Sample Learning Targets for CPM Course 1 Chapter 2

LT #1: (6.SP.4)
I can display numerical data in plots on a number line, including dot plots and histograms.

Level 1:
I can construct a correct dot plot or bar graph for a given set of data (when told what type of graph to make). I can answer questions about a data set by interpreting these types of graphs.

Level 2:
I can analyze a set of data and determine whether a dot plot or bar graph would be best suited to display the data. I can justify my reasoning.

Level 3:
I can explain the similarities and differences between a histogram and a bar graph/dot plot, and describe when each is more appropriate. I can answer questions about a data set when given a histogram of the data.

Level 4:
I can create a histogram to represent a set of data. I can justify my choice of bin size, and explain how changing the bin size will impact the overall shape of the graph.

(Note that the CPM text includes Venn Diagrams and Stem-and-Leaf plots, but these are not done on a number line – consider either creating a separate learning target for them, or not spending time on them at all.

Also note that the CCSS standard includes box plots, but these are covered in chapter 8. Furthermore, questions about measures of tendency and distribution are covered in chapter 8, so questions based on graphs should be more qualitative in nature.)

LT #2: (6.G.1)

I can find the area of rectangles, and unfamiliar shapes that can be broken into rectangles.

Level 1:

I can describe what "one square unit" means and can draw a square of any given unit. I can determine the area of a rectangle by counting the number of square units that completely fill the rectangle.

Level 2:

I can determine the area of a rectangle by drawing a sketch and determining the number of square units (without counting).

Level 3:

I can find missing side lengths on an unfamiliar shape.

Level 4:

I can find the area of an unfamiliar shape by breaking it into rectangles. Depending on the given information, I can either find an exact area or an appropriate estimate.

(Note that the original standard - Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes – *was simplified, because the problems that involve decomposing into triangles are in chapter 5)*

LT #3 (6.G.1):

I can determine the perimeter and area of a shape by decomposing it into rectangles, and I can describe the relationship between area and perimeter.

Level 1:

I can use base-10 blocks to build or draw a shape that has a specified area. I can find the perimeter of the shape I created.

Level 2:

I can find the area and perimeter of a shape by first breaking it into non-overlapping rectangles.

Level 3:

I can build or draw a shape that has a specified area *multiple different ways*, and compare their perimeters.

Level 4:

When given a particular area, I can determine whether it can be represented by a square, or by a rectangle without a side length of 1. I can justify my reasoning.

LT #4: (6.NS.4)

I can use the distributive property to express a sum of two whole numbers with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, I can express 36 + 8 as 4 (9 + 2).*

Level 1:

I can explain what a factor is, and I can determine the GCF of two numbers (less than 100).

Level 2:

I can represent the area of a generic rectangle (like the one shown) with both an addition statement and a multiplication statement, and I can demonstrate their equivalence.

120
18

Level 3:

I can write an equation that represents area (as in level 2), where one of the sides of the generic rectangle is the GCF of the two numbers.

Level 4:

I can rewrite a multiplication problem by breaking one of the factors into two terms, draw a generic rectangle to represent it, and then write an equation that represents the area (as in level 2).

Example:

$5 \bullet 13 \rightarrow 5(10 + 3) \rightarrow$

	5
10	
3	

$\rightarrow$

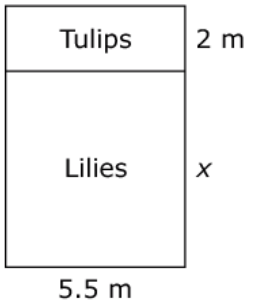
	5
10	50
3	15

$\rightarrow \; 5(13) = 5(10 + 3) = 50 + 15$

Relevant CAASPP sample question:

Jeremiah planted tulips and lilies in a field with a width of 5.5 meters. The field of flowers is shown. Identify each equation that could be used to find the area, in square meters, of the field of flowers for any length x, in meters.

Area of Flowers



- ☐ $A = x^2(5.5)$
- ☐ $A = 2x + 5.5$
- ☐ $A = 5.5x + 11$
- ☐ $A = 5.5(x + 2)$
- ☐ $A = x + 2 + 5.5$

LT #5: (6.EE.3)

I can represent multi-digit multiplication problems with generic rectangles.

Level 1:

Given a generic rectangle with all of the side lengths labeled, I can find the area of each smaller rectangle, and add them up to find the area of the whole rectangle. I can then use this diagram to write a correct multiplication statement.

Level 2:

I can decompose each factor of a multiplication problem into terms (by place value), draw a generic rectangle to represent it, and then find the area of each smaller rectangle. I can show that the sum of these smaller rectangles is equal to the product of the original numbers.

Level 3:

I can find missing areas and side lengths in a generic rectangle puzzle, and then write a number sentence showing that the sum of the smaller rectangles is equal to the product of the total side lengths.

Level 4:

I can write a short paragraph explaining how to use generic rectangles to multiply two 3-digit numbers without a calculator.

LT #6: (6.EE.3)

I can use the distributive property to rewrite products as sums.

Level 1:

I can use the distributive property to change a numeric expression of the form $a(b+c)$ into the form $ab+ac$.

Level 2:

I can rewrite a multiplication problem (1-digit • 2-digits) by breaking the 2-digit number into two terms. I can then apply the distributive property to rewrite the product as a sum.

Level 3:

I can rewrite a multiplication problem (2-digits • 2-digits) by breaking each number into two terms. I can then apply the distributive property twice to rewrite the product as a sum.

Level 4:

I can write a short paragraph that defines what the distributive property is, and how it can be used to change products of multi-digit numbers into sums.

Math – Grade 6 **Period:** **Name:**
Skills Test

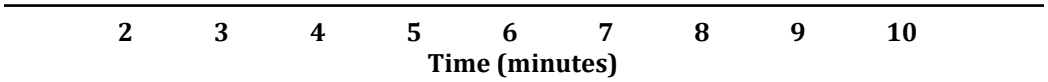
LT #1: I can display numerical data in plots on a number line, including dot plots, histograms, and box plots.

Level 1:

Each of the 20 students in Mr. Anderson's class timed how long it took them to solve a puzzle. Their times (in minutes) are listed below:

Student	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Time (minutes)	3	5	4	6	4	8	5	4	9	5	3	4	7	5	8	6	3	6	5	7

1) Create a dot plot of this data.



2) What information can be determined from your dot plot?

Level 2:

You are playing a game with a 3-color spinner. It has spaces that are purple (P), green (G), and orange (O), but the spaces are not all the same size! You spin it 20 times, and record the results:

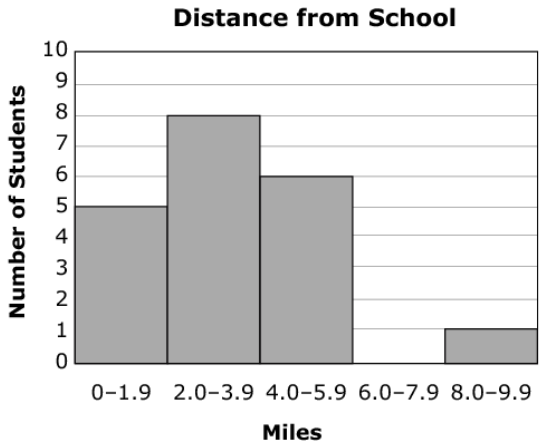
G, P, G, G, P, O, G, G, O, G, G, G, P, G, G, P, P, O, G, O

1) Should you make a bar graph or a dot plot to display this data? Why?

2) Draw your graph in the box to the right.

3) What conclusion can you make about the spinner based on your graph?

Level 3:
Alyssa surveyed her classmates to see how many miles from school they live. The results are shown in the histogram.



1) Complete the statements:

   a) There were _____ students surveyed in total.

   b) There were _____ students in the most frequently occurring bin, which was _____ miles from school.

   c) There was an outlier. That student lived _____ miles away from school.

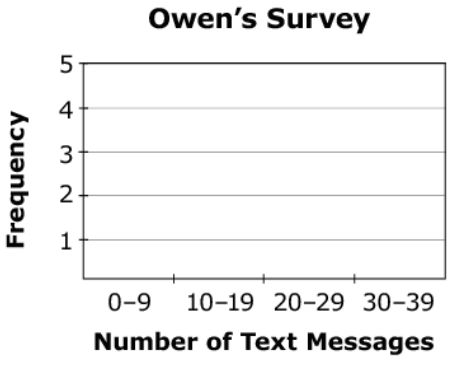
   d) There were _____ students that lived 6.5 miles away from school.

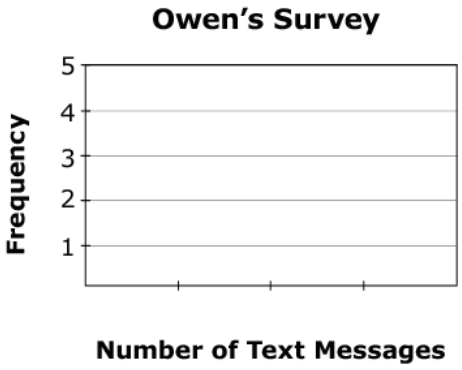
2) Explain why a histogram was a better choice than a dot plot for displaying this set of data.

Level 4:
Owen asked 15 classmates how many text messages they each send per day. The results are in the list below.

0, 5, 39, 24, 0, 30, 14, 23, 25, 22, 9, 29, 21, 3, 20

1) Create a histogram of this data (using the diagram on the left).





2) Create a second histogram on the right, using a bin size of 20.

3) Which histogram better displays the data? Why?

0 – No progress yet shown on this skill.

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4 – I can create a histogram to represent a set of data. I can justify my choice of bin size, and explain how changing the bin size will impact the overall shape of the graph.

Concept Mastery: _____ / 4 **Precision: _____ / 4** **Communication: _____ / 4**

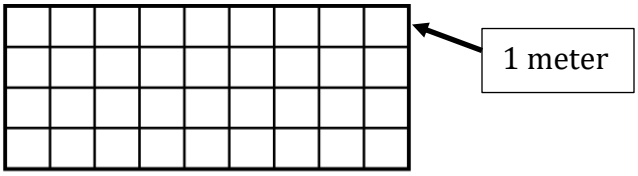
Math – Grade 6 **Period:** **Name:**
Skills Test

LT #2: I can find the area of rectangles, and unfamiliar shapes that can be broken into rectangles.

Level 1:

1) Use a ruler to accurately draw:
one square centimeter **one square inch**

2) What is the area of the rectangle shown? Include units.



Level 2:

Julie drew a rectangle that was 5 units long by 6 units wide. Each unit on her drawing represented 1 yard in length. She then calculated the area of her rectangle.

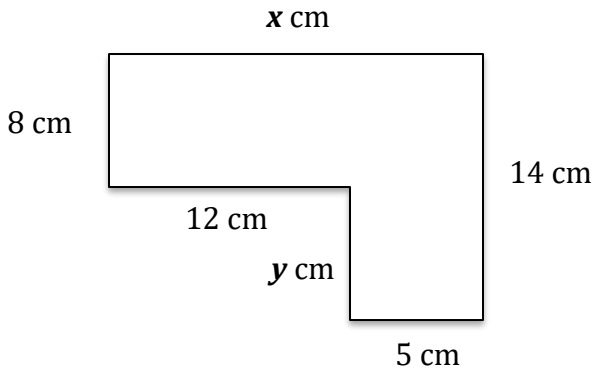
1) Draw the same picture that Julie drew.

2) What area did she calculate? Include units.

Level 3:

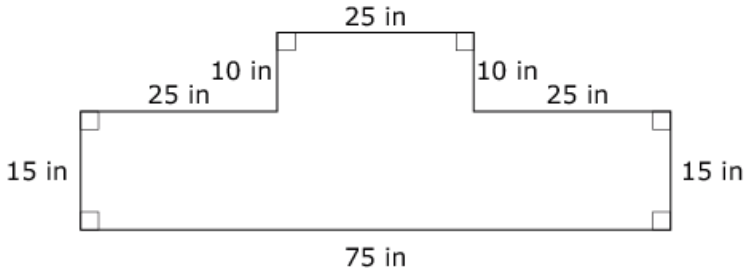
Examine the figure shown.

Determine the values of ***x*** and ***y***. Explain your reasoning.

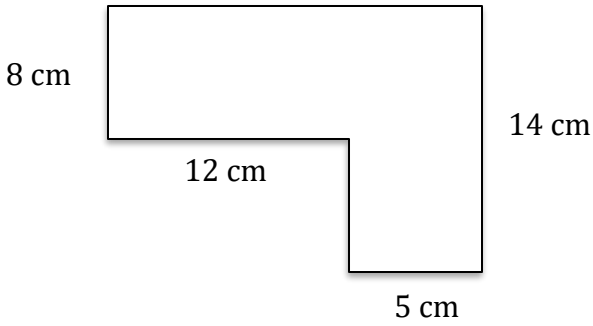


Level 4:

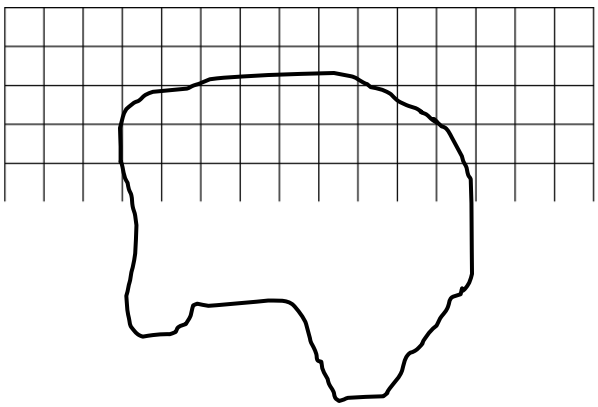
1) Find the area of the figure. Include units.



2) This is the same figure from the level 3 problem. Determine the area of the figure. Include units.



3) Find the approximate area of the figure shown. The scale is 1 unit = 1 inch. Show your reasoning.



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4 – I can find the area of an unfamiliar shape by breaking it into known parts. Depending on the given information, I can either find an exact area or an appropriate estimate.

Concept Mastery: _____ / 4 **Precision: _____ / 4** **Communication: _____ / 4**