

## Kindergarten Clarifying Lessons: Data Discovery (Centers)

**OLD Resources.** These resources have NOT yet been updated to align with the revised elementary mathematics TEKS. These revised TEKS were adopted by the Texas State Board of Education in 2005, with full implementation scheduled for 2006–07. These resources align with the original TEKS that were adopted in 1998 and should be used as a starting point only.

### What is a Clarifying Lesson?

A model lesson teachers can implement in their classroom. Clarifying Lessons combine multiple TEKS statements and may use several Clarifying Activities in one lesson. Clarifying Lessons help to answer the question "What does a complete lesson look like that addresses a set of related TEKS statements, and how can these TEKS statements be connected to other parts of the TEKS?"

---

### TEKS Addressed in This Lesson

Number, operation, and quantitative reasoning: K.1A, B, C

Geometry and spatial reasoning: K.8C

Measurement: K.10A

Probability and statistics: K.12A, B

Underlying processes and mathematical tools: K.13A, B, C, D; K.14A, B; K.15A

### Materials

This lesson makes use of several learning centers. See the Learning Centers List for Data Discovery.

### Related Resources

TEXTEAMS Module 27, *Prekindergarten–Kindergarten Mathematics*

*Kindergarten Book: Addenda Series*, NCTM (1991)

### Lesson Overview

Students collect, organize, and use data in various settings.

### Mathematics Overview

Students use objects to collect data, construct graphs using real objects, and use information from the graphs to answer questions.

**Set-up (to set the stage and motivate the students to participate)**

1. Pose the following situation:

I like to buy a little present for each of my students for his or her birthday. Since I can't buy all the presents at once, it is important for me to save enough money and do the right amount of shopping each month. How can I figure out how much money and time I need to spend each month to buy presents?

2. Have students brainstorm suggestions. (K.13B, C, D)
3. Guide students to discover the need for a way to organize the information, leading to a design for a month-by-month arrangement upon which they can record their birthday information. Use input from students to design the organization. (Although students need practice placing data into tables, charts, and graphs, designing the table or chart or graph is a very important skill in itself, and students should be included as much as possible in the decision-making that goes with the construction of the format for organizing the data.) (K.12A, B; K.3B, C, D)
4. Give each student a slip of paper on which their name and birth date are written. Have students place the papers on the graph in the appropriate places. (K.12, K.13D)
5. Discuss the graph using the following questions: (K.12B; K.14A, B; K.15)

Which months have the most, least, and same number of birthdays?

Which month will I (the teacher) have to save the most?

What should I do about summer birthdays?

6. Select some of the center activities described in Learning Centers List for Data Discovery to set up in the classroom. Introduce each center to the students, then provide students access to the centers throughout the week (or following weeks) so that they can practice collecting, organizing, and using data.
7. As students are working at the centers, use the guiding questions to encourage them in their explorations.
8. Meet with the students each day after they have worked at the centers. Use the summary questions to identify misconceptions, evaluate their progress, and plan for appropriate follow-up activities.

**Teacher Notes (to personalize the lesson for your classroom)**

**Guiding Questions (to engage students in mathematical thinking during the lesson)**

- What information, or data, would help you answer this question? (K.12A, B)
- What groups could you make with your objects? (K.8C)
- Do you have more of this kind of object or this kind? How can you tell? (K.1A, B, C; K.12A, B)
- How could you arrange your objects on this grid to compare the groups? (K.12A; K.13B, C, D)
- What observations can you make about your groups when they are arranged on the grid? (K.12B; K.14A, B; K.15)

**Teacher Notes (to personalize the lesson for your classroom)****Summary Questions (to direct students' attention to the key mathematics in the lesson)**

To determine to what extent students were engaged in the activity at each center, ask questions such as:

- How did you collect the data? (K.13B, C, D; K.15)
- How did you organize the data? (K.8C, K.12A)
- How did you display the data? (K.12A; K.13B, C, D)
- What questions did you answer with the data? (K.12B; K.14A, B; K.15)
- What questions could you not answer with the data? (K.12B; K.14A, B; K.15)

**Teacher Notes (to personalize the lesson for your classroom)****Assessment Task(s) (to identify the mathematics students have learned in the lesson)**

Look for the following behaviors as students work in centers:

- Can students collect data in a variety of ways?

- Can students organize data (e.g. sorting by an attribute)?
- Can students display data in various ways (e.g. in a bar-type graph)?
- Can students use their organized data to compare sets of objects?

Have students organize their shoes into groups according to how they fasten and organize the groups of shoes in a bar-type graph in order to compare the groups.

**Teacher Notes (to personalize the lesson for your classroom)**