



SCOTT FORESMAN Investigations

IN NUMBER, DATA, AND SPACE®

As a way to become familiar with this unit:

- Read the selections
- Try/think through the Activities
- Review the Assessment opportunities
- Do the end-of-unit assessment tasks

Penny Jars and Plant Growth

This unit is the 9th of 9 units in fourth grade. It builds on the work of the previous units in the K-5 patterns, functions, and change strand. Before teaching this unit, perhaps after working through this *Where to Start*, read *Mathematics in This Unit*, p. 10.

Investigation 1: Looking at Graphs

These pages provide an overview of this Investigation:

- Mathematical Emphases (p. 23)
- Investigation 1 Planner (p. 24)

The following activities and information support the key math ideas:

- Activities: Examining Temperature Graphs (p. 27) and Discussing Temperature Graphs (p. 30)
- Teacher Note: Using Line Graphs to Represent Change (p. 133)

Investigation 2: Penny Jars and Towers

These pages provide an overview of this Investigation:

- Mathematical Emphases (p. 41)
- Investigation 2 Planner (pp. 42 & 44)

The following activities and information support the key math ideas:

- Activity: Introducing Penny Jar Situations (p. 47)
- Activity: Penny Jar Tables (p. 55)
- Teacher Note: Situations with a Constant Rate of Change: Linear Functions (p. 138)
- Discussion: Start With 2 and Add 3 (p. 58)
- Activity: Making Graphs (p. 70) and Discussion: Making Rules (p. 72)

Preparation

- Materials to Gather and Prepare (pp. 25, 43, 45, 105)
- Plan for planting seeds and collecting data (pp. 13-15)

Assessment

- Assessment in This Unit (p. 16)
- Assessment Activities (pp. 81, 89, 92)
- End-of-Unit Assessment Activities (p. 130) and Teacher Note (p. 145)

Practice & Review

- Classroom Routines (p. 20)
- Practice and Review (p. 21)

- Activity: Introducing Windows and Towers (p. 77) and Discussion: Single and Double Towers (p. 85)

Investigation 3: Collecting and Analyzing Measurements

These pages provide an overview of this Investigation:

- Mathematical Emphases (p. 103)
- Investigation 3 Planner (p. 104)

The following activities and information support the key math ideas:

- Activity: Graphing Plant Heights (p. 107) and Discussion: Fast and Slow Growth (p. 110)
- Activity: Matching Numbers, Stories, and Graphs (p. 120)
- Teacher Note: Height or Change in Height? (p. 143)

Teacher Notes and **Dialogue Boxes** are important sources of information about mathematics content and about students' thinking about mathematical ideas. Each time you teach this unit, you can read more of this information.