LESSON 1-6

Definition of Angle: A figure consisting of two non-collinear rays with a common endpoint.

Sides of an Angle: The two rays that form the angle.

Vertex: The common endpoint of the two rays that form the angle.

Point Location: An angle separates a plane into three distinct parts:

1. *Interior* – the point does not lie on the angle itself but lies on a line segment whose endpoints are on the angle
2. *Exterior* – the point is neither on or in the interior on the angle
3. *On* – the point is on one of the rays (not the endpoint) that make up the angle.

Angle Measure: In geometry an angle is measured in degrees, where a full circle is 360 degrees. A protractor can be used to find this measure.

Postulate 1-3 (Protractor Postulate): Given ray AB and a number r between 0 and 180, there is exactly one ray with endpoint A, extending on either side of ray AB, such that the measure of the angle formed is r.

Postulate 1-4 (Angle Addition Postulate): If R is in the interior of $\angle PQS$, then the $m\angle PQR + m\angle RQS = \angle PQS$. If $m\angle PQR + m\angle RQS = \angle PQS$, then R is in the interior of $\angle PQS$.

Definition of Right, Acute, and Obtuse Angles:

1. $\angle A$ is a right angle if $m\angle A$ is 90.
2. $\angle A$ is an acute angle if $m\angle A$ is less than 90
3. $\angle A$ is an obtuse angle if $m\angle A$ is greater than 90 but less than 180.

Congruent Angles: Have the same measure.

To construct an angle congruent to ∠ DEF:

1. Draw a ray with endpoint G.
2. With your compass point on E, draw an arc intersecting both sides of ∠DEF.
3. Make an identical arc with compass point on G, so that the arc intersects the ray.
4. Adjust the compass to match the length of the original arc.
5. Mark this length on the second arc and label it H.
6. Dray a ray from G through H.

Angle bisector: A line segment or ray that divides an angle into two congruent angles.

To bisect an angle (∠A):

1. Place the compass point on A and draw an arc, locating points B and C.
2. Place the compass point on B and draw an arc. With the same setting, place the compass point on C and draw an arc, locating point D.
3. Draw a ray, AD, which is the angle bisector of ∠A.