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Introduction

Why Teach Data Analysis Skills?

Data is all around us. But data analysis can be difficult for teachers to teach. Most core curriculum programs have only a few lessons about data and graphs. As a result, teachers do not have a wealth of content to use to teach these skills.

With *Data Science and Data Literacy*, students are given strong problem-solving strategies that they will use in their daily lives and in their future careers. This book will provide students with frequent opportunities to master and retain data analysis skills in a structured, user-friendly manner.

Data Science and Data Literacy will teach students how to read data in graphs, how to create their own graphs based on data that is meaningful to them, and how to analyze and interpret data in graphs.

About the Book

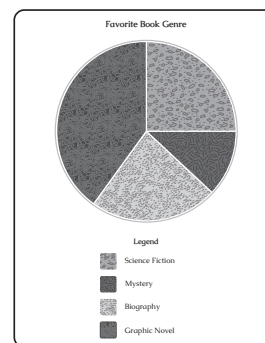
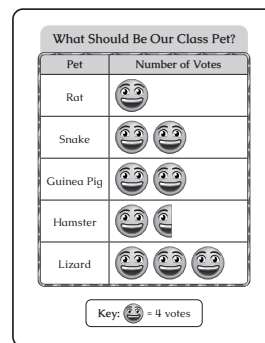
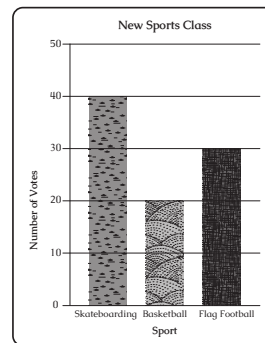
This book is divided into units that correspond to the type of graph used. Each unit has a real-world theme about which students will gather data. All surveys, problems, and graphs in that unit are centered around the theme. These themes include favorite foods, pets, and book genres.

Each unit is presented in the following sequence:

- 🕒 an introduction to the type of graph covered in the unit
- 🕒 a unit vocabulary page with terms students will need to know for the unit
- 🕒 a real-world situation presented in the form of data and a graph, with questions that students answer to analyze the given data
- 🕒 data provided for students to create their own graphs and interpret the results
- 🕒 a final activity in which students create their own survey, collect data, and analyze the information gathered

The book concludes with an appendix, which provides the following:

- 🕒 a section on spotting misleading data that gives information about ways graphs can be used to show deceptive or incorrect information; students will become data detectives, ready to recognize these techniques on social media or elsewhere in their daily lives
- 🕒 full-size blank templates of graphs from each unit that students can use to collect and record a variety of data
- 🕒 an answer key for each unit in the book



Data in the Real World





The school wants to add a new item to the lunch menu. The cafeteria manager sends a survey to each classroom. The survey asks students which lunch item they would like to have added to the menu.

What do you want added to the lunch menu?





Place a check mark next to your choice. Only choose one. Thank you!

- Beef Burrito
 Chicken Quesadilla
 Chicken Chow Mein
 Vegetables with Rice

As the papers are returned, the cafeteria manager tallies the students' votes.

| Lunch Item | Number of Students |
|----------------------|---|
| Beef Burrito |  |
| Chicken Quesadilla |  |
| Chicken Chow Mein |  |
| Vegetables with Rice |  |

The tally chart is a quick and easy way for the cafeteria manager to keep track of the votes. So far, the totals are as follows:

-  beef burrito: 45 students
-  chicken quesadilla: 22 students
-  chicken chow mein: 43 students
-  vegetables with rice: 17 students



These totals show that 127 students have voted for the new lunch item.
 $45 + 22 + 43 + 17 = 127$

Name: _____

Date: _____

Graph It!

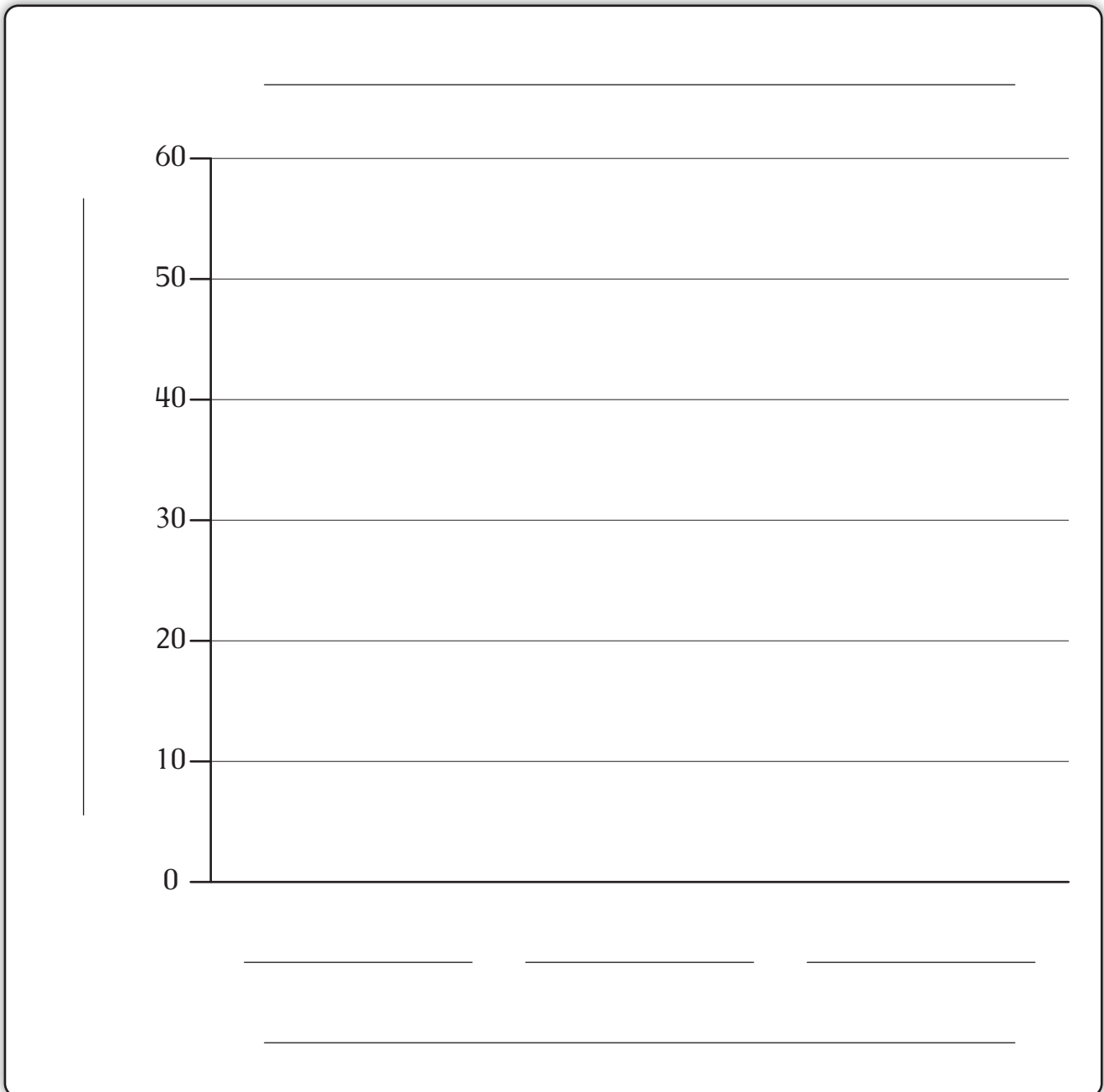
Students in the fourth grade also voted for the sports class they want added to the program. The results of their votes are:

🌀 skateboarding = 35 students

🌀 flag football = 50 students

🌀 running club = 15 students

Directions: Use the data to create a bar graph.



Pictographs

Data in the Real World

A local pet-supply store has a pet adoption day. The manager keeps track of how many pets are adopted at the event. She records the data on the pictograph below.

