

TIME OUT!

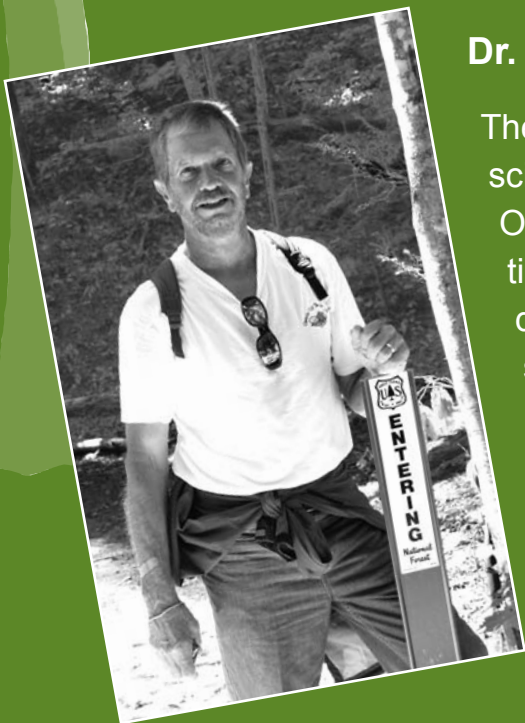
How Much Time Do Kids Spend Outdoors?

MEET THE SCIENTISTS!



Dr. Lincoln Larson, Social Scientist

My favorite science experiences involve traveling to cool places and learning new things. My work has taken me around the world to places like Alaska, Africa, and the Amazon. I'm constantly trying to discover ways to help people understand, appreciate, and interact *sustainably* with their natural environment.



Dr. Ken Cordell, Social Scientist

The thing I like most about being a scientist is discovering something new. One recent discovery was how much time kids spend outdoors and what kids do when they go outdoors. Our team of scientists found some surprising new things about kids and the outdoors. You will also discover what we found when you read this article. I wonder whether what we found will be surprising to you too!



Dr. Gary Green, Social Scientist

My favorite science experience was visiting the Particle Accelerator at CERN (The European Organization for Nuclear Research) on the French-Swiss border. During the trip, I got into an elevator and dropped 100 feet below the surface of the ground. When we got out of the elevator, I saw a magnet the size of a house and a 27-kilometer looped tunnel (figure 1). The scientists operating the accelerator fired protons and electrons inside the looped tunnel. The scientists at CERN study nature's building blocks; they explore what everything is made of. It was pretty cool to see it in action.

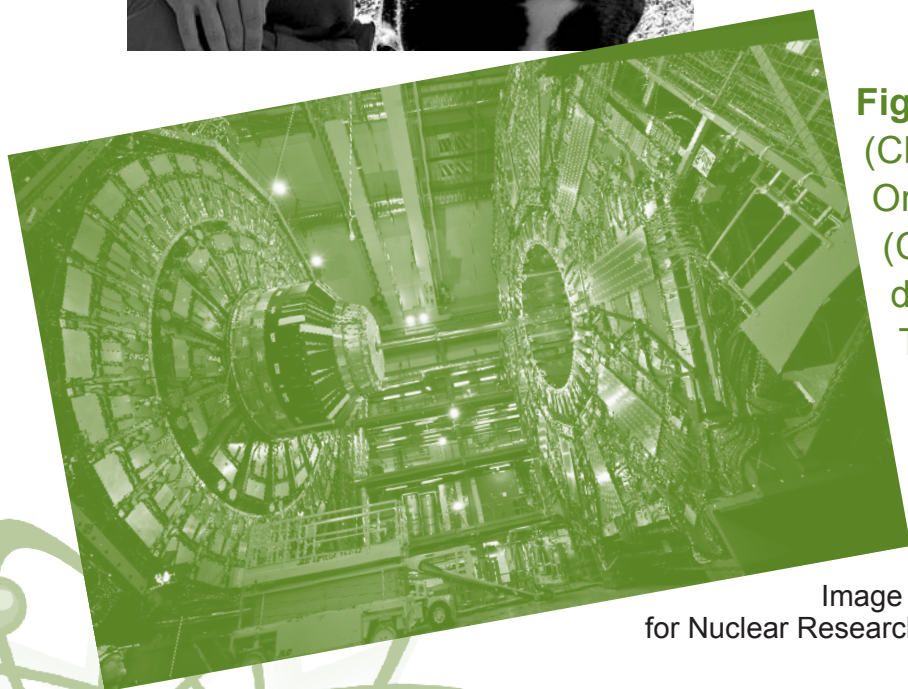


Figure 1: The Compact Muon Solenoid (CMS) detector at the European Organization for Nuclear Research (CERN) helps scientists study different parts of proton collisions. The CMS has many different layers. One of these layers is a magnet that collects particles released during proton collisions. Learn more by visiting <http://www.cern.ch>

Image courtesy of the European Organization for Nuclear Research (CERN).

Number Crunches

How many miles is 27 kilometers?

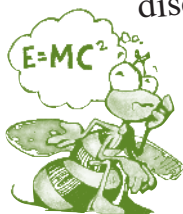
Hint: One kilometer is equal to 0.62 miles.

Thinking About Science

How can you tell if something has changed over time? If you want to know, for example, how tall you have grown since you were 6 years old, what information do you need? If you said that you need to know how tall you were at age 6, you are right! Without a beginning point with which to compare later measures, it is impossible to accurately track change. Scientists call this beginning number a **baseline**.

All of us use baselines. Let's say your height was not recorded at age 6. How would you know whether you have grown since that age? You might have to begin with your height at age 7. Or, you could take the average of your height at age 5 and age 7, although an average would not be as accurate as having your actual height at age 6. Without a baseline, scientists, or you, cannot say for sure whether or how much something has changed.

The scientists in this study were interested in how much time kids spend outdoors. They wanted to know how the amount of time has changed over the years. The scientists discovered, however, that



a baseline had not been established. In this study, therefore, they wanted to establish a baseline for how much time kids like you spend outdoors.



Glossary words are defined
on page 22.

Thinking About the Environment

What activities do you think about when you think about spending time outdoors? Some people think of doing things such as biking, camping, fishing, swimming, or bird watching, as well as many other activities (figure 2). Activities like these may benefit people. Some scientists believe that spending time outdoors may help people be healthier. Spending time outdoors may also help people develop an appreciation for nature and



conservation. Some scientists believe that spending any amount of time outdoors is good for kids, and certain activities may provide more benefits than others. Studies have shown that outdoor physical activities are especially important for kids trying to maintain an active and healthy lifestyle.

Figure 2. Using binoculars while birding (also known as bird watching) can help you see birds up close and personal! Seeing birds up close helps you identify them based on their features, such as beak shape, body size, and color. What benefits do you think these kids are getting from this activity?



Introduction

Spending time outdoors may have positive benefits for people of all ages, including kids (figure 3). Because of these benefits, getting kids outdoors has become a main goal for many groups and organizations. During the past several years, however, scientists have noticed something interesting. Some research has shown that kids are spending less time outdoors than in previous years. Few of these research studies, however, looked at kids' time outdoors across the entire United States. In addition, many of these studies focused on how much time kids spent doing certain activities. These studies did not focus on how much time kids just spent outdoors overall, regardless of what they were doing.

People have looked for reasons why kids might not be going outdoors as much as they once did. One possible reason is the increasing use of electronic media and technology, such as the Internet and video games.

Some researchers point out, however, that kids may be using cell phones and other electronic media outdoors. These researchers wonder how much media use affects the amount of time kids spend outdoors. The effect that electronic media and technology have on kids' time outdoors, therefore, is not known.

You may recall that previous studies had not looked at kids across the entire Nation. These studies also did not focus on time spent outdoors but on nature-based activities done outdoors. The scientists in this study wanted to do research to fill in these gaps.

Figure 3. Hiking is one way to explore the great outdoors and build physical strength.



To answer their question of how much time kids are spending outdoors, the scientists first needed to establish a baseline for understanding change in the amount of time kids spend outdoors. In addition to creating a baseline, the scientists wanted to understand what kids do outdoors.

The scientists called their study the National Kids Survey. The National Kids Survey examined three main areas. These areas are—

1. The amount of time kids spend outdoors.
2. The outdoor activities in which kids participate.
3. The reasons kids are not spending more time outdoors.

The scientists wanted to know how the amount of time spent outdoors varies among kids from different **demographic** groups. The scientists hoped that this study would help other scientists. They also wanted to help **recreation managers** understand kids' time outdoors.



Methods

The study took place from September 2007 to August 2009. The scientists surveyed 1,450 kids ages 6–19 across the United States. It would have taken too much time and money to interview all of the millions of kids across the country. Because the scientists could not ask all kids in the United States their questions, they used a **random sample** of kids from across the country.

A computer generated a list of random telephone numbers. Calling random telephone numbers helped ensure the results weren't **biased** (figure 4). The scientists asked to interview the family member age 6–19 with the most recent birthday. Kids between the ages of 16–19 were interviewed directly. Younger kids between the ages of 6–15 had a **proxy** speak for them (see the sidebar to find out what a proxy is).

The scientists and other partners at the University of Tennessee asked the survey participants questions about time spent outdoors. These questions



What is a proxy?

Sometimes social scientists cannot get answers directly from the individuals they are interested in studying. For example, in this survey the scientists could not interview kids younger than 16 years old. Scientists have to ask parents, guardians, or older siblings questions to get information about young people. A person acting on behalf of another is called a proxy. Have you ever had to act as a proxy for another person? If so, why did you have to act as a proxy? Share this experience with your class. What is one advantage of having a proxy? What is one disadvantage?



included the amount of time kids spent outdoors during the past week, common outdoor activities, and reasons for not spending more time outdoors. To learn more about the individual, the scientists also asked for demographic information, such as the individual's gender, age, and **ethnicity**.



Figure 4. People who conduct telephone interviews usually have a script they follow so they ask the same questions of each person they speak with.



Why would the scientists not want the results to be biased?
How might the results of the survey be affected if the research were biased?

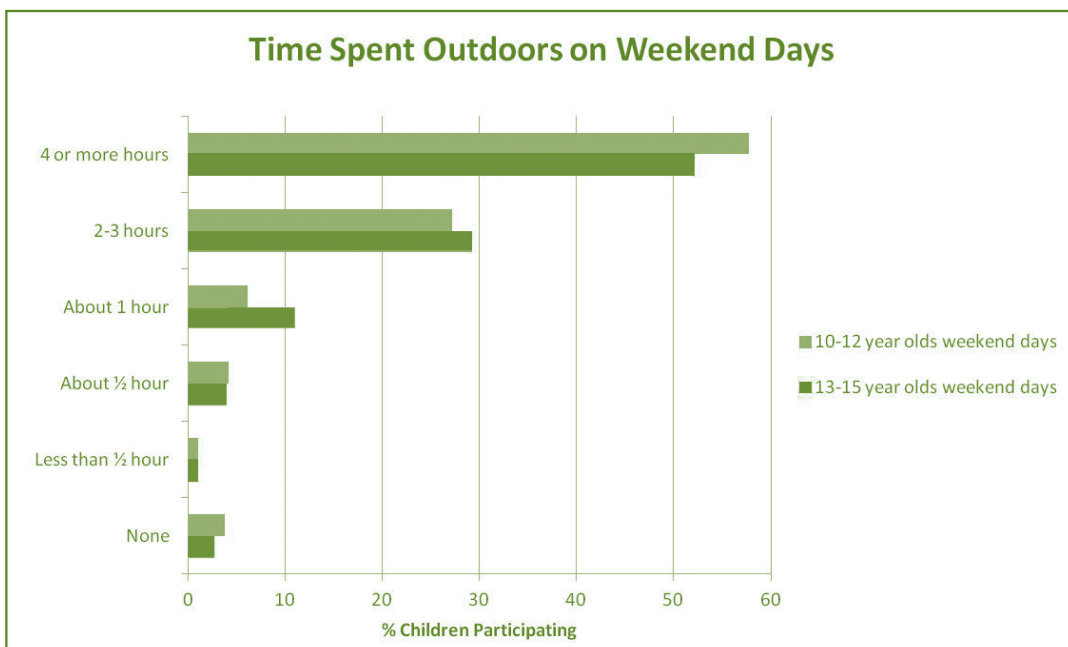
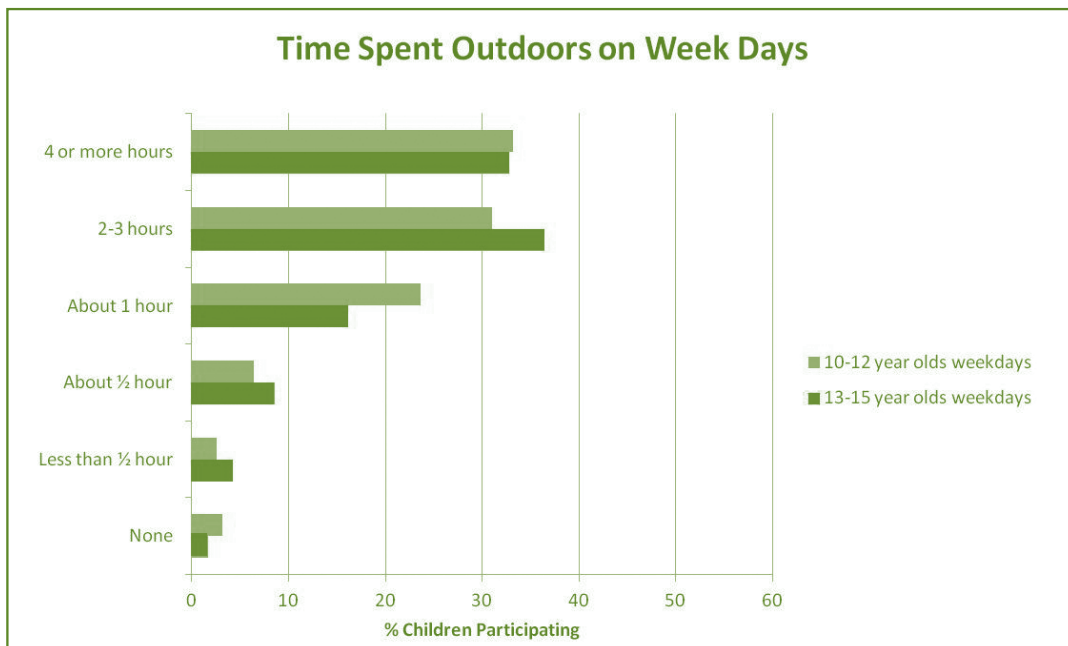
What did the demographic information enable the scientists to compare?

Why did the scientists have to speak with a proxy for kids under 16 years old?



Findings

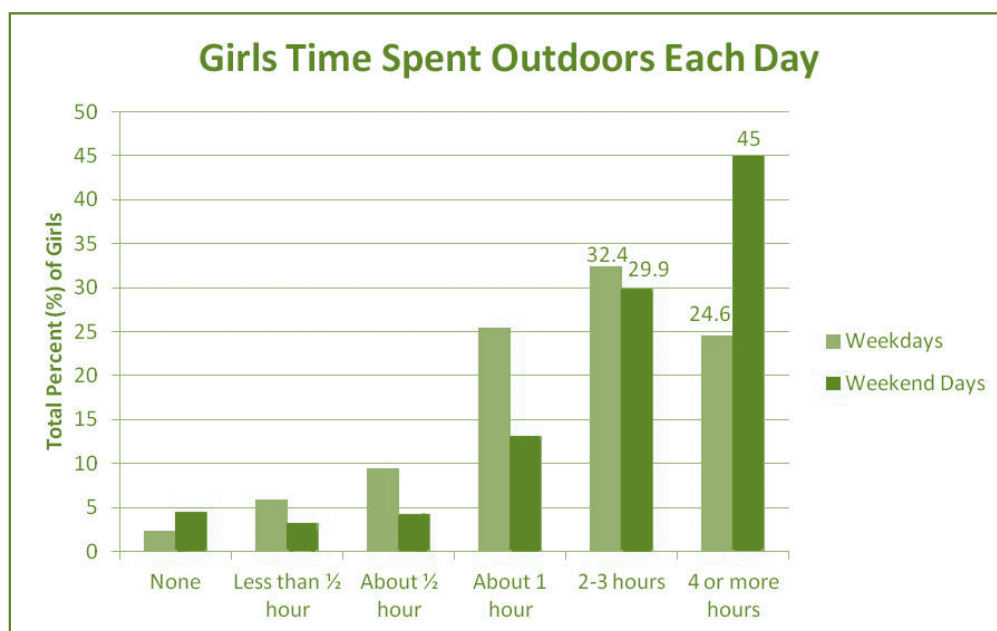
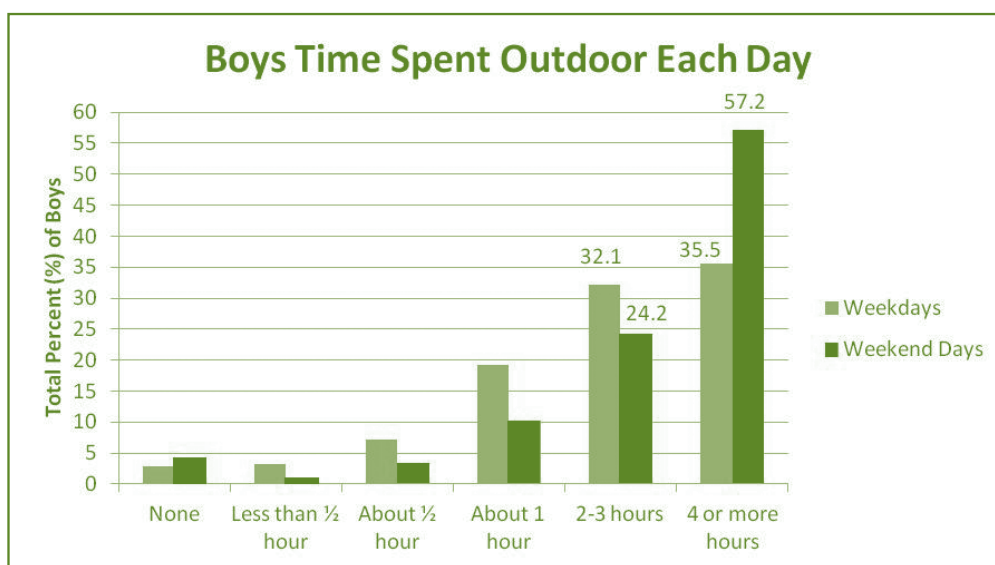
Most kids in the survey, regardless of their age or gender, spent time outdoors daily. In fact, more than 50 percent of kids surveyed spent 4 or more hours outdoors on weekends. Kids ages 6–12 spent more time outdoors on weekends than kids ages 13–19. Kids ages 13–15 spent more time outdoors on weekdays than 10- to 12-year-olds. Less than 5 percent of kids ages 10–15 reported spending no time outdoors (figures 5a and 5b).



Figures 5a and 5b. Most kids ages 10–15 spent at least some time outdoors.

Overall, boys spent more time outdoors than girls. Both boys and girls, however, spent more time outdoors on the weekends than during the week (figures 6 and 7).

On weekdays, scientists found that 67.6 percent of boys spent 2 or more hours outdoors, whereas only 57 percent of girls spent 2 or more hours outdoors. On the weekends, 81.4 percent of the boys spent at least 2 hours outdoors per day compared with 74.9 percent of girls.



Figures 6 and 7. Many of the boys and girls surveyed spent at least 4 hours per day outdoors on the weekend.

The most common outdoor activities for kids of all ages were:

- Playing or just hanging out (figure 8a).
- Biking, jogging, walking, skateboarding, etc.
- Listening to music, watching movies, or using electronic devices (figure 8b).



Figure 8a. Hanging out with friends is an activity enjoyed by many kids of all ages.



Figure 8b. Austin Hernandez (left) and Teddy McClellan (right) enjoy spending time outside. According to Austin, "We like to text, play stuff outside, and talk on the phone."

Number Crunches

How did the scientists determine the percentage of boys and girls that spent at least 2 hours per day outdoors?

Use the charts in figures 6 and 7 to find out. Hint: Look at the bars for "2–3 hours" and "4 or more hours."

Nature-based activities, such as bird watching and wildlife viewing or hiking, camping, and fishing, were not as common as other activities (figures 9a and 9b).

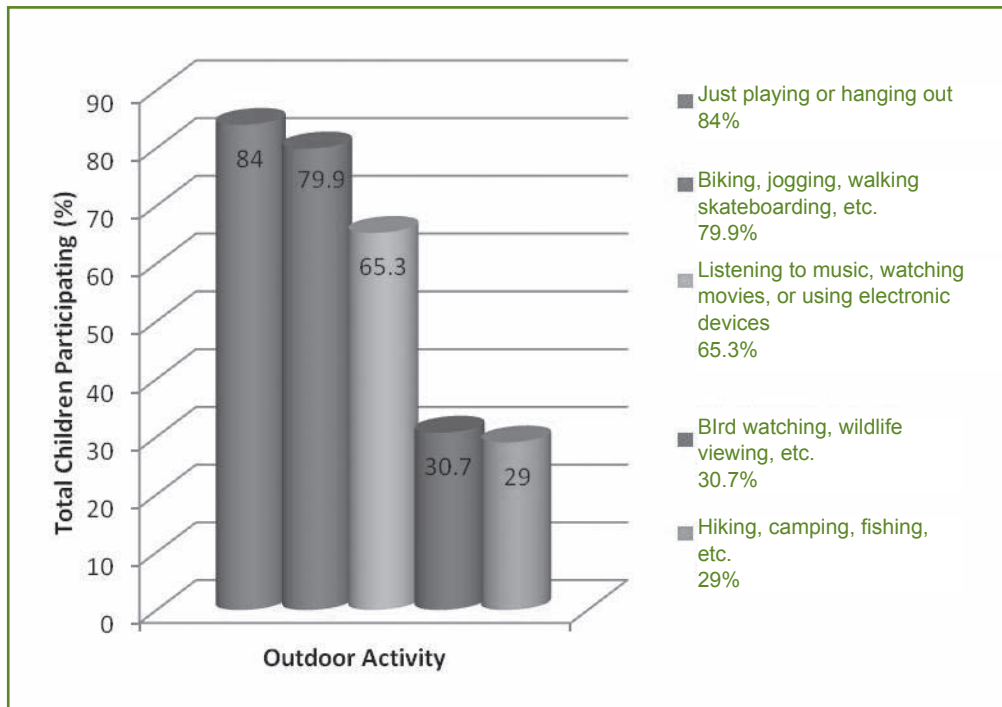


Figure 9a. Nature-based activities were not as popular as other activities.

Figure 9b. Biking is popular with many kids.



Younger kids played or hung out and participated in physical activities more than older kids. Older kids used electronic devices outdoors more than younger kids. Kids ages 13–15 played or practiced team sports more than other age groups, and they participated less in reading or studying outdoors. Nature-based activities were more common for 10- to 12-year-olds than for 13- to 15-year-olds.

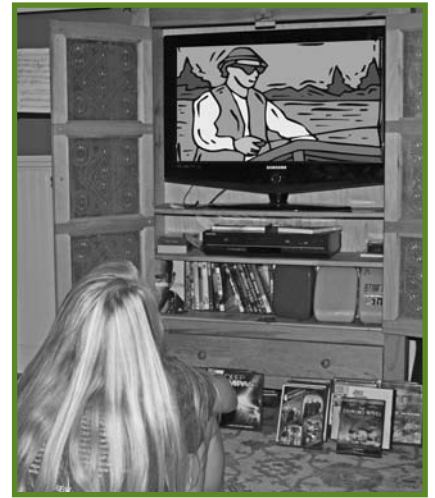
Boys were more likely than girls to go outdoors to play or hang out; take part in team sports; and ride motorcycles, ATVs (all-terrain vehicles), or other off-road vehicles. Girls were more likely to be outdoors reading or studying.

The main reasons kids did not spend more time outdoors were—

- Listening to music, creating art, or reading indoors.
- Watching TV, DVDs, or playing video games indoors.
- Using electronic media such as Internet and texting indoors.
- Participating in indoor sports.

Watching TV, DVDs, or playing video games indoors was the most common reason boys did not spend more time outdoors.

These activities were also common reasons 10- to 15-year-old boys and girls did not go outdoors. For girls, listening to music, creating art, reading, playing on the Internet, and text messaging indoors were the most common reasons for not going outdoors.




Technology also affected the amount of time kids spent outdoors. Kids with either a TV or computer in their room (or both) spent less time outdoors on the weekend than kids who did not have a TV or computer in their room.




Number Crunches

What is the difference in the percentage of kids playing or just hanging out and the percentage of kids hiking, fishing, and camping?

Hint: Use the graph in figure 9a.



Are you surprised by the results of the study? How do they compare with you and your friends? Discuss with your class whether you believe these results are similar to or different from your time outdoors.



Do you think technology affects the amount of time you spend outdoors each day? Estimate how many hours a day you spend indoors watching TV or DVDs, playing video games, or spending time on the computer. Compare these hours with how many hours a day you spend outdoors.

Create a profile!

Reread the findings and create three profiles describing time outdoors for kids 13–15 years old. You should create a profile for all 13- to 15-year-olds, for 13- to 15-year-old girls, and for 13- to 15-year-old boys. Your profiles can be written in paragraph form. For example, you might write, “Almost all 13- to 15-year-olds spend some time outdoors. Boys spend more time outdoors than girls. When they are outdoors, most 13- to 15-year-olds do things like hang out, bike, jog, skateboard, or walk. They also listen to music, watch movies, and use electronic devices when they are outdoors.” Writing these profiles will help you to better understand the findings. The profiles will also help you to determine how well the findings match your own experience.

Discussion

The results of the National Kids Survey suggest that kids go outdoors more than some people believe. Previous surveys have tended to focus on specific outdoor activities, such as camping, fishing, hiking, and hunting. This survey showed that if you widen the set of outdoor activities to include general activities, kids spend more time outdoors than previously thought.

Older kids participate in outdoor recreation activities less than younger kids. Scientists believe this may reflect the lifestyle of older kids, who have less free time and more responsibilities, such as school or work. Older kids might also be more likely to participate in indoor social activities. The scientists suggest that recreation professionals could encourage older kids to spend time outdoors through programs that focus on social interactions.

The indoor use of electronic devices such as the Internet, TV, or video games, was one of the main reasons given for kids not spending more time outdoors (figure 10). Some people are concerned that technology and electronic media will continue to affect the amount of time kids spend outdoors. Technology and the outdoors, however, can be combined through activities such as geocaching. (Find out more about geocaching in the sidebar.)

Surveys like the National Kids Survey can be useful in helping to understand kids' time outdoors.

Organizations involved in getting kids outdoors can use this information to better understand how kids spend time outdoors. Such information can help them plan outdoor activities and experiences for kids across the country.

What is geocaching?

Geocaching is an outdoor treasure hunting activity, similar to a scavenger hunt. Players try to locate hidden containers, called geocaches, using Global Positioning System (GPS) devices. Inside those hidden containers, players can find things others have left for future geocachers.

Conduct your own research on geocaching to find out more!



Figure 10. Spending time on a computer may limit the amount of time kids spend outdoors.



Should kids be encouraged to spend more time outdoors? Why?

Do you spend more or less time outdoors than you did when you were younger? Why?

Glossary

baseline (bās līn): A baseline is a standard used in research studies against which all later changes or studies put into practice will be measured.

biased (bī əst): Tending to produce one outcome more frequently than others in a statistical experiment.

conservation (kān sər vā shən): The care and protection of natural resources such as forests and water.

demographic (de mə gra fik): Physical characteristics of people, such as their age, sex, or race.

ethnicity (eth ni sə tē): Quality or connection describing a group of people who have the same language, background, culture, etc.

particle accelerator (pär ti kəl ak se lə rā tər): A device that uses electromagnetic fields to move charged atoms at high speeds and contain them in beams. Particle accelerators help scientists study atoms and particles. The first TV set produced was a simple form of an accelerator. The particle accelerator at CERN, known as the LHC, is the world's largest and fastest particle accelerator.

proxy (prāk sē): A person authorized to act or speak for another.

random sample (ran dəm sam pəl): A sample in which a participant is selected purely by chance, with every participant having an equal chance of being selected.

recreation manager (re kē ā shən ma ni jər): A person who takes specific actions to manage the activities and resources at a recreation area, such as a public park.

sustainable (sə stā nə bəl): The quality of surviving or being maintained over a specific time period.

Accented syllables are in **bold**. Definitions and marks are from <http://www.Merriam-Webster.com>.

Adapted from Larson, L.R.; Green, G.T.; Cordell, H.K. 2011. Children's time outdoors: Results and implications of the National Kids Survey. *Journal of Park and Recreation Administration*. 29(2): 1–20. <http://js.sagamorepub.com/jpra/article/view/1089/1058>



If you are a trained Project Learning Tree educator, you may use Activity 46, "School Yard Safari," as a resource.