

## INVESTIGATION 1



# WHAT DO YOU THINK ABOUT RADON?

## INTRODUCTION

Surveys are increasingly becoming an important fixture in American life. Politics, public policy, marketing, and planning are driven largely by surveys of one kind or another. Commercial agencies make a business of conducting sample surveys for clients. Market research keeps manufacturers and retailers continuously informed regarding people's reactions to new products, packaging, and preferences. Surveys can also provide useful and current information regarding people's perceptions about, or knowledge of, relevant social issues. **In this exercise you will conduct two surveys concerning opinions and/or knowledge about radon. The first will be a survey of students and the second a survey of parents/guardians.**

## OBJECTIVES

To determine perceptions about radon, including its physical properties and its economic, social, and personal consequences.

## MATERIALS

- Radon Survey

## PROCEDURE

1. Complete the student survey (Radon Survey).
2. Take home one or two copies of the survey for your parent(s)/guardian(s) to complete and return to class.
3. Use the tally sheet format illustrated below to determine the mean values for each question from students and parents.

Question	Response					Total	Mean
	1	2	3	4	5		
1 Total People						11	
Point Value	1×2=2	2×4=8	3×2=6	4×2=8	5×1=5	29	2.64
2 Total People	<del>    </del>					11	
Point Value	1×7=7	2×1=2	3×2=6	4×0=0	5×1=5	20	1.82
Continue for all questions in the survey.							

Figure 1. Example showing tally sheet computations

**DATA COLLECTION**


4. Use a spreadsheet to enter the class' and parents' mean score and difference for each question or tabulate the differences as shown below.

Question	Student Mean	Parent Mean	Difference
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

5. Plot a graph of your data.


**EXAMPLE GRAPHS**

LINE GRAPH

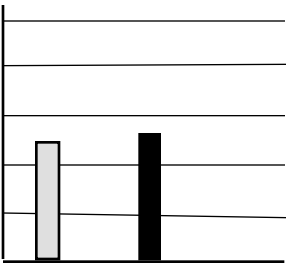


X - Axis

PIE CHART GRAPH



BAR GRAPH



X - Axis

In a line graph, data points are plotted on the graph and then connected by a line. The line can either connect each point to the next or approximate the pattern displayed by the data points, as shown above. In a bar graph, the height of each bar corresponds to the values on the y-axis. Bar graphs and pie charts are good when you want to combine a lot of data points into different categories. Each category will then be displayed as one bar or one slice of the pie.

The following guidelines will help you to draw clear, easily-interpreted graphs:

1. Determine which set of numbers will be shown on which axis. If you think that one variable (set of numbers) might be causing the other variable to be affected, then it is best to put the variable suspected of causing the effect on the x-axis (horizontal) and the affected variable on the y-axis (vertical).
2. Choose scales for each axis. They don't have to be the same. They don't have to start at zero, and sometimes can include negative numbers. Choose scales that allow you to clearly show all of your data points without having a lot of empty space.
3. Number the major divisions along each axis, label each axis, and when possible show the units used.

**ANALYSIS** (Your responses should be complete sentences.)

6. Which question(s) had the least amount of difference in responses between students and parents? To what do you attribute this result?

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7. Which question(s) had the greatest amount of difference in responses between students and parents? To what do you attribute this result?

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**CONCLUSIONS**

8. Looking at the data from students and parents, what is your impression of opinions that people have about radon?

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9. What questions would you like to know more about as a result of taking this survey?

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## RADON SURVEY

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Sex (circle one):    Male    Female

Age status (circle one):    Student    Parent/Guardian

**PROCEDURE:** Complete the survey below by circling the response that most closely represents your feeling or perception about the question (1-Strongly Agree, 2-Agree, 3-Neutral, 4-Disagree, and 5-Strongly Disagree).

		Strongly Agree	Agree	Don't know or Neutral	Disagree	Strongly Disagree
1.	Radon is a health hazard.	1	2	3	4	5
2.	Radon causes bone cancer.	1	2	3	4	5
3.	Radon is a naturally occurring radioactive gas.	1	2	3	4	5
4.	Radon enters homes mostly through windows, and cracks in ceilings and roofing.	1	2	3	4	5
5.	At high concentrations, radon can be detected by its smell.	1	2	3	4	5
6.	Radon levels in a home are related to the air flows within the home.	1	2	3	4	5
7.	Significant amounts of radon come from natural gas and home furnishings.	1	2	3	4	5
8.	Tests to screen for radon are simple to perform and inexpensive.	1	2	3	4	5
9.	All traces of radon can easily and inexpensively be eliminated from a home.	1	2	3	4	5
10.	There is natural radiation around us all the time.	1	2	3	4	5

