

# Let Me Count the Ways

## Topic

Measurement, direct comparison and non-customary units

## Key Question

How should these objects be arranged to show lightest to heaviest?

## Focus

The students will use the direct comparison of objects to order them from lightest to heaviest. They will also use non-customary units (Teddy Bear Counters) to compare the masses of the objects.

## Guiding Documents

### Project 2061 Benchmarks

- Tools are used to do things better or more easily and to do some things that could not otherwise be done at all. In technology, tools are used to observe, measure, and make things.
- Simple graphs can help to tell about observations.
- Use whole numbers and simple, everyday fractions in ordering, counting, identifying, measuring, and describing things and experiences.
- Describe and compare things in terms of number, shape, texture, size, weight, color, and motion.

### NCR Standards

- Employ simple equipment and tools to gather data and extend the senses.
- Objects have many observable properties, including size, weight, shape, color, temperature, and the ability to react with other substances. Those properties can be measured using tools, such as rulers, balances, and thermometers.

### NCTM Standards

- Verify and interpret results with respect to the original problem
- Develop the process of measuring and concepts related to units of measurements
- Construct, read, and interpret displays of data

## Math

Counting  
Measurement  
mass  
Graphing  
Estimating  
Sequencing  
Logic

## Integrated Processes

Predicting  
Observing  
Comparing and contrasting  
Communicating  
Collecting and recording data  
Interpreting data



## Materials

Teddy Bear Counters  
Balance  
Scissors  
Glue  
Bag containing:  
eraser  
scissors  
box of eight crayons  
small block of wood  
tennis ball or small rubber  
small lump of clay



## Background Information

Measurement in its simplest form is a direct comparison of one object to another to answer questions like: Which is more?... less?... the same? When direct comparisons are not accurate enough, a unit of measure becomes necessary. Because a unit such as a centimeter or a gram has very little meaning for a young child, uniform counted objects such as Teddy Bear Counters are used to build the idea of measurement.

## Management

1. Six objects have been suggested for this activity. You may want to substitute or replace them with other objects. In this case, illustrations of the substituted objects would need to replace the pictures on the activity sheets. For very young learners, you may want to limit the number of objects used to three or four.
2. The activity is divided into two parts: Part 1 emphasizes the direct comparison of the objects by how they feel in the students' hands and how they compare to each other in the balance. Part 2 uses a balance and Teddy Bear Counters to compare the masses of the objects.
3. Be aware that the strips for graphing that are supplied have only 12 spaces. If any object has a mass greater than 12 Teddy Bear Counters, two or more strips can be put together.
4. Students are asked to predict the order of the objects from light to heavy. If they experience difficulty in this sequencing process, you may want to teach them an organizational strategy such as:
  - Place six sheets of plain paper on the table. Indicate that the farthest sheet to the left (first paper) is for the lightest object and the farthest sheet to the right (sixth paper) is for the heaviest object. Allow time for the students to determine the lightest and heaviest object and to place them on the respective papers.
  - Ask them how many objects are remaining. [4] Have them determine which of the remaining objects are lightest and heaviest and place them on the appropriate papers (the second paper for the lightest of the four objects and the fifth paper for the heaviest).

# Let Me Count the Ways

Cut out the "My Hands" pictures. After you have picked up the objects glue the pictures in the chart from lightest to heaviest.









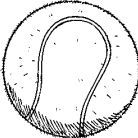
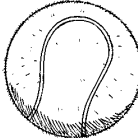
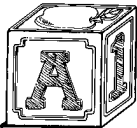
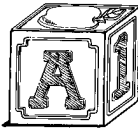
My Hand  
Lightest

The Balance  
Lightest

Cut out "The Balance" pictures. Use the balance to order the objects from lightest to heaviest.

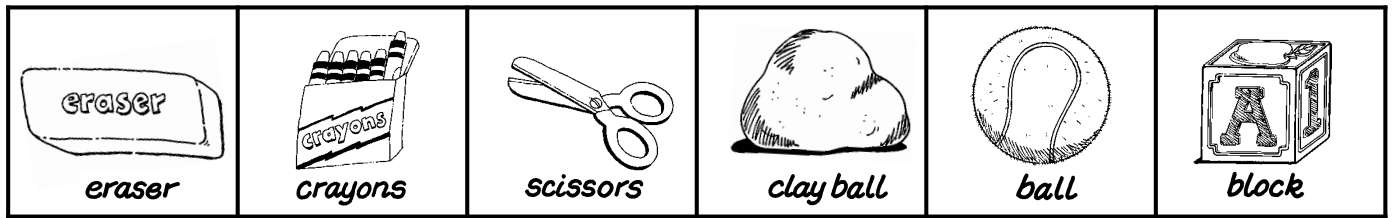
Glue the pictures to show your results.

My Hand      The Balance

 eraser	 eraser
 crayons	 crayons
 scissors	 scissors
 clay ball	 clay ball
 ball	 ball
 block	 block




# Let Me Count the Ways



*My Guess*









































































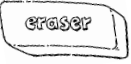





*Find Mass and Count*

	<u>          </u> <i>bears</i>	<u>          </u> + <u>          </u> = <u>          </u> <i>bears</i>
	<u>          </u> <i>bears</i>	<u>          </u> + <u>          </u> = <u>          </u> <i>bears</i>
	<u>          </u> <i>bears</i>	<u>          </u> + <u>          </u> = <u>          </u> <i>bears</i>
	<u>          </u> <i>bears</i>	<u>          </u> + <u>          </u> = <u>          </u> <i>bears</i>
	<u>          </u> <i>bears</i>	<u>          </u> + <u>          </u> = <u>          </u> <i>bears</i>
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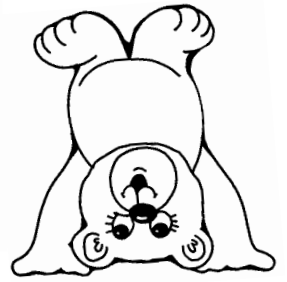
# Let Me Count the Ways - Graphing Strips

1. Find the Mass and Count.
2. Count and color.
3. Cut out each strip.
4. Put strips in order from few to many.

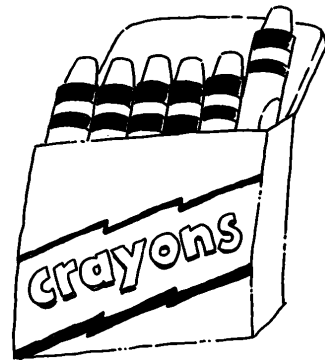


					
					
					
					
					
					
					
					
					
					
					
					
 eraser	 crayons	 scissors	 clay ball	 ball	 block

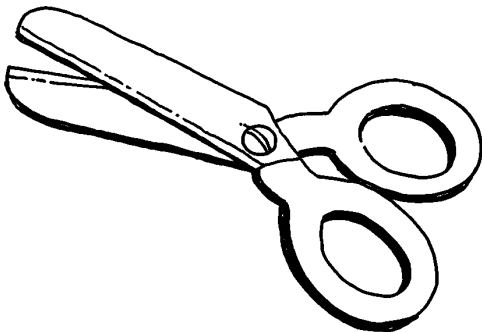
# Let Me Count the Ways Graphing Labels



*eraser*



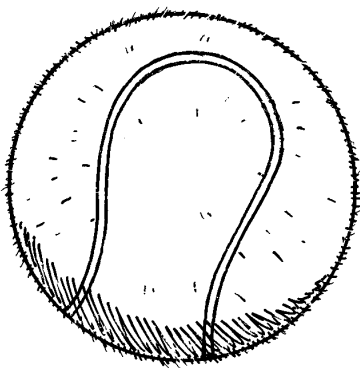
*crayons*



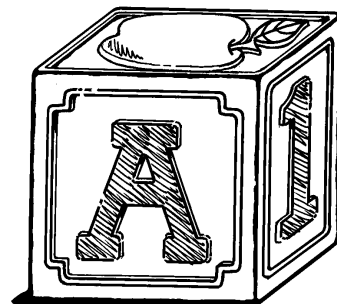
*scissors*



*clay ball*



*ball*



*block*