GRADE ONE MATH AND SCIENCE GRAPHING ACTIVITY:

OBJECTIVE:
Students work as a class to graph, and make predictions using chicken weight data.

NC STANDARD COURSE OF STUDY: MATHEMATICS CURRICULUM
Number Sense, Numeration, and Numerical Operations: Competency Goal 1
1.06 Read number words 0 - 10
1.15 Model concept of subtraction as take-away, comparison, and missing addends.)
Data, Probability, and Statistics: Competency Goal 4
The learner will demonstrate an understanding of data collection, display, and interpretation.
4.01 Gather, organize and display information as a group activity.)
4.02 Answer questions about charts and graphs.)
4.03 Make predictions based on experiences.)

VOCABULARY:
hen, rooster, predict, prediction, data, graph, breed, best guess/guessing

PREPARATION
Xerox (double sided) the chicken cards sheets onto card stock and cut along dotted lines for 10 cards. Or, create the cards using index cards. The breed of chicken and the weight for the female is on one side and the male weight is on the other.

The graphs will have numbers words "one" through "ten" on them for students to practice reading the numbers as words. (Goal: 1.06)

Gather pictures of some of the breeds of chickens from the website, or visit the site as a class to see some of these rare birds before starting the graphing activity.

<div align="center">The Data</div>

Ancona.	Hen #1: 5 lbs (avg. 4.5);	Rooster: 6 lbs
Delaware.	Hen #2: 6 lbs.;	Rooster: 8 lbs.
Dominique.	Hen #3: 4 lbs (avg. 4-5);	Rooster: 6 lbs (avg. 6-7)
Java.	Hen #4: 6 lbs;	Rooster: 9 lbs
Leghorn.	Hen #5: 5 (avg. 4.5 - 5.5);	Rooster: 6 (avg. 5.5 - 7.5)
Rhode Island Red.	Hen #6: 7 lbs (avg. 6.5);	Rooster: 9 lbs (avg. 8.5)
Minorca	Hen #7: 8 lbs (avg. 7.5);	Rooster: 9 lbs
Wyandotte.	Hen #8: 7 lbs (avg. 6.5);	Rooster: 9 lbs (avg. 8.5)
Australorp.	Hen #9: 7 lbs;	Rooster: 9 lbs. (avg. 8.5)
Barred Plymouth Rock	Hen #10: 8 lbs (avg 7.5);	Rooster: 10 lbs (avg 9.5)

WHAT'S A HEN WEIGH?

ENGAGE:

Does anyone know the answer to this old joke, "What's a henway"? Take guesses. (A road hens travel on? A small highway?)   Answer: "About 5 pounds!" (Get it? What's a hen weigh?) Teacher can write out both versions of the word to illustate the homonym effect, and the effect of slurring words together.

Now, here's a scientific question! What's the REAL answer to this joke? I found some real <u>data</u> about hens and how much they weigh, and so I thought it would be fun to get a really accurate answer to this joke! (Ask: What is data? Write word on the board.)

EXPLORE:

Step 1: The data we have is from ten <u>rare</u> hens. Show pictures of chicken breeds and introduce the chickens as <u>rare breeds</u>. Use CD, website or printed pictures.

Step 2: Solicit help from the class to discover the average weight of a hen.
      A. Hand out cards to ten students with data about one chicken on each card.
      B. Call on students to help you graph this data on to an overhead.

EXPLAIN:

The children will help the teacher make a pictoral graph illustrating the data.   When finished, they will be asked to:
 - notice the highest and lowest weight.
 - compute the difference bewteen the highest and lowest with help of teacher.
 - look at the data and try to notice that several chickens weigh 7 lbs. "Most of the female chickens tend to weigh around 7 pounds."

EXPAND:

The children with the cards pass them to a friend. (Another 10 students get to participate.)

On an overhead with the female results, or on the board, the second set of students then begins filling in a table with the male results. (One student at a time.)

After 2 or 3 students write the weight of their male bird on the board (next to the breed and female weight) the class makes a prediction about the average weight of the roosters.

Say: Most hens tended to be around 7 pounds. WHAT'S YOU BEST GUESS BASED ON THESE INITIAL RESULTS? Most roosters tend to be around how many pounds?
Note: If the first few students have 6, 8, and 9, then the class may guess too low. This is a learning moment, and demonstrates how we can jump to wrong conclusions with too little information. (See Evaluate)

EVALUATE:
• Have students write their guesses on a piece of paper, with their name, and hand it in.
• Show an overhead of the graph with the rooster data (or project graph from website).
• Ask the students to write the true number that is the most common weight of a rooster (based on the rest of the data) in their Science journals.
• Look at slips of paper in hand for class guesses about weight. Read the guesses (no names) aloud and ask for the real answer. Were we right?
• Explain: We may have guessed "too low", or, "too high". Guessing incorrectly is okay. It simply points out that when we don't have all the information, we sometimes get the wrong idea. We can't always <u>predict</u> accurately. That is why it is important to <u>test</u> our guesses in Science and be sure we are right, or, to gather more information, just to be sure. What if I asked three students when their birthday was, and they all said "December"? Can I assume everyone's birthday in this class is in December? Of course not!

OPTIONAL Challenge Questions:
#1: About how many pounds less than a rooster does a hen weigh, on average? Or, what is the difference in weigh between a hen and a rooster, approximately?
#2: The data today is from rare chickens. Can we say the same information is true for chickens that are NOT rare? Do we have any way of knowing if chickens that are not rare breeds weigh the same as rare breeds?
(Answer: We do *not* know if the information we found today about rare breeds also holds true for chickens that are not rare. That's another question that would need more data. But, that's what's so neat about Science! One question leads us to the next!)

The Data (For teacher reference only)

Ancona	Hen #1: 5 lbs (avg. 4.5);	Rooster: 6 lbs
Delaware	Hen #2: 6 lbs.;	Rooster: 8 lbs.
Dominique	Hen #3: 4 lbs (avg. 4-5);	Rooster: 6 lbs (avg. 6-7)
Java	Hen #4: 6 lbs;	Rooster: 9 lbs
Leghorn	Hen #5: 5 (avg. 4.5 - 5.5);	Rooster: 6 (avg. 5.5 - 7.5)
Rhode Island Red	Hen #6: 7 lbs (avg. 6.5);	Rooster: 9 lbs (avg. 8.5)
Minorca	Hen #7: 8 lbs (avg. 7.5);	Rooster: 9 lbs
Wyandotte	Hen #8: 7 lbs (avg. 6.5);	Rooster: 9 lbs (avg. 8.5)
Australorp	Hen #9: 7 lbs;	Rooster: 9 lbs. (avg. 8.5)
Barred Plymouth Rock	Hen #10: 8 lbs (avg 7.5);	Rooster: 10 lbs (avg 9.5)

Hen # 1 5 pounds	Hen # 2 6 pounds
Hen # 3 4 pounds	Hen # 4 6 pounds
Hen # 5 5 pounds	Hen # 6 7 pounds
Hen # 7 8 pounds	Hen # 8 7 pounds
Hen # 9 7 pounds	Hen # 10 8 pounds

Rooster # 1 6 lbs	Rooster # 2 8 lbs
Rooster # 3 6 lbs	Rooster # 4 9 lbs
Rooster # 5 6 lbs	Rooster # 6 9 lbs
Rooster # 7 9 lbs	Rooster # 8 9 lbs
Rooster # 9 9 lbs	Rooster # 10 10 lbs