

explain and justify their reasoning. *Example:* A new company has moved to town that makes wrapping paper. Assign students in teams of two to create a design for the wrapping paper.

2. Create and explain (verbally or in writing) numerical patterns using a variety of tools. (Calendar, computer, calculator, etc.) *Example:* Guess the next three numbers in this pattern,

3, 5, 4, 6, 5, ____, ____, ____.

Tell about this pattern. Did you add? Did you subtract? What numbers?

3. Find and correct errors in number patterns. *Example:* Is there a pattern? If yes, extend the pattern. If no, correct it to create a pattern.

7, 12, 17, 22, 27, ____, ____, ____ Yes or No

1, 2, 4, 5, 7, 9, ____, ____, ____ Yes or No

Performance Skill: Apply Geometric Concepts

Young children should explore geometric concepts informally and naturally. (NCTM)

Students are expected to:

1. Sort, classify, compare, contrast, as well as recreate two-dimensional shapes at the appropriate development level. *Example:* Sort these blocks by size, shape, and color.



2. Identify, describe, and model three dimensional shapes, including sphere, cube, rectangle, and cone. *Example:* Student identifies the above shapes by sight and touch.

3. Identify and demonstrate symmetry of objects using a variety of hands-on activities. *Example:* Student will be asked to fold paper into parts that are symmetrical, and parts that are not symmetrical.

4. Create objects that have a line of symmetry, using paper and pencil or physical materials.

Example: Students draw the letter "M" and the line that divides it in equal halves (line of symmetry).



5. Recognize and communicate about two- and three-dimensional geometric figures in their environment. *Example:* Students identify: squares, rectangles, cones, spheres, and cylinders in their classrooms and their homes.

6. To fill regular and irregular shapes in more than one way. *Example:* Use blocks and tiles to cover a shape in more than one way.

Performance Skill: Collect, Use, and Interpret Data

Children's questions about the physical world can often be answered by collecting, organizing, and thinking about data. After generating questions, they decide what information is appropriate and how it can be collected, displayed, and interpreted to answer their questions. (NCTM)

Students are expected to:

1. Use graphs and charts to make comparisons and interpret data.

Example: Given the weather chart for December, students write as much as they can about weather.

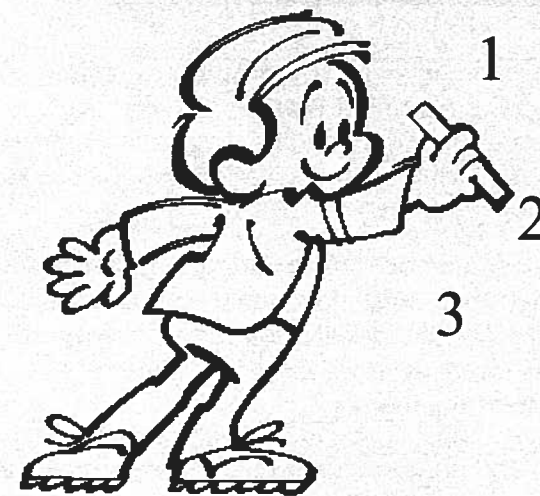
2. Complete simple experiments and surveys in a variety of situations to collect data and to create graphs and charts. *Example:* Students ask (survey) classmates how many different kinds of pets they have: dogs, cats, birds, fish. From this data student creates a chart and a graph.

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If you have any questions, please feel free to contact your child's teacher.

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Galesburg Second Grade Academic Expectations for Mathematics



The teachers and administrators who work with 2nd grade students have developed a very specific curriculum for mathematics. Assisted by consultants, our educators have specifically identified what second graders are expected to know and be able to do in the area of mathematics at the end of grade two. This curriculum has been named Second Grade Academic Expectations. It defines each of the Performance Skills on the Second Grade Report Card.

Performance Skill: Number Sense

If children have number sense, they understand the relationship of numbers to each other, are able to tell when an answer is reasonable, and can use numbers effectively in many situations. (NCTM)

Students are expected to:

1. Demonstrate an understanding of math facts to 20, using strategies such as patterning, doubles, near-doubles, counting on, counting back, magic nines, ten frames, next-door neighbors, fact families, or skip counting (2's, 3's, 5's, and 10's). *Example:*

Use linkercubes to make ten-cars.

	4	+	6	=	10

2. Use objects and symbols to investigate and use comparisons of numbers. *Example:* Demonstrate an understanding of less than, greater than, sequencing and ordering, and writing numerals (including 0 -1,000).

3. Use numbers for a variety of purposes, including to quantify, to identify a specific object in a collection, to identify position (ordinal), and to measure. *Example:* Color the second, sixth, and third numbers:

80 12 22 59 3 15

Now add numbers on a calculator. Answer: 49

4. Solve problems that build mathematics from everyday situations. *Example:* Students will write a story problem based on everyday situations with or without picture prompts.

5. Demonstrate understanding of numeration system by relating counting, grouping, and place-value concepts. *Example:* Show a 2-digit addition/subtraction problem with regrouping on a place value map using manipulatives, then write and solve the problem showing the correct process.

6. Demonstrate an understanding of concepts of addition and subtraction as a relationship between sets and comparisons. *Example:* Anna had 25 marbles, some were blue and some were red. Jose had 11 marbles. Draw a picture and write a number sentence showing how many marbles of each color Anna and Jose might have.

7. Select appropriate strategies, including estimation, mental math, and use of technology to solve problems. *Example:* Use estimation and a calculator to estimate the number of jellybeans.

8. Using manipulatives, model an understanding of fractions in a variety of situations. *Example:* Display one 1-inch square and tell the child that it is $\frac{1}{4}$ of a whole shape. Then have the child make the complete shape.

Performance Skill: Measurement

Measurement is a means of comparing objects using a common attribute. Children begin with nonstandard measures (objects other than rulers). Later they begin to use rulers. (NCTM)

Students are expected to:

1. Estimate and measure a variety of objects with nonstandard units: length, weight, volume, and area. *Example:* Make an unmarked ruler of any length. Use it to measure something and compare the two. Tell about the ruler and tell about the measurements.

2. Use nonstandard units to determine that as the size of a measuring unit increases, the number of units needed to measure a given object decreases; as the size of the measurement decreases, the number of units needed to measure the same object increases. *Example:*

Using 2 pieces of string, measure how long your room is. Which piece of string has the larger number of units? Why?

3. Estimate and measure the length of objects using standard units, including metric and

English units: *Example:* Find things that look about 1 foot long. Measure each object. Draw or write to show things that are about 1 foot long.

4. In a variety of real-life situations, identify and give the value of pennies, nickels, dimes, and quarters. *Example:* If given a number of pennies, nickels, dimes, and quarters, the student will determine the amount of money.

5. Children will determine a variety of coins needed to represent a specified value, to a dollar, in three different ways. *Example:* A toy costs \$0.41. Find 3 different ways to make \$0.41.

6. Solve real-life problems using coins, including addition and subtraction problems. *Example:* Plan a meal and determine the cost using current grocery store ads.

7. Tell time to five minutes on an analog clock and on a digital clock, as it pertains to times of the day. *Example:* Student can list at least five daily events and draw a clock face that represents the time they occur, i.e., "eat breakfast."

8. Solve problems that require understanding of time such as time lapse and schedules. *Example:* Student develops a timeline illustrating several important events in their life, from birth to present.

9. Apply knowledge of the calendar to solve problems in a variety of situations. *Example:* Student records holidays, school events, assignment due dates, etc. on a calendar. Student can respond to question, "How many days before the assignment is due?"

Performance Skill: Patterns

Second grade is an ideal time to begin making connections between concrete or pictorial patterns and numerical patterns.

Students are expected to:

1. Recognize and apply patterning/sorting in a variety of real-life situations. They must