

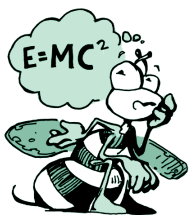
Slip Sliding Away

Who Goes Skiing and Snowboarding in America?



Meet Dr. Ken Cordell:

“I like being a scientist because my job is interesting and because people use the results of my work in planning for the future. As an added bonus, the pay is good which rewards me for the years I put into college studies.”



Thinking About Science...

Scientists can study all kinds of topics and still be interested

in the natural environment. This study focused on people and is a type of science called social science. Social science is concerned with the feelings and behavior of people. To find out about people's behavior, social scientists can observe them or ask them questions. In this study, the scientist asked a lot of people a series of questions about what they do out of doors in their free time.



Dr. Ken Cordell



Thinking About the Environment...

What do you need to have to go downhill skiing? Well, of course—you need mountains and you need snow! Not every place has these two **natural resources**. Places that have mountains and snow attract visitors who spend a lot of money doing things like skiing. This can help the local **economy** of an area by providing jobs that support activities like skiing. Skiing and other outdoor activities depend upon a healthy and beautiful environment. It is important to realize that the environment can help the economy, but that it must also be cared for. If we take care of our environment, it can continue to provide resources for human use and enjoyment into the future.

Introduction

Do you know anyone who has gone snow skiing or snowboarding in the past year? Chances are that you do. It might even be you! Over the past 30 years, outdoor activities like skiing have been growing in popularity, with more and more people going outdoors to have fun. Public agencies, like the USDA Forest Service, and private companies, such as ski resorts, need to know how many people do activities like skiing, and how many more might like to do these activities in the future. If they estimate that more peo-

ple will go skiing, for example, they can be better prepared to provide the things people need to go skiing. Every 10 years, the USDA Forest Service studies lots of **outdoor recreation** activities, and reports whether the number of people doing each of those activities is rising or falling. Dr. Cordell, the scientist in this study, wanted to know how many people across the United States went downhill skiing and snowboarding in the previous year.

Reflection

- What do people need to have to go downhill skiing? (Hint—They need more than equipment, like skis and warm jackets. They also need snow, a warm ski lodge, and someone to operate the ski lift.)
- What might happen if agencies and companies did not know how many people might want to go skiing?
- If you were the scientist, how would you find out how many people went skiing or snowboarding last year?

Methods

Dr. Cordell used a **questionnaire** to find out how many people went skiing and snowboarding in the last year. Because he could not ask everyone in the United States his questions, he had to use a sample of people across the country. So that his sample

Glossary:

average: (av'er ij) the arithmetic mean; about midway between all of the values

bias: (bi'es) a personal judgment that might introduce error into a research project

demographic: (dè'me graf'ik) portraying the general characteristics of a population of people

economy: (i kon'e mê) a system relating to the production, distribution, and consumption of goods and services

estimate: (es'te mât') to determine approximately the size or extent of something

income: (in'kum) the amount of money a person makes

natural resource: (nach'er el rê'sôrs) goods occurring in nature that are used by humans

outdoor recreation: (out'dôr rek'rê â'shen) activities done out of doors for fun

questionnaire: (kwes'che nâr) a set of questions used to obtain information from people

sample: (sam'pêl) a representative part of a larger whole

trend: (trend) a numeric representation of a change in quantity over time

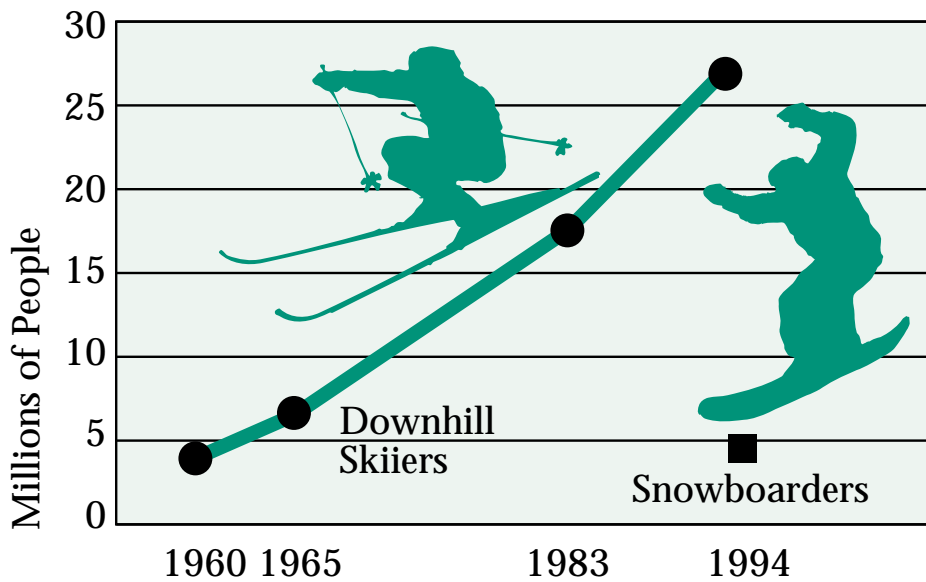


Figure 1. Growth of downhill skiing and snowboarding.

would not be **biased**, a computer generated a list of numbers that were used as telephone numbers. Dr. Cordell telephoned people in every State in the United States and asked them questions about whether or not they went downhill skiing or snowboarding. If they had done either activity, he asked them how many times they had gone in the past year. To know more about them as people, he asked for **demographic** information, such as their sex, age, occupation, and **income**.



Reflection:

- Why should a social scientist guard against being biased when choosing the people to

ask questions of? What would happen to the results if the research were biased?

- Why do you think the scientist wanted to know the demographics of people who went skiing or snowboarding?

Results

The scientist found that 8.4 percent of Americans over age 16, or 16.8 million people, went downhill skiing in the previous year. He also found that 2.3 percent of Americans, or 4.5 million people, went snowboarding. On the **average**, skiers went skiing 7.5 days a year. If you add up all the days that Americans went skiing, you get 126.5 million days! Dr. Cordell discovered that 74 percent of all skiers really love to go skiing. These people also ski often. The other 26 percent of skiers do not go skiing very often. The people who love to go skiing and snowboarding the most are under age 50.

The scientist was also interested in skiing **trends**. He

compared the number of people who went skiing in the last year with the number reported in a similar study conducted 10 years ago. Dr. Cordell estimated that downhill skiing had increased in popularity by 58 percent. 10 years ago, few people knew about snowboarding, so the scientist was not able to calculate a trend for it (Figure 1). The scientist discovered that most skiers are white males, although white women ski more than people of color. He also found that as incomes rose, people were more likely to go skiing.



Reflection

- Do you think that 8.4 percent of the people in your community go skiing? Why or why not?

- Do you think that 8.4 percent of the people in Texas go skiing?
- What does that tell you about the value of averages?
- When will the scientist be able to calculate a trend for snowboarding?

Implications

Downhill skiing is a very popular outdoor recreation activity. Agencies like the USDA Forest Service and companies that own ski resorts or manufacture ski equipment should plan for a continued increase in skiing in the future. Snowboarding,

which now only has a small number of participants, will also be an important part of the downhill skiing business in the future.



Reflection

- Why do you think that more and more people are going skiing?

- What are some other ways to find out how many people go skiing?

From: Cordell, H. K. (1999). *Outdoor recreation in American life: A national assessment of demand and supply trends*. Sagamore Publishing.



Discovery FACTivity

The scientist in this study used a questionnaire to discover information. But, because he could not ask everyone in the United States his questions, he selected a sample. If the sample is not biased, it should represent the whole population. In this FACTivity, we are going to discover whether a sample of your class can represent the whole class.

First, identify a sample of students in your class. You don't want to be biased, so all students must have the same chance of being selected. You can do this by writing the name of each student on a piece of paper. Put all the names into a hat or bowl and mix them up. You will select a sample that is 50 percent of



Skiing is a popular sport.

the class size. Calculate how many names you will pull from the hat by taking the total number of students and multiplying it by .50.

Before you pull the names, however, we'll need to get some answers from everyone in your class! Have everyone take a sheet of paper and write their name on it. Then, they should write the answers to the following questions on the page:

1. Are you a boy or a girl?
2. Did you ride your bicycle in the last year?
3. Did you play soccer in the last year?

With the help of your teacher, count the number of responses to each question. Then, calculate the percentage that each represents. For exam-

ple, pretend your total class size is 24 and there are 14 girls in the class. If you divide 14 by 24 you get .58 or 58 percent of your class are girls. If 20 people in your class rode their bicycle in the last year, you will divide 20 by 24 to get .83. That means 83 percent of you rode your bicycle in the last year.

Next, pull names from the hat or bowl. Now you will calculate the responses to each question, but this time you will only use the responses of the students whose names were pulled. For each response to the three questions, calculate the percentage. You will not divide the responses by the total class size, but by a number half of the class size. Then, compare the percentages calculated for each question in the sample with the percentages calculated for the whole class. Are they similar? You should not expect them to be exact. If they are not similar, try again by putting all the names back into the hat and pulling another 50 percent sample. If you continue to pull 50 percent samples, most of the sample responses will be similar to the class as a whole. When scientists use samples, they know they will not be exact. However, they feel that their findings are close enough to give them information about the whole population.

For more information see: www.srs.fs.fed.us/recreation