889. Rounded to the nearest thousand, the # is 4,000.
2. -163. Rounded to the nearest thousand, the # is 5,000.
3. -499. Rounded to the nearest thousand, the # is 9,000.
4. -527. Rounded to the nearest thousand, the # is 2,000.
5. 1-497. Rounded to the nearest thousand, the # is 13,000.
6. 5-001. Rounded to the nearest thousand, the # is 56,000.
7. 6-862. Rounded to the nearest thousand, the # is 61,000.
8. 8-500 Rounded to the nearest thousand, the # is 90,000.

Use the digits to form numbers

9. Use 3,5,7,8 Rounded to the nearest thousand, the # is 7,000.
10. Use 1,2,6,8 Rounded to the nearest thousand, the # is 7,000.

KENTUCKY DERBY RACE

The Kentucky Derby Race is in the southeast quadrant of the Park. It is a game of skill. Six (6) children from the Bruce School played the game. Using your mathematical reasoning skills, write each student's name next to the correct finishing time:

Name	Time in minutes
_____	3.05
_____	2.45
_____	2.56
_____	3.00
_____	4.30
_____	4.25

Richard finished last.
Lisa finished just before Richard.
Tony finished before Kim.
Julio finished first.
Maria finished just after Julio.
Kim finished after Tony.

WRONG !!!!!!!

In each row, one answer is different. Circle that answer. Estimate first. Use a separate piece of paper. Copy carefully.

A.	900/3	5,296 -4,996	175 x 2	293 + 7
B.	118 +323	21 x 21	2,064 - 623	882/2
C.	286 + 39		972/3 - 8,649	65 x 5

INVENTION UPDATE

Earlier in this manual you learned who invented the prototype of Canobie's Giant Sky Wheel. These answers spell out another American inventor from an earlier century. Write the letter of the problem above the answer. The letters will spell the inventor's name. Use a separate sheet.

K= 3.10/6.2 R=2.6/1.3 J=0.42/2.1 L=184/0.92

N=6.90/0.23 A=9.6/2.4 B=3.72/0.12 F=123/0.41

I=35.2/3.2 M=3.4/0.34 E=0.39/0.18

31	2.2	30	0.2	4	10	11	30

300	2	4	30	0.5	200	11	30

INVENTOR MATCH

This is a quiz for you and your classmate. First guess the inventor of each item. Then divide to check your guess. The quotient gives the inventor's name. Use a separate sheet.

Item	Problem	Quotient	Inventor
jeans	0.882/4.2	0.21	Joseph Merlin
zipper	8.4/0.28	5	Thomas Edison
roller skates	0.636/5.3	0.12	Levi Strauss
computer	0.384/0.16	30	Whit Judson
electric light	15.45/3.09	2.4	Charles Babbage

SALE TIME! BARGAINS!

1. If the regular price was $20. & you saved $5, what % did you save?
2. If the regular price was $150 & you saved $60, what % did you save?
3. If the regular price was $100 & you saved $8, what % did you save?
4. If the regular price was $36 & you saved $3.60, what % did you save?
5. If the regular price was $400 & you save $200, what % did you save?
6. If the regular price was $ 55 & you save $6.60, what % did you save?

RATIO

Canobie Lake Park is committed to quality rides. One way to guarantee the same is to constantly maintain equipment. Consequently, Canobie orders lots of paint annually. If the painter uses 6 liters of paint to paint 3 "Canobie 500" cars, how many liters are used to paint all 12 cars? This is a problem of ratios. Using a separate sheet, answer the example problem and then write the letter of the answer on the line next to the problem below. If the answers are correct, the letters from top to bottom will spell the other name for two equal ratios. THINK.

----- 1. What 2 numbers are in the ratio 1 to 2 and have a sum of 24?	O	66,33
----- 2. What 2 numbers are in the ratio of 1 to 4 and have a sum of 30?	R	6, 24
----- 3. What 2 numbers are in the ratio of 6 to 3 and have a sum of 99?	O	18,12
----- 4. What 2 numbers are in the ratio of 1 to 5 and have a sum of 30?	N	27,72
----- 5. What 2 numbers are in the ratio of 3 to 2 and have a sum of 30?	R	110,40
----- 6. What 2 numbers are in the ratio of 11 to 4 and have a sum of 150?	P	8, 16
----- 7. What 2 numbers are in the ratio of 7 to 1 and have a sum of 24?	P	5, 25
----- 8. What 2 numbers are in the ratio of 8 to 7 and have a sum of 150?	O	45,55
----- 9. What 2 numbers are in the ratio of 9 to 11 and have a sum of 100?	I	80,70
-----10. What 2 numbers are in the ratio of 3 to 8 and have a sum of 99?	T	21,3

MONEY MEASURES

MONEY FACTS

Coin	Width	Weight
Penny	19 mm	3 g
Nickel	21 mm	5 g
Dime	17 mm	2 g

Penny Arcades use many coins. Use the information in the table above to help you answer the questions. THINK.

1. How many dimes are there in a collection of dimes that weighs 150 grams? _____

2. A collection of nickels is placed in a row end-to-end. The row measures 35.7 centimeters. How many nickels are in the row? _____

3. A collection of pennies is placed in a row end-to-end. The row measures 1.52 meters. How many pennies are in a row? _____

4. How many pennies are there in a collection of pennies that weights 3 kilograms? _____

5. A collection of dimes weighs 350 grams. What is the total value of the dimes? _____

6. What is the weight of a collection of nickels that is worth $ 4.75? _____

7. How much more is 275 grams of nickels worth than 50 grams of dimes? _____

8. How much more does $ 5.98 in pennies weigh than $50.00 in dimes? _____

RIGHT, ACUTE or OBTUSE?

The corners of this piece of paper are 90° angles. Use the corners to help you identify an angle as acute, right or obtuse. Remember -

If an angle measures less than 90°, it is an acute angle.
If an angle measures 90°, it is a right angle.
If an angle measures more than 90°, it is an obtuse angle.

Look for angles around the Park. Find five (5) examples of acute, right, and obtuse angles. Write the examples below.

Acute angles

Right angles

Obtuse angles

THE VOTE COUNT

In a one month period, patrons voted for their favorite ride at Canobie Lake Park. Thirty-four thousand votes were cast. Although there are over 75 rides, games and attractions, only the top nine (9) rides are used for this problem. Using the following information as to percentage of votes received, complete the graph. Use a separate sheet to compute the answers. To find the number of votes, change the decimal to a percent, then multiply.

For example 30% = 0.30

0.30 x 34,000 = 10,200

Would your class vote in the same percentage as to favorite rides?

RIDE	PERCENT	DECIMAL	# OF VOTES
1. Corkscrew	30%	.30	
2. Cannonball Coaster	20%		
3. Log Flume	17%		
4. Timber Splash	0%		
5. Dodgem	8%		
6. Turkish Twist	6%		
7. Rowdy Roosters	5%		
8. Crazy Cups	3%		
8. Mine of Lost Souls	1%		

On your sheet draw a circle graph using the same figures

SPEND A HUNDRED

Assume you won a $100 gift certificate for the Gift Shoppe. You must spend all $100.00 Decide how much money you would spend on each of the items. The prices are as follows:

T-shirt = $10.00 Shorts = $10.00 Bathing Suits = $25.00

Towels = $15.00 Sunglasses = $ 5.00

- Record the number of dollars spent for each item.
- Write this amount as a fraction of the $100.00.
- Write the fraction as a percent.

Item	Number of Dollars	Fraction	Percent
1. T-shirts			
2. Shorts			
3. Bathing suits			
4. Beach towels			
5. Sunglasses			
Total:			

On which item did you spend the most money?

BILLS, BILLS, BILLS

All U.S. paper money is about 6 inches long. 2 inches wide, 0.004 inch thick and weights about 0.03 ounce. For this problem, only one-dollar,
5-dollar, 10-dollar, 20-dollar, 50-dollar, and 100-dollar bills are used.

1. AROUND THE WORLD
   The distance around the earth at the equator is about 25,000 miles. How many dollar bills laid end-to-end would be needed to wrap around the earth at the equator? _____

2. A YANKEE CANNONBALL OF FIVES
   The total length of the Cannonball Coaster is approximately 1860 feet. What would be the total value of the 5-dollar bills laid end-to-end that would equal the length of the ride? _____

3. COKE BY THE DOLLAR
   The weight of a souvenir cup of coke is 32 ounces. How many dollar bills together equal the weight of the drink? _____

4. POPCORN IN TWENTIES
   The popcorn stand produced 345 pounds of popcorn. What would be the value of a pile of 20-dollar bills equal in weight to that of the popcorn?
   _____

5. PLATFORM OF DOLLARS
   The stage floor in Kiddie-Land is 18 feet long and 10 feet wide. How many dollar bills would be needed to cover the stage floor?_____

MAKING GENERALIZATIONS

Look at this pattern. Assume that it continues.

MATHMATHMATHMATHMATHMATHMATHMATH.....
1. What will be the 40th letter?
2. What will be the 99th letter?
3. What will be the 956th letter?
4. How many Ts will there be in the first 150 letters

GENERALIZEGENERALIZEGENERALIZEGENERAL.....
5. What will be the 76th letter?
6. How many of the first 100 letters will be Ns?
7. How many vowels will there be in the first 240 letters?
8. How many letters are there before the 50th L?

FRACTIONS IN WORD PROBLEMS AT CANOBIE

1. The cotton candy mix called for 5/8 of quart of blue coloring to 50 lbs of sugar. How much coloring and sugar would be needed for a supply 2.5 times larger than the original recipe? _____

2. At the end of the picnic in the north grove, there were 5 3/5 pizzas and 4 people left. Assuming each person took home an equal amount of pizza, how much pizza did each person take home? _____

3. Raymond's two sisters were coming to Canobie Lake Park on a school outing. He gave his older sister 3/16 of his allowance, and 1/8 of his allowance to his younger sister. How much of his allowance did he give away? _____

4. Adria and Max had a canteen full of 5 quarts of apple juice. Max drank 1 2/3 quarts and Adria drank 2 2/9 quarts. How much was left?

_____

5. The workmen had a weight lifting contest. Arnold lifted 1000 13/15 pounds; Sid lifted 1000 9/10 pounds; John lifted 1000 5/6 pounds. Who could lift the most weight? _____

6. Mary got 7/8 of her 24 problems wrong. How many did she get right?

7. How would the quotient of 8/25 divided by 4/5 be written as a decimal?

8. Nancy is 12 2/3 years old, and Sally is 11 5/6 years old. How old are their combined ages? _____

9. Grace's teacher gives partial credit on math problems. Out of 55 problems, Grace got 13 2/5 incorrect. How many did she get correct?_____

10. Sun-worshipping Jane was going to the pool and knew the dangers of sunburn. She found some partially full bottles of sun block and combined them. She found one that was 1/5 full, one 3/10 full and another 3/4 empty. How much sun block did she have when she combined them?

_____

MAKING CONCRETE FOR THE BENCHES

John is a mason at the Park. He works with concrete and bricks. John needed to prepare a new batch of concrete. The proportions he uses never vary. He mixes 7 parts sand and 4 parts mortar with water. John couldn't find his regular measuring bucket. The only containers he had were a 5 gallon bucket and a 3 gallon bucket. John is not only a fine mason, but he is an expert mathematician. On a separate sheet of paper, outline the steps John used to make accurate measurements.

WORD PROBLEMS WITH MONEY

On a separate sheet of paper, solve the following word/money problems.

1. What is the sale price of a $32.00 stuffed animal marked "15% off"?

2. What is the unit price of an item that sells for $3.54 for 6 items?

3. A supervisor earns $8.40/hour. How much will she earn in 48 hours?

4. 20% of Martha's weekly paycheck goes to taxes. Last week she paid $36.00 in taxes. What was her gross weekly pay?

5. John makes a 15% profit on each $18.00 book he sells. How many books must he sell to earn $229.50 he needs to buy a television?

6. A case of 24 cans of Coke™ sells for $5.99. What is the price per can?

7. The pizza stand buys dough for 58¢ a pound. This price represents a 1/3 discount. What is the regular price of a pound of dough?

8. What change would you receive if you purchased a $2.35 roll of film with a $5 dollar bill?

PROBLEMS AT THE TRACK MEET

Write the answers to these problems on a separate sheet.

1. The high jump record was 5 feet, 3 3/8 inches. Manuel jumped 6 feet, 2 1/8 inches. By how much did Manuel break the record?

2. Neil jogged 2.6 miles on Monday, but only half as far on Tuesday. How far did Neil jog these 2 days?

3. The day after Dominic bought his sneakers for $24.60, he saw a sign in the store window: "25% off all sneakers". How much could Dominic have saved if he had waited one day?

4. The Blue Devils won 4 of 5 meets this season. What was their % of wins?

5. Ronnie ran the 1500 meters in 5 minutes & 4 seconds. Reggie ran the same distance in 15 seconds less. What was Reggie's time for the 1500 meters?

6. Joan ran the 50 yard dash in 5 seconds. At this rate, what would be her time in the 220 yard dash?

7. The first leg of the 440-yard relay took 11.5 seconds. The second and third leg took 11.85 seconds. The anchor leg took 11 seconds flat. What was the total time for the 440-yard relay?

8. Jerry's slowest time in the 440-yard dash was 70 seconds. His best time was 15% faster. What was Jerry's best time?

9. The winning time for the 4 legs of the mile relay in 4 minutes, 40 seconds. What was the average time for each of the 4 runners?

10. Manny placed second in the long jump with a leap of 17 feet, 4 1/4 in. The winner jumped 2 1/2 inches further. What was the winning jump?

PATTERNS: FINDING THE SIMPLEST CASE

Understanding patterns make it possible to predict what is supposed to happen in mathematics. A function is the simplest mathematical expression of a pattern. This expression can take the form of a graph, a table, or a formula. On a separate sheet express the functional relationship found in the following problem as a graph, table and formula.

A PICNIC LUNCH FOR THE BRUCE SCHOOL AT CANOBIE

The Bruce School annually visits Canobie Lake Park for an outing. Mr. Twomey would like all 200 students and teachers to sit at a single long table. Marriott Food Services will supply the food, but doesn't have a single long table. Instead, Brad has many small square tables designed to seat 4 people.

1. How many square tables must be pushed together to accommodate 200 guests?

2. How could this same number of tables be arranged to serve the fewest number of guests?

NOTING PROBLEM VARIABLES

Noting the variables in a problem is helpful in solving many problems, especially those confounded with extraneous information. Below are written notes of a problem solver. Eliminate the extraneous data and answer the questions asked.

A CLASS VOTES FOR THE BEST RIDE AT CANOBIE LAKE PARK

Notes: The Dodgem got 36 votes; the Turkish Twist got 6 votes less than the Xtreme Frisbee; the Xtreme Frisbee got 4 votes more than the Skater; the Dodgem got 75% as many as the Skater; the Xtreme Frisbee and the Flume got the same number of votes; 24 classmates didn't vote.

1. How many votes were cast?

2. What ride received the fewest votes?

COUPONS FOR PRIZES

Notes: Marisa has 647 coupons from Skeeball; she has 247 Fascination coupons; and the rest of her coupons are from Splash Gun. Marisa has a total of 1245 coupons.

1. How many coupons are not from Fascination?

2. How many Splash Gun coupons does Marisa have?

CONSTRUCTING LOGIC PUZZLES

Logic puzzles are fun. You should be able to construct your own logic puzzle if you follow the directions given below. Use a separate sheet for this problem. First determine Categories.

Category 1:	Employees at Canobie Lake Park Beth, Bill, John, and Sam
Category 2:	Jobs of employees Cast member, supervisor, mechanic, cashier
Category 3:	Cars driven by employees van, truck, convertible, sports car
Introduction:	Each of the 4 employees at Canobie has a specific job and drives a different vehicle. Match the employee with his/her job and vehicle.
Develop Clues:	Write clue statements using items from your chart of categories. Each statement should connect 2 items in the chart. Every item should be used at least once.

Hint: Create a grid with 3 columns across for employees, job, and car.

Fill in the grid.

THINK!

Clues: Sam drives a sport car. Beth works as a cast member in Kiddie Land. Bill does not like vans. The supervisor drives a truck. The cashier is not John. The mechanic drives a convertible. John dislikes trucks.

Chart: Make a solution chart for the puzzle. HINT: List the jobs and type of vehicle down the left side. List the names across the bottom. Write Y for "yes"; write N for "no" in the individual blocks in response to the clues.

Conclusions: Study the solution chart. Draw conclusions from your information

Answer the Question: What person works what job at Canobie and what kind of car does s/he drive to work?

WILD WIDGET WORKS - IT'S LEGAL BUT IS IT FAIR?

Remember the terms:

MEAN = SUM DIVIDED NUMBER IN SAMPLE (AVERAGE)
MEDIAN = THE NUMBER THAT OCCURS IN THE MIDDLE
MODE = THE NUMBER THAT OCCURS MOST FREQUENTLY

You want a summer job to earn lots of money. You check the advertisements in the newspapers. Wow! The Wild Widget Works advertises that the average worker receives $8.15/hour. This sounds great. You are interviewed, hired and start to work on Monday. You work 8 hours a day, Monday through Friday. On Saturday you tear open your pay envelope. You expected a gross wage of $326.00, but you only made $170.00. You feel cheated and you complain to the manager. The manager gives you a copy of the payroll sheet. It is reproduced below:

PAY RATE/HR	# OF WORKERS	JOB TITLE
$ 4.25	12	Summer helpers
$ 4.90	1	Summer foreman
$ 5.05	4	Delivery people
$ 6.50	3	Office help
$ 8.15	1	Manager's secretary
$ 15.00	2	Accountant
$ 20.00	1	Assistant manager
$ 50.00	1	Manager

After studying the material, you realize you are paid $4.25/hour, but you were expecting $8.15/hour. How could this be? How could the company legally advertise that the average worker earns $8.15/hour when only one makes that rate of pay?

Use your knowledge of mean, median, and mode. Use these measures of data to find a reason why Wild Widget Works can advertise as it did. Define the reason.

Think and Write

Imagine that you are the manager of Wild Widget Works. Explain in writing why you feel justified in saying your average worker receives $8.15/hour.

Are there other amounts that you could receive if you are an "average" worker?

ICE CREAM! ICE CREAM! WE ALL SCREAM FOR ICE CREAM!

Canobie Lake Park serves ice cream, frozen yogurt and soft serve.
At the west end of the International Food Plaza there is an ice cream stand that sells six different flavors. What are all the different combinations of ice cream possible if a patron buys a double-scoop cone?

Do your work on a separate sheet. Use cubes in a graph to find out. Assign a flavor to each color of cube. Then build as many different combinations as possible. The two-scoops may be the same flavor or they may be different flavors. Count each combination of two flavors only once. A double-dip all vanilla cone counts as one. The chocolate and vanilla double dip cone counts as one, also. It doesn't matter in which order the flavor is placed on the cone.

How many combinations did you find?

THE LUNCH COUNTER LEGEND AT CANOBIE LAKE PARK

This old restaurant no longer exists at Canobie Lake Park. The story remains, and the math problem is still good. Here are the facts. Three (3) brothers, (Peter, Paul & Philip) lived with their mother in Methuen, and worked together at Canobie Lake Park. They got along very well except at mealtime. Each brother wanted to sit by himself at the counter for lunch. Peter always sat to the left of his brothers, Paul liked to sit in the middle, and Philip always sat to the right of his brothers. Since Sam had 5 seats at the counter.***

Peter sat in the # 1seat.
Paul sat in the # 3 seat.
Philip always sat in the 5th seat.

A. Business improved and Sam installed another seat at the counter. How many ways can the brothers sit at the new counter?

B. Business improved again!. Another seat was added. How many ways are there now for the brothers to sit?

C. Still business improved & Sam added 3 more seats for a total of 10. The brothers were delighted. How many arrangements were then possible?

*** HINT: Draw a picture of the examples

FACE THE FUTURE

Most 8th grade students should find the previous 15 pages of math problems and games challenging but workable. Earlier in the section are very easy middle grade materials, too. However, it is anticipated that many of the participants in this material will return for PHYSICS DAY as they are promoted up the grades. Get a jump on the necessary vocabulary for that day. Visit the library and review some math material over the summer.

aerodynamics:	The study of the forces that act on an object as it moves through the air. Think of a fireworks shell as it's shot into the air.
centripetal force:	The force that causes an object to move in a circle. It literally means the "center seeking" force. Think of the Carousel.
drag:	A retarding force produced by air resistance that causes an airplane to slow down and thus decreases lift, as in the Rowdy Roosters.
friction:	A force that works in an opposite direction to an object that is moving along a surface. Think of a coaster moving along its track.
hygroscopic:	Capable of absorbing and holding moisture. Think of bark mulch around a cultivated area of bushes.
lever:	A rigid bar used to support a weight. When used with a fulcrum, the lever becomes a simple machine. Think of a see-saw.
momentum:	The product of the mass and the velocity of an object. Think of the movement of the cars on the Tilt-a-Whirl or the Crazy Cups.
parabola:	A math shape that is similar to a section of a circle in which the ends have been straightened. It is the path a thrown object takes due to gravity's pull, like a fastball at the Baseball radar game.
pendulum:	A simple device in which an object is suspended by rope, chain, or string from a central pivot point. Think of a swing.

sphere:	A ball-like shape that has maximum volume and minimum surface area. Many of the games at Canobie use "spheres."
velocity:	Speed in a specific direction. Think of the Wipeout ride.
weight:	The force with which an object is pulled toward the earth by gravity. Think of the Land/Sea Rescue at the conclusion of the ride.

SCIENCE

As repeated in the previous sections, Canobie Lake Park is a class- room resource for developing teaching topics -life science examples, ecological enrichment activities, science and technological lessons using cross curriculum themes etc. Few people know, however, that Canobie Lake Park has a secret, national function as a world-class laboratory for many WET, WACKY, WILD, DIZZY EXPERIMENTS about things kids like best.

All appropriate activities in the study of science cite the creative and systematic processes for proving or disproving a question following an observation as "The Scientific Method". The first five (5) process skills in the following list should be emphasized with young children, while all eight (8) skills will be utilized by anyone involved in scientific activity: 1) Observing 2) Communicating 3) Comparing 4) Ordering 5) Categorizing 6) Relating 7) Inferring and 8) Applying.

Before the Scientific age, people observed, inferred and applied natural phenomenon to the spirits as a way to explain an event. The following charming Australian folktale for primary and middle school children will link the eras and Canobie Lake Park's niche in fantasy and invention...

WHEN THE FLOWERS RAN AWAY

Long ago, there was a time called Dreamtime, when spirits lived on the earth. People say the great spirit Baiame made the world, the animals, the sky, the sun, the moon and the stars. Baiame walked over the earth and caused the rain to fall and the flowers to grow. When he saw that the earth was green and beautiful and that the people were happy, he was content and knew he could rest. He made himself a home in the sky called Pullima, where Baiame could sit and look down at the prosperous earth.

Everything seemed to be perfect. But soon the flowers on earth grew dissatisfied for they wanted to be with Baiame. One night they softly climbed up to the sky and settled in Pullima which became even brighter and more beautiful. When the people on earth awoke in the morning, they looked for the flowers but they were nowhere to be found. The people were so unhappy, they began to cry. The bees could not make honey and starved and the butterflies had no place to rest.

Finally, in desperation, some old men of the earth decided to seek Baiame and ask for help. They climbed for days up the side of a huge mountain until they could see Baiame's home in the sky. And there were the flowers, as beautiful as ever. Baiame looked down and invited the old men to his home to rest and talk to him. The men pleaded with Baiame to give back the flowers so earth could be beautiful again. Baiame was sad. He didn't want the earth people unhappy, but he didn't want his home to be without flowers.

Finally Baiame told the men to pick as many flowers as they could carry. "These flowers" said Baiame, "will root and grow on earth. After the hottest days of summer have gone, the flowers will wither. Then they will be with me. But when spring comes again, I promise they will return." The men did as Baiame told them and found that he had told the truth. The beautiful flowers grew on earth. Every year, at the end of summer, the flowers wilted and died, but in the spring they came back again.

1. Main Idea. Cross out the wrong phrases:
   This story explains _____why there are spirits on earth.
   _____why flowers die and come back in the spring
   _____why bees could not make honey

2. Sequencing. Number the events below in the order they happened:
_____The people were unhappy without flowers & asked Baiame for help.
_____The flowers withered at the end of summer.
_____The men picked as many flowers as they could carry.
_____The flowers grew dissatisfied on earth and went to Pullima.
_____Baiame made the world and everything in it.

3. Reading for detail. Answer the questions:

Who was Baiame?
What things did Baiame make?
Where did Baiame make his home?
Why did the flowers run away?
When did the people notice the flowers were gone?

4. Reading for Understanding. Write the correct letter in the space:

_____Baiame	a. Baiame's home
_____Pullima	b. Great Spirit
_____wither	c. thriving and successful
_____prosperous	d. to fade away and die.

Explain the real and scientific reason why the flowers wither and die at summer's end and return in the spring to grow and blossom.

THE SCIENCE OF THE YANKEE CANNONBALL ROLLER COASTER

Roller coasters were originally made of wood and rode on steel wheels like Canobie's Yankee Cannonball. Later versions followed paths of steel and rolled on tires, as do the Galaxi and Corkscrew. But all coasters work on the same principle: gravity. A machine brings you to the top of the hill, and gravity gives you the rest of the ride.

Study these questions before you arrive at the Park. As you ride the Cannonball, try to experience the ride as you would conduct any science experiment. You are the experiment. Note when you feel increased and decreased forces. They may push you into your seat or lift you off it. They may push you left or right.

1. How does the size of the hills change during the ride?
2. Do you move faster or slower when you are at the top of a hill?
3. Do you move faster or slower when you are at the bottom of a hill?
4. As you go up the hill, do you gain or lose speed?
5. As you go down the hill, do you gain or lose speed?
6. As you go up the hill, do you feel heavier, lighter, or your usual weight?
7. As you go down the hill, do you feel heavier, lighter, or your usual weight?
8. When the ride makes a turn, are you pushed into the turn or away from it?
9. When the tracks curve, do they tilt inward or outward or are they parallel to the ground?

EXPLANATION

A roller coaster works because of two things: gravity and the law of conservation of energy. A coaster is similar to a common playground slide except it is longer and you ride in a car and not on the seat of your pants. The wheels reduce friction. It is easier to let something roll than slide

Unlike riding a slide, a motor takes you to the top. But as on the slide, you start with potential energy. That potential energy is turned into kinetic energy as gravity pulls you down the first hill. The farther you go down the hill, the more potential energy is changed into kinetic energy, which you feel as speed. The ride goes fastest at the bottom of the hill because all the potential energy has been changed to kinetic energy.

As you go up the next hill, kinetic energy is changed back into potential energy and the ride slows down. The higher you go, the more energy is changed and you feel the car slow down. The conversion of kinetic energy to potential energy and vice versa continues as you go up and down hills for the rest of the ride. The total energy does not increase or decrease; it merely changes from one form to another.

However, some of the energy is changed into friction. Wind resistance, the rolling of the wheels, and the other factors all use some of the energy. Coaster designers know that friction plays a part in the ride. Therefore, they make each successive hill lower so that the coaster will be able to make it over each peak.

The force you feel when the coaster makes a turn is called centripetal force. When you make a turn, it feels as though you are being thrown to the outside of the car. Coaster designers take this into account when they bank the turns by tilting the track. Centripetal force then pushes you against your seat so that you pressed into the confines of the car.

Canobie Lake Park has many other rides that take advantage of the laws of gravity such as the Log Flume, the Timber Splash Water Coaster, the Galaxi, and a kiddie-style coaster called the Dragon Coaster, where adults can accompany children. Canobie has another coaster but of a unique character.

What is your Yankee Cannonball IQ?

1.) The Yankee Cannonball was built in?

a. 1900 b. 1920 c. 1930 d. 1940

2.) Its original name was

a. Flying Toboggan b. Greyhound c. Galaxy d. Cheetah

3.) Its original location was in Waterbury, CT.

True False

4.) The Yankee Cannonball was moved to Canobie Lake Park in 1936?

True False

5.) In 1954, a hurricane destroyed much of the roller coaster

True False

6.) The length of the Yankee Cannonball is

a. 200 feet b. 2000 feet c. 4000 feet d. 1 mile

7.) The highest speed of the Yankee Cannonball is

a. 20 MPH b. 35 MPH c. 50 MPH d. 100 MPH

8.) The longest drop is about

a. 55 feet b.65 feet c. 75 feet d. 85 feet

9.) The Yankee Cannonball was made in the figure eight design

True False

0-1 wrong – You're an expert 2-3 wrong – you need to study more 4 or more wrong – go back to bed!!!

THE CORKSCREW - CANOBIE'S LOOPING COASTER

Much of the excitement around roller coaster rides center on the ones that loop or go through a corkscrew. You experience not only the thrill of tremendous speed and falling from great height, but also the exhilaration of being turned upside down in the process.

Consider these questions and see if you can anticipate the answers before you ride the CORKSCREW.

1. If the ride has corkscrews, do the circles get wider or narrower or do they stay the same?
2. When you are turned upside down in a corkscrew, are you pushed down in your seat or are you lifted off the seat?
3. When you enter a loop, do you feel heavier or lighter than you normally do?
4. When you reach the top of a loop, do you feel heavier or lighter than you normally do?
5. Do you feel a greater force when you enter a loop or when you leave it?
6. When you go up in a loop, does the train speed up or slow down?
7. How does the force you feel in your neck when you go forward through a loop compare to what you feel when you go backward.

EXPLANATION

If you look at the shape of the curve in a looping coaster, you will see that it is not a circle but a teardrop shape. That shape is called a clothoid loop. It was first described by a mathematical genius Leonard Euler of Switzerland in the 18th Century. Only recently did roller coaster engineers realize that it was the perfect shape for achieving the long sought after goal of the roller coaster somersault. Before using Euler's ideas, designers had little success with what seemed to be the logical choice for the loop, a 360° circle. Simple physics doomed that shape. All rides moving in a vertical circle generate centripetal force that presses the riders into their seats. At the top of a loop, when the coaster and its occupants are upside down, the centripetal force must be greater than the force of gravity or the people will fall out of their seats.

Designers can make the ride fast enough and the circle big enough to create just over 1 g of centripetal force to counteract gravity (1 g) at the top of the circle. Unfortunately, in order to achieve 1 g of force at the top of the circle, riders would have to be subjected to over 8 g's when they first enter the loop.

8 g's are a lot for the human body to handle. To put it in perspective, the space shuttle creates only about 3 g's. At 6 g's many people get nosebleeds, and at 9 g's unconsciousness can occur. The clothoid loop smoothes out the forces that the riders undergo and still keeps them safe. It does this by being a circle whose radius continually decreases on the upward swing. This decrease in radius creates a higher centripetal force at a lower speed and allows riders to undergo a maximum of 3 to 4 g's on entering the loop. The loop is safe because of physics, mathematics, and engineering.

THE DODGEM "CRASH TEST"

The Dodgem or bumper cars are a fun place to learn how not to drive! Some people avoid being hit, while other Guests want to be crashed into. Some drive around sedately, while others run into everything in the driving area including the walls!

It is the crashes that make the following experiments interesting. Watch the ride again before you ride. Try to answer the following questions:

1. Before you get on the ride, look at the bumper cars. How are they different from a normal car?
2. When you first start up your car, which way are you pushed?
3. When your car stops, which way does your body want to move?
4. If you are in a head-on crash, which way does your body want to move?
5. When you are hit from behind by another car, which way are you thrown?
6. What happens to you when you are hit from the side?
7. When your car is moving and it runs into someone else's car, when do you feel the greatest force- when the other car isn't moving, when it is moving away from you, or when it is moving toward you?

EXPLANATION

The bumper cars obey Newton's three laws of motion. According to the first law, objects (like people in bumper cars) tend to travel in the direction that they are going. This means that when your car is moving and it hits another car and that car stops, your body obeys Newton's first law and keeps going forward. Similarly, when your car is stopped and someone else hits it from behind and moves it forward, you try to keep your body stopped and you feel as though you are being thrown backward.

The second principle of science in bumper cars is that of "impulse" and "momentum". Impulse and momentum are what Newton called "the quality of motion". Impulse is the product of a force and the time interval over which it acts. This impulse is transferred to another object, giving it momentum. Momentum is the product of the mass and the velocity of an object. Velocity is speed in a specific direction.

When your car crashes into another car that is stopped, some momentum is transferred to the other car from yours, making the other car move. Some of your momentum is converted into an impulse that causes the other car to move. It will have momentum equal to the impulse it received. The rubber bumpers surrounding the cars slow down the transfer of momentum making it safe. There is a 48 inch minimum height requirement at the Dodgem between the Matterhorn and the Round-Up. There is, however, a kiddie-style Dodgem called the Mini-Skooter for children less than 48 inches tall near the Riverboat Circle in the northwest quadrant of the Park.

THE ANTIQUE CAROUSEL

On a separate sheet answer all the question, organizing by prototype.

1. As the ride turns, is your body thrown slightly to the inside or the outside?

2. Do all the ride animals go up and down at the same time?

3. Does the ride animal next to you move up and down as you do?

4. Do you feel slightly lighter or slightly heavier when your horse is going up? What about when it's going down?

5. Which ride animals move faster around the circle - the ones on the inside or the ones on the outside?

THE PSYCHO-DROME

The Psycho-drome is a Scrambler, a more complex centripetal force ride in which there are two axes of rotation.

1. Before you get on the ride, can you imagine the path that the seats follow during the ride? What effect does the double rotation have on the path?

2. As you ride, are you moving faster when you are closer to or farther from the ride's center?

3. Are you pushed inward or outward as the ride makes the turns?

4. Are the forces on the ride always the same?

5. Are there times when you feel as though the ride is moving in a straight line?

TRE-E-EMENDOUS PLANT

As you entered the Park, you probably noticed a huge Blue Spruce, south of the Trellis food stand, and directly across from the turnstiles. An important story exemplifying Canobie Lake Park's pledge to its surroundings revolves around the saving of the great Blue Spruce. During the last decade, within the Park's annual renewal/rebuilding program, the food stand on that location was demolished and a new food stand proposed. On an early March day, as construction machinery rolled into the Park, one of the owners noticed a yellow removal tape around the spruce tree. "What, cut down the tree? Never! Stop! Let's see the plans again. Back to the drawing board." At considerable expense, the site was reconfigured, the serving area made smaller, the preparation space moved and the tree saved. The largest plant growing near your house is probably a tree. It might be a maple, oak, pine or palm. All trees have many of the same parts as the plants that grow in your garden-only much larger.

Word Bank: seed, trunk, leaves, roots, bark.

The riddles tell about the jobs of the tree parts. Use the parts listed in the Word Bank to solve each riddle.

Green and flat
Or needle-like
We make food by day
And rest at night.

I am _____.

From roots to branches,
Short or long,
My tough wood
Keeps me tall and strong.

I am _____.

Scattered by wind
When breezes blow
I'll make a new tree
When I sprout and grow.

I am _____.

Thin like hair,
Or thick and round,
We hold the tree
Firmly in the ground.

I am_____.

Rough or smooth,
A very tough cover,
I keep out insects,
Fire and weather.

I am _____

Homework: Why is most bark rough with scales or cracks? Are there any trees with a smooth bark?

WATER, WATER, EVERYWHERE

Question

How much usable water is a part of each ecosystem?

Materials needed

- six 1 gallon (4 L) jugs filled with water
- six clear 16 oz (500mL) containers
- one 1/2 gallon (2L) jug half-filled with water
- masking tape
- measuring spoons
- measuring cup

Procedure

1. The water in the jugs represents all the water in the world.

2. Have students locate & develop a list of places where water is found: oceans, ice/glaciers, ground water, freshwater, inland seas/salt lakes, atmosphere and rivers.

3. Using masking tape, label each 16 oz container for each category except oceans.

4. Using the water in the jugs, pour the indicated amounts into each labeled container.

Locations of natural water	Proportionate amount
ice/glaciers	2 cups (500mL)
ground water	8 tbsp (120mL)
freshwater lakes	1 tsp (5 mL)
inland seas/salt lakes	1 tsp (5mL)
atmosphere	1/4 tsp (1.25 mL)
rivers	1/16 tsp (.26 mL)

5. The water remaining in the jugs, about 97 cups (24L) represents the water in the oceans.

Discussion

- Name and locate bodies of water on a world map
- Identify bodies of water in your community
- Brainstorm ways to save water
- How much fresh water is available for human use?

Note: Canobie Lake is the natural water supply for the town of Salem, N.H. Because it is a public reservoir, no swimming is allowed. It is estimated that 1,000,000 gallons of water are removed daily for human consumption. Canobie Lake Park supports water conservation.

SOME OF THE WATERS OF THE WORLD

Oceans

Atlantic:	Second largest ocean, dividing Europe and Africa from the Americas
Pacific:	Largest ocean with thousands of islands. Deepest point of the world, the Marianna Trench, over 36,000 feet (11,000 meters) deep
Indian:	About 28,356,000 square miles from Africa to Australia
Arctic:	Smallest of the oceans. Shallowest of the 4 oceans. Covered with an ice pack over the North Pole.

Ten Rivers

Nile:	Longest river in the world
Volga:	Longest river in Europe
Mississippi:	Drains the entire plains and Midwest of United States
Missouri:	Joins with the Mississippi, 2,348 miles long
Huang:	Longest river in China
Mackenzie:	Longest river in Canada
Amazon:	2nd longest river in the world. Largest flow in the world
Zaire:	Runs through the rain forest in Central Africa
Tigris/Euphrates:	In Mid East, site of several ancient civilizations

Ten Lakes

Caspian:	Largest salt water lake in the world
Baykal:	In Commonwealth of Independent States (Russia), the deepest
Superior:	Largest of the Great Lakes of U.S. and Canada
Victoria:	Largest in Africa and source of the Nile
Titicaca:	In South America, highest lake in world (12,507 feet)
Huron:	2nd largest Great Lake between U.S. and Canada
Eyre:	Largest lake in Australia. Below sea level
Michigan:	Great Lake-borders Chicago, Ill.
Aral Sea:	This Russian lake is getting smaller every year
Tanganyika:	Between Zaire and Tanzania in Africa

Ten Seas, Bays, and Gulfs

Gulf of Mexico:	Borders Mexico, Texas and Florida
Mediterranean Sea:	Surrounds Greece, Italy & other parts of southern Europe
South China Sea:	East of China. Largest sea in the world
Bering Sea:	Borders the south of Alaska
Caribbean Sea:	Deepest sea, on average, in the world
Hudson Bay:	In northern Canada
Persian Gulf:	In Mid East, between Saudi Arabia and Iran
Ross Sea:	Off the coast of Antarctica
Sea of Japan:	West of Japan, east of Korea and Russia
Red Sea:	Connected to the Mediterranean by Suez Canal between Asia and Africa

YOU ARE WHAT YOU EAT

You are not made out of pickles and carrots. The food you eat must be digested before your body can use it. Digested food is changed into nutrients which help your body grow and give you energy.

Word bank: proteins, vitamins, minerals, carbohydrates, water, fat

On a separate sheet unscramble the following words: 1) netroips, 2) afts, 3) ralmenis, 4) ratew, 5) timnivas, 6) droracbaytesh

Match each nutrient from the word bank with its function.

Needed: Nutrient to deliver food & waste

I am_____

Wanted: Muscle builder & body repair worker

I am _____

Needed: Growth and good health helper

I am_____

Needed: Nutrients for many jobs, including bones and teeth

I am_____

Needed: Quick energy supplier

I am_____

Wanted: Nutrient to store energy

I am _____

MUNCH, MUNCH-NIBBLE-CRUNCH

Do you have a bad case of the munchies, crunches or nibbles? Some snack food is good, others just terrible. Foods lower on the food pyramid are better for you because they contain the smallest amount of fat. The Food Pyramid has 6 sections with bread, cereal, pasta and rice as the wide base, with fruits and vegetables equal in value and next, milk, yogurt, cheese along with meat, fish, eggs, poultry, dry beans and nuts complete the 3rd level. Fats, oils and sweets remain at the top of the pyramid and should be eaten in moderation. Take a "Snackers's Survey" by assigning a numerical value to each snack as to taste and nutritional value. 1=lowest,10=highest. The snacks are apples, cheese, cookies, oranges, carrots, chips, cake, candy, bagel, popcorn, beef jerky, and pretzels.

Homework: What do these words mean?

Dextrose, Sucrose, Fructose, Syrup

BACTERIA PROTISTS MONERANS

Some scientists consider bacteria and blue-green algae to be the simplest plants. Others call them protists. Still other scientists call them monerans. Whatever you call them, they are the simplest organisms and have many common characteristics.

Bacteria can be made of just one cell or of many cells strung or grouped together. Like the algae, their chromatin is not covered by a nuclear membrane. All other cells have this cover around their chromatin. One way that bacteria are different from the blue-green algae is the way they get their nutrients. All algae make their food through photosynthesis. Most bacteria are saprophytes. They eat dead plant and animal matter and are decomposers which free nutrients into the soil and air. Some bacteria make their own food. Others are parasites. They live off another living thing or host and may cause disease in plants and animals. Many diseases such as botulism (food poisoning) and tetanus are caused by toxins or poisons these bacteria make. Other bacterial diseases are scarlet fever, tuberculosis, and whooping cough.

Three (3) ways to fight the spread of bacterial diseases are:

1. Good hygiene
2. Pasteurization (heating milk & other food to destroy bacteria & toxins)
3. Antibiotics - medicines made from toxins which kill other bacteria

On a separate sheet answer the following questions.

1. Name 3 ways that bacteria get their food.
2. How are bacteria and blue-green algae alike? How are they different?
3. Name 2 diseases caused by toxins that bacteria make.
4. Name 3 ways to prevent or cure bacterial disease.
5. What is the antibiotic streptomycin made from?
6. How does this antibiotic work to kill bacterial infection?
7. Define the following:
   - nuclear membrane
   - saprophyte
   - parasite
   - hygiene
   - botulism
   - antibiotic
   - pasteurization
   - decomposer

Homework: Name an antibacterial spray used in the home and workplace.

FUNGI MOLDS MUSHROOMS YEAST

Some scientists call fungi protists, others call them plants, and still others put them in a separate kingdom from the plants and protists. They all have certain characteristics; the most important is that they do not have chlorophyll and cannot make their own food. They must live as saprophytes or parasites like many bacteria.

Fungi are non-vascular plants because they do not have tubes for food and water transportation. Food and water must pass from one cell to the next to reach all of the plant.

There are 3 types of fungi: Molds, Mushrooms, and Yeast. Molds are made of many threadlike structures called hyphae. When a bread mole spore falls upon a piece of bread, it begins to grow a hypha. The hydra digests the bread; then it absorbs this digested material as food. Some hydra grow into the air and make a spore case filled with spores. These can be spread by air to make new mold. Besides being decomposers, molds are used in cheese and to make penicillin.

Mushrooms, toadstools, puffballs & shelf fungi have hyphae that extend into soil or decaying matter. Even experts can't distinguish some poisonous from non-poisonous mushrooms. Don't eat any found in the wild.

Yeast are single-celled fungi important in making bread and wine. As yeast consumes sugar in the dough or the fruit juice, it gives off carbon dioxide gas and alcohol. Bread is made when dough traps the gas and the alcohol escapes in the oven. Wine retains the alcohol. Yeast ferment sugar in this way only when there is no oxygen around.

Parasitic fungi include those that cause ringworm and athlete's foot in humans. Other are rusts, smuts, and blights that affect plants. Dutch elm disease is killing our elm trees. This is a fungus transmitted by beetles. The Irish potato famine of the 1840's was caused by a potato blight.

On a separate paper write out the definitions of the following words: chlorophyll, hyphae, mutualism, antibiotic, spores, carbon dioxide, parasites, non-vascular, spore case, lichens, ringworm, yeast, saprophytes

Homework: Name the only fungi found at Canobie Lake Park. Where did you find it?

RHODODENDRONS

It seems fitting to close this manual with a short study of the rhododendron, as this material will be used by school children visiting the park in June when the flowering shrub is at its peak.

The rhododendron stands out at Canobie Lake Park. It can be found everywhere - against the north wall of the rest rooms near the Giant Sky Wheel, on the walkways to Old Canobie Village, in the large planter around the tree north and west of the Trellis food stand, at the Canobie Express Train Station across from Skee Ball, along the secondary north-south walk behind Kiddie Land and in numerous new plantings. It requires an acid soil. Many of these plants are among the original plantings of 1902. They have survived well and are given wonderful care.

It blooms in all different colors- purest white, deepest red, violet, and every shade of pink in between. The rhododendron is an evergreen which never loses its leaves. The leaves are tough as they survive in great wind, hot sun and heavy rain and snow . Rhododendron leaves are oval shaped with a waxy upper surface to prevent them from drying out. Some species also have a felt-like down on their undersides to hold moisture and to ward off insects.

Moreover, if you are a world traveler you might visit Nepal in the spring where the rhododendron is a native species. To stand on a hillside facing the Himalayas - to see the blossoms framed by the snow-covered mountain peaks and a clear mountain sky - will take your breath away.

However, we live in the here and now. The rhododendron is the special flower of Canobie Lake Park. Look for it, enjoy it; please don't pick it!

JUST FOR FUN PUZZLES AND ACTIVITES

Vocabulary Challenge

Put the list of Canobie's Green Circle rides in alphabetical order

Canobie 500	Antique Carouse	Flower Power	Ocean Trip
Antique Cars	Sky Ride	Jungle Bounce	Alpine Swing
Mini Dino's	Jr. Sport Cars	Sea/Land Rescue	Tiki Maze
Kiddie Canoes	Mini-Scooters		

Unscramble the list of Canobie's Blue Square rides

LLABNONNACEEKNAY	MAERDSICNIVAD
SLUOSTSOLFOENIM	TUOHS&TSIWT
PUDNUOR	RETSAOCNOGARD
RALLIPRETAC	YTRAPAITNOTSOB
WOBNIAREHTREVO	RETAKS
SPUCYZARC	SRETSOORYDWOR
HSALPSREBMIT	SMEGDOD
LEEHWYKSTNAIG	EMULFGOL

DAVINCI'S DREAM	YANKEE CANNONBAL	SKATER	BOSTON TEA PARTY
LOG FLUME	TIMBER SPLASH	GIANT SKY WHEEL	CRAZY CUPS
ROUND UP	MINE OF LOST SOUL	DODGEMS	TWIST & SHOUT
ROWDY ROOSTERS	CATERPILLAR	OVER THE RAINBOW	DRAGON COASTER

Using the same list above fill in the missing letters!!

1.) G**NT SKY WH**L
2.) T*MB*R SPL*SH
3.) B*ST*N T** P*RTY
4.) *V*R TH* R**NB*W
5.) TW*ST & SH**T
6.) R**ND *P
7.) DR*G*N C**ST*R
8.) CR*ZY C*PS
9.) D*DG*MS
10.) L*G FL*M*
11.) M*N* *F L*ST S**LS
12.) D*V*NC*'S DR**M
13.) Y*NK** C*NN*NB*LL
14.) SK*T*R
15.) R*WDY R**ST*RS
16.) C*T*RP*LL*R

There are many adjectives to describe the rides in our park. Try to find all 15 in the puzzle below!

M M I G H W G K U V D P W U A A R P H I
A R N B P G F S T U N N I N G N C W K E
S T T O E W A A B H P U G P L H F I U W
T K B E R E A T H T A K I N G X P L I W
O H N Y V L X C R I H C M T U Q T D M E
N O S A T W O N D R O U S Q F V F V P N
I K E M H A J I F E Y K U N C Q F I R C
S R Z U N T H R I L L I N G P O Q K E H
H G T S Y L V N M H C F D P M O Z R S A
I Z D I Z R A M A Z I N G E J L C P S N
N C J N I G J S E N S A T I O N A L I T
G B O G E X C I T I N G P N J X I G V I
I V D J R T S U S P E N S E F U L V E N
J B Y M N F U I F S X I H K C I B E Y G
K A X G M J P D Z K Y Y F H Z X I D A K
G E V S P E E D Y L F J D B B D I J L G

THRILLING
SENSATIONAL
ASTONISHING
AMUSING
BREATHTAKING
ENCHANTING
EXCITING
IMPRESSIVE
WILD
AMAZING
STUNNING
SPEEDY
WONDROUS
INTENSE
SUSPENSEFUL

COMPLETE THIS ACTIVITY USING THE KEY BELOW

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Y L D C E S P B G M U F X R J T H O V A Z K I Q N W

CTSWYDWFCNETJ
DNTUADKGF
BRILBKJE
PWJHENFGBRFQ
FVTPEN
CRCIEJ
PZWFPFQRKP
ATYVEEDTYYRYHTBB
NRZCANRRFPENF
JWYERLBRFPFRKBF
HRFPRYPETGNPA
CNTIRYDRTFPEN
RSENPQENTWYHRZ
NRKYCKG
DTPENGWBBTN
IWTYPFVAZQEEB

DAVINCI'S DREAM
LOG FLUME
ROUND UP
ROWDY ROOSTERS
YANKEE CANNONBALL
TIMBER SPLASH
MINE OF LOST SOULS
CATERPILLAR
SKATER
GIANT SKY WHEEL
DODGEMS
OVER THE RAINBOW
BOSTON TEA PARTY
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DRAGON COASTER