Hockey

Lian is on an Atom hockey team called the Blades. She keeps a notebook and records the points scored by each player on her team during the season. Here are the results:

<table>
<thead>
<tr>
<th>Player</th>
<th>Points Scored</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daksha</td>
<td>14</td>
</tr>
<tr>
<td>Lian</td>
<td>28</td>
</tr>
<tr>
<td>Alyssa</td>
<td>24</td>
</tr>
<tr>
<td>Cameron</td>
<td>32</td>
</tr>
</tbody>
</table>
Lian loves hockey so much that she is going to do her research project about the National Hockey League. She looks up the points scored in a season by the following players:

<table>
<thead>
<tr>
<th>Player</th>
<th>Points Scored</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sidney Crosby</td>
<td>120</td>
</tr>
<tr>
<td>Alexander Ovechkin</td>
<td>112</td>
</tr>
<tr>
<td>Jarome Iginla</td>
<td>96</td>
</tr>
<tr>
<td>Ryan Smyth</td>
<td>70</td>
</tr>
</tbody>
</table>

Reflection

How are these types of data the same?
How are they different?

Objectives for this Lesson

In this lesson you will explore the following concepts:

- The difference between first-hand and second-hand data
- Finding examples of second-hand data in media
- Forming a question that can best be answered using first-hand data
- Forming a question that can best be answered using second-hand data, and explain why
Go online to complete the Concept Capsule about One-to-One vs. Many-to-One Correspondence Graphs.

Types of Data

Data can come from many sources. You can create data through an experiment. You can gather data while observing an event. You can gather data through a survey. These are all types of **first-hand data**. First-hand data is data that is gathered by the person reporting the data.

Data can also come from research. You might look up the statistics of an athlete. You could look up how stocks are doing on a given day. You could find information in an encyclopaedia. This type of data is called **second-hand data**. Second-hand data is not collected directly by the person reporting on the data.

**Example 1**

Are the following situations first-hand or second-hand data?

A. Zach observes his guinea pigs each day for a week and records the amount of food the pets eat.

   Zach gathers the data and will be the reporter of the data. This is **first-hand data**.

B. Nina looks up the types of energy used in Canada and how much is consumed each year.

   Nina is researching to find data that she will report. This is **second-hand data**.

C. Cameron looks up the amount of plastic and paper recycled each month in his local paper.

   Cameron is researching the data he will report. This is **second-hand data**.
D. Alyssa observes her friends for a month and records the number of times they each forget their pencil or paper for school.

Alyssa is collecting the data herself. This is first-hand data.

**Exploration 1: Creating and Researching Data**

**Materials:** Unit 4, Lesson 1, Exploration 1 page from your Workbook, Small package of coloured candies, Plate, Pencil, Computer with Internet access

**Creating Data**

1. Open your package of candy and empty them on a plate.
2. Sort the candies by colour.
3. Record the colour and number of each candy in a table.
4. Create a bar graph of your results. Remember to mark your scale and write in your colours as categories.
5. What type of data is this? Why?
6. Write three questions for the data in your graph. Answer each question.

**Researching Data**

7. Find data on the Internet to answer the following question:
   What are the points earned by the highest scoring NHL hockey
players for the most recent season?

8. Make a table for your data. Look up the scores of at least 4 players.

9. Create a bar graph of the data.

10. What type of data is this? Why?

11. Write 3 questions for the data in your graph. Answer each question.

**Questions You Can Support with Data**

You can form questions on your own. If the answers to the questions require first-hand data then you must design an experiment or survey to answer the questions. What types of questions can best be answered using first-hand data? Here are a few:

- What are the eye colours of the people in my family?
- What are the favourite pets of the students in a class?
- How many birds did I observe on my hike and what types of birds were they?
You may also need to do some research to answer questions that you formed on your own. Here are a few sample questions that require second-hand data. You can use the Internet or a local publication to answer these types of questions:

What is the country of origin for immigrants to my province?

What type of cell phone service do people in my community use?

What are the most popular charities in my province?

Example 2

What types of data would you use to answer these questions and how would you find the answer?

A. What are the birth rates for the provinces of Canada? This is second-hand data and can be found through Internet research.

B. What is the most popular chocolate bar in your class? This is first-hand data and can be found by creating a survey for students in your class.

C. What is the hair colour of people in your neighbourhood? This is first-hand data and can be found by observing people in the neighbourhood.
D. How many people now use the internet in Canada? This is second-hand data and can be found through Internet research.

E. How fast does a sunflower plant grow? This can be first-hand or second-hand data. For first-hand data you would create an experiment where you measure and record the growth of the plant. You could research sunflower plants. You can find information on how fast they grow using a book, gardening journal, or the Internet.

Reflection

Can you think of other questions that can be written for first-hand data? Can you think of other questions that can be written for second-hand data?

Let’s Practice

- Turn in your Workbook to Unit 4, Lesson 1 and complete 1 to 16.