**Activity:** Selected Assignments from the April Optional Work Packet

**Week:** April 27 – May 1

**Grade:** 6  
**Class:** Math  
**Teachers:** Ms. Carter, Mr. Dedrick, Ms. Hartley, Ms. K. Ross, Mr. Reed

**Key Content/Modeling:**
- Make Sense of Problems and Persevere in Solving Them
- Construct Viable Arguments
- Model with Mathematics

You Try:
- The Four Fours
- School Fair Necklaces
- Nine Colors
- Optical Art

Show me what you know (Proof of learning):
Complete your work and e-mail pictures (or solutions) to your teachers.

Self-Assessment:
Did I complete all of the tasks?
Did I try my best?

**Priority Standard(s):**
Math Practice Standards
- MP1: Make Sense of Problems and Persevere in Solving Them.
- MP3: Construct Viable Arguments and Critique the Reasoning of Others
- MP4: Model With Mathematics

What am I learning?
Make sense of problems and persevere in solving them using mathematical models.

How do I know I learned?
Learning Evidence in 1-3 Descriptors
I fully completed all four tasks and checked my answers to make sure they made sense to answer the questions.

Extra Learning Opportunities: Find some math in your community! Did you use ratio reasoning for cooking? Did you have to add or subtract decimals when you were shopping? Did you find any ratios in your video games? Tell us about what you’ve found on e-mail; we’d love to hear all about it!
Good Morning Students
Monday, April 27, 2020

Today Focus:

- In the April Family Resource Packet

Learning Target:

- Make Sense of Problems and Persevere in Solving Them
- Construct Viable Arguments
- Model with Mathematics

Special Note:

- Read each example and do your best in completing all work. If you have any questions, are stuck on a problem, or want me to check your work, please email me and I will be sure to get back with you.
- Take a picture of your work and send it via email for all feedback.
- If you are having trouble accessing the resource packet, please let me know so I can work on ways of getting it to you.
- Paper copies of the resource packet are available to pick up at First Creek on Tuesdays and Thursdays at lunch time.

Tips & Hints:

- Read the entire problem before beginning to work on an answer.
- What do you know about each problem?
- What’s unknown about each problem (what are you trying to discover)?
- Can you draw a diagram (or picture) to help understand the problem?
The Four Fours

Use four fours and any combination of operations to create each number from 1 through 20.

There are multiple ways to combine the fours to make each of the numbers.

Each number must be made with a combination of exactly four fours, no less, no more.

One way to make 1 has been completed as an example – can you find another method to make 1?

1. \(4 \div 4 + 4 - 4\)
2. ___________________________
3. ___________________________
4. ___________________________
5. ___________________________
6. ___________________________
7. ___________________________
8. ___________________________
9. ___________________________
10. ___________________________
11. ___________________________
12. ___________________________
13. ___________________________
14. ___________________________
15. ___________________________
16. ___________________________
17. ___________________________
18. ___________________________
19. ___________________________
20. ___________________________

Nine Colors

You have twenty-seven (27) small cubes. That 3 cubes in each of 9 different colors. Each small cube is the same color on all six of it’s sides.

Can you stack all twenty-seven cubes so that they can make a big cube? Yes/No

If Yes: What are the dimensions of the big cube?
Height: _______ Width: _________ Length: ___________

Is it possible to arrange the small cubes so that the big cube has one box of each color on each side? Yes/No

Draw a picture of your cube (all 6 sides) to justify your answer.
School Fair Necklaces

Rob and Jennie were making necklaces to sell at the school fair.

They decided to make them very mathematical.

Each necklace was to have eight beads, four of one colour and four of another.

And each had to be symmetrical, like this.

How many different necklaces could they make?

Can you find them all?

How do you know there aren’t any others?

What if they had 9 beads, five of one colour and four of another?

What if they had 10 beads, five of each?

What if.....??????

Nrich Mathematics
http://nrich.maths.org/9692

Use this space to draw diagrams of each of your necklace designs, or to showcase your prettiest necklace!
• Using a 100-square grid, create your own interesting pattern. Take a picture of your pattern and e-mail it to your teacher to find out if they see an illusion when looking at your pattern.

• Do you have any other ideas about the ways to create an optical illusion? Describe your mathematical thinking about ways to do that.

• Can you see any patterns, fractions, or decimals in your artwork? Where are they?

• Think of a mathematical question that you could ask about your artwork.

• If someone else wanted to recreate your artwork, what directions would you give them?