



SACRED HEART CATHOLIC ACADEMY—Cambria Heights

Grade 8 Mathematics Summer Fun

*****Choose and complete 3 assignments each week.*****

Week 1 – July 12th – 18th

Math

Materials: paper, black marker

Create your own math equation coloring sheet. Begin by drawing a summer scene with a dark colored marker. Draw just the outlines of the picture (not coloring in the sections) and leaving enough room in different sections to write equations. Next, write equations in each of the blank spaces. Try to use at least two math problems from each unit you have learned this year. Make sure you are creating an answer sheet as you go and are thinking about what colors/ answers you want each problem to have. You can even start by selecting answers/ writing a key before writing the equations. Create a key that tells the person completing the sheet how to color each section. See the link below for ideas <http://www.nordcollective.com/>

Materials: ruler, tape measure, pencil, graph paper

Measure the furniture items in your room (bed, dresser, etc.) and record their length and width then measure the length of width of the entire room and record the measurements. On a piece of graph paper, draw the room to scale using the squares on the graph paper to represent the space in the room (i.e. 2 boxes on the graph paper=1 foot). Make sure you add the locations of doors, windows, closets, and any large pieces of furniture. For an added challenge, design your dream bedroom. You can change your room dimensions and use the measurements from the furniture as a guide for the size of new furniture.

Materials: deck of cards

(ace=1, jack=11, queen=12, king=13)

Shuffle the deck and draw 5 cards to place face up. Draw one additional card that will be the “target card.” Use the cards that are face up to create an equation that will equal the target card. You have to use at least two cards but try to use more or all of them for an added challenge. You can play this with multiple players by giving each player a set of face up cards and trying to get a longer equation to win.

Materials: pictures and measurements of blue whale, sidewalk chalk, a big space to draw, tape measure

Measure a whale

Practice your measuring skills by researching the length of a blue whale and then drawing it. Begin by finding a very large area to draw (i.e. an empty basketball court, parking lot, sidewalk, etc.). Use the tape measure to mark the length of the whale then use the length as the starting point to draw the whale. You can also scale your blue whale (i.e. 1 inch= 1 foot). Use the following link to read more about blue whales

<https://www.natgeokids.com/nz/discover/animals/sealife/10-blue-whale-facts/>

Materials: paper, pencil, ruler, protractor

Use the following link to learn about parabolic curves (you can make curved images using just straight lines) Follow the instructions to create your own drawing

<https://www.whatdowedoallday.com/math-art-withparabolic-curves>

Week 2- Week of July 19th- July 25th

Materials: trees, tape measure, paper, pencil Take a walk or a hike to find older, larger trees. In this activity, you will be measuring the tree to estimate its age. The most accurate form of identifying a tree's age is counting rings however this requires the tree to be cut down. To estimate the age of the tree:

1. Use a tape measure to measure around the trunk of the tree for the circumference. Your point of measurement should be about 4-4 1/2 feet from the ground.
2. Write down the measurement then use the formula $d = \text{circumference} / 3.14$ to find the diameter.
3. Identify the type of tree you are measuring. You can use the following online tree identifier to help you
<https://www.arboday.org/trees/whattree/whatTree.cfm?ItemID=E6A>
4. Once you have identified your tree, multiply your diameter by the tree's growth factor (how fast it grows) Here are some common growth factors
2.0: Aspen, Cottonwood
3.0: Silver Maple, Pin Oak, Linden
3.5: River Birch
4.0: American Elm, Green Ash, Red Oak
4.5: Black Walnut, Red Maple
5.0: Sugar Maple, White Birch, White Oak, Black Cherry
7.0: Dogwood, Ironwood, Redbud
5. This product will give you the estimated age!
6. For an added challenge, try to find a tree that is the same age as you.

Materials: construction paper (two colors), scissors, ruler, glue/ tape In this activity, you will be making life size grizzly bear paws and then comparing them to your hands. A grizzly bear's paws can be 12 inches long and their claws can be four inches long. Begin by using your ruler to draw a line down the center of your construction paper. This will be the longest part of your paw. Cut the top to make it an oval shape. Next, draw small ovals at the top for toes. Cut the edges of the toes so the top is scalloped for each

Make a list of gear that you would need/ want to go on a camping trip for 2 days (at a minimum food, shelter, and water supplies). Use the following sites to pick items that you would bring and add prices to your list.
<https://www.target.com/c/camping-outdoors-sports//N-5xt6e> How much would a camping trip cost if you had to buy all these items? Are there any items you can eliminate to save money? If you were to go camping with 2-3 other people (3-4 total), how would this impact your spending? Would there be items to share or would you need to buy more materials?

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On a separate piece of paper, measure 5 lines about 4 inches long. Cut these lines out as thin triangular claws and add them to your bear toes with glue or tape. Measure your bear paw from base to tip of claw and record the measurement. Now place your hand at the base of the paw and trace. Measure from the base of your hand to the tip of the largest finger. How do the sizes compare? Find the percent difference (what percent larger) is a bear paw compared to your hand?

Week 3 - Week of July 26th- July 31st

Materials: paper, coloring items Begin by drawing Olympic rings on a sheet of paper. Repeat this 3 times (3 sets of Olympic rings). Use each set to solve a different math riddle

1.

1. Place the numbers 1-5 on the lines so that no two consecutive numbers are overlapping
2. Using the numbers 3, 8, 11, 7, 9 arrange them so the bottom two rings have the same total as the top three rings

Using the numbers 7, 15, 13, 21, 14 arrange them so the bottom two rings have the same total as the top three rings

Use the following links to look at data about the 1896 Olympics (the first modern Olympics), Sydney 2000, and the Rio 2016 Olympics. Using the same website (click on Olympic Games at the top) find a fourth Olympics that you want to add to the data.

- <https://www.olympic.org/athens-1896>
- <https://www.olympic.org/sydney-2000>
- <https://www.olympic.org/rio-2016>

Using the information on the website, create 3 different charts or graphs to show how the games have changed by the numbers (i.e. medal counts, athletes competing, number of events, spectators, etc.). Make sure to properly title and label your graph/ chart.

Use geometry to create your own frisbee. Start with 2 sheets of plain paper and scissors. Follow the directions in the link below to make a frisbee then have a competition to see who in your family can throw it the furthest.

<http://almostunschoolers.blogspot.com/2012/05/paperfrisbee-geometry.html>