<u>Geometry</u> EMS ISD Distance Learning - Week of March 30, 2020

Select 1-2 tasks from the choice board on the next page. For each task choose a math concept from any of the below units you have studied this year:

Tools of Geometry – *Identifying, naming, and measuring points, lines, planes, and angles. Comparing angle pairs including supplementary and complementary.*
Reasoning and Proof – *Identifying parts of and writing conjectures and conditional statements. Identifying and completing patterns. Using inductive and deductive reasoning to draw conclusions.*
Parallel and Perpendicular Lines - *Identifying and using properties of parallel and perpendicular lines. Proving lines to be parallel of perpendicular. Writing equations of parallel and perpendicular lines.*
Congruent Triangles – *Identifying congruent figures. Determining if triangles are congruent and use postulates (SSS, SAS, ASA, and AAS). Identifying and using properties of Isosceles and Equilateral triangles.*
Relationships Within Triangles – *Calculating midpoint and distance on the coordinate plane. Identifying special segments in triangles. Identifying and calculating centers of triangles using special segments of triangles. Solving inequalities in triangles and determining if three sides create a triangle.*
Polygons and Quadrilaterals – *Determining the sum of the interior and exterior angles of a polygon. Properties of quadrilaterals: parallelograms, rhombi, rectangles, squares, trapezoids and kites.*
Transformational Geometry – *Identifying and calculating transformations of shapes in the coordinate plane: translations, rotations, reflections and dilations.*
Similarity – *Identifying similar figures and calculating side and angle measurements. Determining if triangles are similar and which postulate would prove similarity (AA, SSS, SAS).*
Right Triangles and Trigonometry – *Using Pythagorean Theorem to find side measurements, including in special right triangles (45-45-90 and 30-60-90). Using trig functions to calculate sides and angles (Sine, Cosine and Tangent). Using angles of elevation and depression with trig functions to calculate distances.*

The task choices provide you opportunities to show your thinking through math processes:
  A. APPLY mathematics to problems in life, society, and the workplace
  B. SOLVE problems by analyzing information, formulating a plan, solving, and evaluating/justifying.
  C. SELECT TOOLS and TECHNIQUES to solve problems.
  D. COMMUNICATE mathematical ideas and reasoning using multiple representations.
  E. CREATE and USE REPRESENTATIONS to organize, record, and communicate mathematical ideas.
  F. CONNECT mathematical ideas.
  G. DISPLAY, EXPLAIN, and JUSTIFY mathematical ideas using precise language.

Materials Needed:
You may use paper and pencils, art supplies, technology apps, or any other materials you have at home to present your ideas.

Optional Online Resources for Reference:
Khan Academy   https://www.khanacademy.org/
Math is Fun   https://www.mathsisfun.com/
Cool Math   https://www.coolmath.com/
Virtual Nerd   https://www.virtualnerd.com/
Graphing Calculators   https://www.desmos.com/calculator
                      https://www.geogebra.org/graphing

CHOICE BOARD

One Pager	**Blog Post or Media Review**	**Multiple Representations**
Include the following: **Border**: Design a symbolic colored border that FRAMES your understanding. **Title**: Title the one-pager to reflect the content and make it STAND out. **Illustration**: Create a central focus related to the content. Be creative in how you illustrate your understanding. **Hashtag**: Create a one or two word #hashtag to narrow down the topic. **Reflection**: Summarize the topic, then reflect on how this can be utilized. (3-5 sentences)	Discuss in your post a career in science, technology, engineering, or math. Research this career so that your blog post contains facts and cite your sources. OR Watch a movie or TV show series episode, or read a news or journal article related to the use of your topic. Write a review and cite your sources.	Identify a real-world scenario related to your topic. Create at least two representations that communicate that scenario, and show how those representations connect to each other. You may use pictures, models, real objects, graphs, tables, equations, and written descriptions.
Contributors to Society Research someone who has made a contribution related to math. Present your research in a format of your choice. Some examples include essay, recording, interview, speech, news story, or visual presentation. Cite your sources.	**Arts and Entertainment** Create a photo, video, music, or art gallery related to your topic. Include brief captions. OR Create a comic strip, short story, poem, song, or children's book related to your topic.	**Reinforcement and Extension** Explore something new or go deeper into what you already know by visiting one of the optional online resources listed on the previous page!