5th Grade Assignments – Week #6

Group Assignment: (For either Tuesday or Thursday)

1) A 4x4 Magic Square

Fill in the rest of the empty boxes of the magic square such that each row, column, and diagonal have a magic sum equal to 50. Also, the four corners must add to 50. Once you are finished, answer this question:
Where else do you see four cells that add to 50?

7			12
	8	23	5
9	16		

2) Halfway problems

Find the number that is exactly halfway between…
a) 18 and 34
b) 183 and 371
c) 32 and 45

3) Money problems

a) Jane bought 7 apples at a price of 33 cents per apple. If she gave the cashier $5.06, what did the cashier give her back in change?
b) At the local store bananas cost 69¢ per pound, and oranges cost 75¢ each. If Mark buys 3 pounds of bananas and 8 oranges, how much change will he get back if he gives the cashier $10.07?

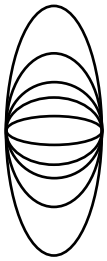
Main Lesson Work (geometry) – **Pages coming out of Lecture #1**

(For those who are doing the Freehand Geometry main lesson.)

What is listed below are suggestions for drawings. Remember that the theme throughout this main lesson is: form in movement. You should feel free to vary things, and make up your own drawings entirely. Be sure that it doesn't become overwhelming. As always, the goal should be quality rather than quantity.

Each drawing should be done beautifully using colored pencils. While there is no way correct way to use color, be mindful that the color should simply emphasize the form. Generally, unnecessary embellishments should be avoided.

- Title: **Growing Isosceles Triangles**
  Instructions: Start with one short but wide isosceles triangle, shaped like this:  and then draw several triangles, each one taller than the one before, but all triangles sharing the same base.
- Title: **A Family of Ovals**
  Instructions: Start with a long, short oval, and then over that one, draw another oval that is a bit taller. The third one should be a circle. Then the fourth one should be taller than the circle, and the fifth one should be the tallest. All ovals have the same width, but different heights.



- Title: **Right Angles**
  Instructions: Draw three horizontal lines across the page, and three vertical lines across the page. How many right angles have you created?

Individual Work (non-geometry)

Work on the following problems. Just do what you can!

1. Write equivalent fractions for $\frac{4}{11}$
2. Write equivalent fractions for $\frac{6}{10}$
3. Reduce the fraction $\frac{6}{10}$
4. Calculate $\frac{2}{5} + \frac{1}{6}$
5. Calculate $\frac{7}{8} - \frac{1}{4}$
6. What is $20 \div 5$?
7. What is $\frac{1}{5}$ of 20?
8. What is $\frac{1}{5}$ x 20?
9. What is $\frac{2}{5}$ of 20?
10. What is $\frac{2}{5}$ x 20?
11. What is $12 \div 4$?
12. What is $\frac{1}{4}$ of 12?
13. What is $\frac{1}{4}$ x 12?
14. What is $\frac{3}{4}$ of 12?
15. What is $\frac{3}{4}$ x 12?

Solve the following problems.

16. 34x56
17. Look for sums of ten in each column!

    732
    674
    789
    468
    927
    + 316

18. *Challenge!* 867x638

Main Lesson Work (geometry) – **Pages coming out of Lecture #2 (Week #6)**

(For those who are doing the Freehand Geometry main lesson.)

What is listed below are suggestions for drawings. Remember that the theme throughout this main lesson is: form in movement. You should feel free to vary things, and make up your own drawings entirely. Be sure that it doesn't become overwhelming. As always, the goal should be quality rather than quantity.

Each drawing should be done beautifully using colored pencils. While there is no way correct way to use color, be mindful that the color should simply emphasize the form. Generally, unnecessary embellishments should be avoided.

- Title: **Concentric Circles**
  Instructions: Do two drawings – one drawing starting with a large circle, and then drawing smaller and smaller circles going inward, and another drawing starting with a very small circle, and then drawing larger circles around it going outward. With both drawings, all circles should share the same center.
- Title: **A Family of Rectangles**
  Instructions: Carefully, draw a large circle, and then draw a long, thin rectangle inside the circle so that all four corners of the rectangle lie on the circle (orientated horizontally). Draw five more rectangles inside the same circle. The third rectangle should be a square.
- Title: **Triangles between Parallel Lines**
  Instructions: Draw two parallel horizontal lines (around 3 inches apart), and then carefully draw an equilateral triangle in the center (with the apex sitting on the upper parallel line). Now, draw a new triangle that has the same base as the equilateral triangle, but the apex of the triangle is shifted to the right (along the parallel line) about halfway toward the edge of the page. Then draw a third triangle, again with the same base, but this time with the apex near the edge of the page. Lastly, draw two more triangles which are reflections of the second and third triangles. Triangles that are the same size should be the same color.
- Title: **A Growing Circle**
  Instructions: Draw a small circle near the bottom of the page. Draw a second circle which is twice as big as the first, and is tangent to the first circle at its lowest point. From that same point of tangency (the lowest point of the two circles), draw three more circles, each one significantly larger than the one before, with the final circle filling much of the page.
- Title: **An Angle Theorem**
  Instructions: Show two cases of how two lines can intersect: (1) meeting at right angles; and (2) meeting at non-right angles. Then add the statement: "When two lines intersect, they either form four right angles, or they form two obtuse angles and two acute angles."