***Geometric Figures*  Family Letter**

**Dear Family,**

In this module, ***Geometric Figures***, students will use their prior knowledge of geometry to develop understanding of angle relationships, triangles and three-dimensional figures. Geometric figures is an important topic for middle school mathematics, with applications in algebra, geometry, probability, statistics, and everyday life!

**What Did Students Learn Previously?**

In previous grades students learned about two-dimensional and three-dimensional geometric figures and finding area, volume, and surface area.

**What Will Students Learn in This Module?**

**Angle relationships**

* Students will gain understanding of **vertical and adjacent angles**. These angles are classified by their position in relation to the other.
* Students will extend their knowledge of the measurement of angles with **complementary and supplementary angles**. These are two angles that combine to sum either 900 or 1800.

**Triangles**

* Students will apply and extend their knowledge of classifying triangles by angle measures and side lengths.
* Students will use their understanding of the classification of triangles to create triangles freehand, with tools, and with dynamic geometric software.

 **Scale Drawings**

* Students will apply their knowledge of ratios and rates to gain understanding of **scale** and **scale factor**.
* Students will apply their knowledge of **scale** to interpret **scale drawings** and **scale models**.

**Three-Dimensional Figures**

* Students will gain knowledge of different types of **polyhedrons** and classify them as **prisms, cylinders, pyramids,** or **cones.**
* Students will apply their knowledge of geometric figures to identify **cross sections** of **planes** and **polyhedrons**. For example, when a **plane** intersects a **pyramid** the result is a triangle.

**What Vocabulary Terms Will Students Use?**

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| **Term** | **Definition** |
| **adjacent angles** | Angles that have the same vertex, share a common side, and do not overlap. |
| **bases** | The two parallel congruent faces of a prism. |
| **complementary and supplementary angles** | Two angles are complementary if the sum of their measures is 90°. Two angles are supplementary if the sum of their measures is 180°. |
| **cone, cylinder, prism and pyramid** | The different types of three-dimensional figures. |
| **congruent** | Having the same measure. |
| **edge, face, and vertex (vertices)** | The parts that make up any three-dimensional solid. |
| **plane** | A two-dimensional flat surface that extends in all directions. |
| **polyhedron** | A three-dimensional figure with faces that are polygons. |
| **scale** | The scale that gives the ratio that compares the measurements of a drawing or model to the measurements of the real object. |
| **scale drawing, scale model** | A drawing or model that is used to represent objects that are too large or too small to be drawn at actual size. |
| **scale factor** | A scale written as a ratio without units in simplest form. |
| **vertical angles** | Opposite angles formed by the intersection of two lines. Vertical angles are congruent. |

**How You Can Provide Support**

1. Support your child’s understanding of geometric figures by pointing out figures and terms that were studied in this section.
2. Encourage your child to have a positive, growth-oriented attitude towards mathematics and their learning.
	* Encourage them to ask questions – both at home and in class. Sometimes, an answer to a question will generate more questions. That’s how you know they are learning!
	* Encourage your child to embrace challenges and remind them that every challenge is an opportunity to learn something new.
	* Celebrate successes – both small and large.
3. Contact me to arrange a time to discuss the specifics of your child’s performance and how we can work together to help them succeed in this module.

Sincerely,

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(Teacher’s Name) (Email/Phone)