Problem-Solving: Math, Episode 1
Teacher's Guide

Grade Level: K–2	**Curriculum Focus:** Math	**Lesson Duration:** One class period

Program Description

Got Your Number? (5:07) — Discover the many ways we use numbers in our everyday life.
You Count! (5:39) — Investigate the difference between cardinal and ordinal numbers.
Less or More (5:19) — Count herds of animals to determine which groups have more and which groups have fewer animals than the others.
Fare Shares (5:19) – Learn how to divide whole objects such as pizza pies and apples into equal parts.

Onscreen Questions

- When do you use numbers?
- Give an example of an ordinal number.
- What is a number that is greater than 11?
- What does it mean to split something in half?

Lesson Plan

Student Objectives

- Learn why numbers are an important part of everyday life.
- Provide examples of daily uses of numbers.

Materials

- *Problem-Solving: Math, Episode 1* video
- Writing paper
- Pencils and erasers
- Computer with Internet access (optional)

Procedures

1. Talk about the different ways we use numbers in our everyday lives. What are some uses of numbers? Why are numbers important? A good way to introduce this topic is to watch *Problem-Solving: Math, Episode 1* with the class.
2. Have students walk around the classroom for 5 to 10 minutes and ask them to point out examples of numbers they find in the room. Direct them to some less obvious ways numbers are used, such as on a clock or the number of paintbrushes in a jar, cubbies, or windows in the classroom.
3. Have students return to their desks and ask them these questions: Where do you see numbers? What are the numbers doing there? Are they measuring something, telling time, or representing a group?
4. After sharing what they found, ask students to imagine a world without numbers. What would it be like? How would things be different? How would school and their classroom be different? Give students a few minutes to think and share their thoughts with the class. Talk about the things that students do in a day. What things would be harder to do without numbers? How do numbers help them know when to go to school? How do numbers help them know how many plates to put on the dinner table? How do numbers help us know where to stand in a line? Help students come up with examples of ways they rely on numbers everyday.
5. Have students draw a picture showing an example of a time they have used numbers. Give them some examples: standing first or last in line, dividing candy among friends, or having a doctor measure their height. All of these represent important uses of numbers in everyday life. More advanced students could write words or a sentence or two explaining their drawing.
6. When the drawings are complete, ask volunteers to share their work with the class. Display the drawings in the classroom so that students are reminded of the importance of numbers in their everyday lives.

Assessment

Use the following three-point rubric to evaluate students' work during this lesson.

- **3 points:** Students were highly engaged in class discussions; were well behaved and on task while searching for examples of numbers in the classroom; and drew unique and colorful pictures that clearly identified an example of a way they use numbers in their everyday lives.
- **2 points:** Students participated in class discussions; were reasonably well behaved and generally on task while searching for examples of numbers in the classroom; and drew somewhat unique and colorful pictures that generally identified an example of a way they use numbers in their everyday lives.
- **1 point:** Students participated minimally in class discussions; were unable to stay on task while searching for examples of numbers in the classroom; and drew incomplete or inaccurate pictures that did not identify an example of a way they use numbers in their everyday lives.

Vocabulary

cardinal number

Definition: A number such as 3, 11, or 412 used in counting to indicate quantity but not order

Context: "One, two three…" These are cardinal numbers: You just give a number to each person, and count how many.

count

Definition: To name or list the units of a group or collection one by one in order to determine a total

Context: Let's count the elephants in these two groups.

measure

Definition: To determine the dimensions, quantity, or capacity of something

Context: Numbers help us measure the right amount of time to bake bread.

numeral

Definition: A symbol or mark used to represent a number

Context: Numbers and the numerals representing them help us make sense of things in the world.

ordinal number

Definition: A number indicating position in a series or order

Context: "First" and "second" are ordinal numbers, which you use when you want to talk about the order of people or things.

unit

Definition: An individual, group, structure, or other entity regarded as a whole

Context: An apple, a cantaloupe, a pizza, a tomato…you can think of any of these as a unit because each is one whole, single thing.

Academic Standards

Mid-continent Research for Education and Learning (McREL)

McREL's Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education addresses 14 content areas. To view the standards and benchmarks, visit http://www.mcrel.org/compendium/browse.asp

This lesson plan addresses the following national standards:

- Mathematics: Understands and applies basic and advanced properties of the concepts of numbers; Understands and applies basic and advanced properties of the concepts of measurement; Understands the general nature and uses of mathematics

National Council of Teachers of Mathematics
The National Council of Teachers of Mathematics (NCTM) has developed national standards to provide guidelines for teaching mathematics. To view the standards online, go to http://standards.nctm.org/.

This lesson plan addresses the following math standards:

- Number and Operations: Understands numbers, ways of representing numbers, relationships among numbers, and number systems
- Measurement: Understand measurable attributes of objects and the units, systems, and processes of measurement

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Support Materials

Develop custom worksheets, educational puzzles, online quizzes, and more with the free teaching tools offered on the Discoveryschool.com Web site. Create and print support materials, or save them to a Custom Classroom account for future use. To learn more, visit

- http://school.discovery.com/teachingtools/teachingtools.html

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DVD Content

This program is available in an interactive DVD format. The following information and activities are specific to the DVD version.

How To Use the DVD

The DVD starting screen has the following options:

***Play Video*—**This plays the video from start to finish. There are no programmed stops, except by using a remote control. With a computer, depending on the particular software player, a pause button is included with the other video controls.

***Video Index*—**Here the video is divided into four parts (see below), indicated by video thumbnail icons. Watching all parts in sequence is similar to watching the video from start to finish. Brief descriptions and total running times are noted for each part. To play a particular segment, press Enter on the remote for TV playback; on a computer, click once to highlight a thumbnail and read the accompanying text description and click again to start the video.

***Curriculum Units*—**These are specially edited video segments pulled from different sections of the video (see below). These nonlinear segments align with key ideas in the unit of instruction. They include onscreen pre- and post-viewing questions, reproduced below in this Teacher's Guide. Total running times for these segments are noted. To play a particular segment, press Enter on the TV remote or click once on the Curriculum Unit title on a computer.

***Standards Link*—**Selecting this option displays a single screen that lists the national academic standards the video addresses.

***Teacher Resources*—**This screen gives the technical support number and Web site address.

Video Index

Curriculum Units