**CIRCLES: 12-13 DAYS**

**Key vocabulary:**

* circle, center, radius, diameter, chord, chord segments, secant, tangent, common tangent, congruent circles, tangent circles, concentric circles, interior of a circle, exterior of a circle, point of tangency, circumscribed, and inscribed.

**Students will be able to...**

* Identify and describe relationships among inscribed angles, radii, and chords (Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.).
* Understand and apply theorems about circles (e.g. perpendicular bisector of a chord).
* Create algebraic equations based on properties and theorems for circles and use them to solve problems.
* Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.
* Construct the inscribed and circumscribed circles of a triangle.
* Prove properties of angles for a quadrilateral inscribed in a circle.
* Graph circles using the equation.
* Complete the square to find the center and radius of a circle given by an equation.
* Derive the equation of a circle of given center and radius using the Pythagorean Theorem

**Essential Questions**

* Do perfect circles naturally occur in the physical world?
* How does the use of circles impact modern society? How have circles changed history?
* What properties of circles make them useful in modeling situations?
* How are angles and intercepted arcs of circles related and applied?
* How are arc lengths applied in the real-world?
* How are sector areas used in the real-world?
* How does similarity affect how circles are used?
* How can we model a situation using the equation of a circle? A graph of a circle?
* How does the transformation of a circle affect its equation?
* How is the equation of a circle related to the Pythagorean Theorem?

**Day 12: Feb. 10 & 13**: Intro to circles, Vocab.: circle, center, radius, diameter, chord, Chord segments, secant, tangent, common tangent, congruent circles, tangent circles, concentric circles, interior and exterior of a circle, point of tangency, circumscribed and inscribed. And formulas for:Area and Circumference.

**Day 13: Feb. 14 & 15**: Central Angles & Arc Measures, Arc Lengths

**Day 14: Feb. 16 & 17**: Chords and Arcs

**Feb. 17 – End of the 4th 6 weeks**

**Feb. 20 – No School, Presidents Day**

**Day 15: Feb. 21 & 22**: Review and quiz 10-1

**Feb. 23: Parent/Teacher Conferences 4:30p – 7:30p**

**Day 16: Feb. 23 & 24**: Inscribed Angles

**Day 17: Feb. 27 & 28**: Tangents

**Day 18: March 1 & 2:** Angles formed by Chords, Secants, & Tangents

**Day 19: March 3 & 6:** Review and Quiz 10-2

**Day 20: March 7 & 8:** Algebra Review of Factoring and Completing the Square

**Day 21: March 9 & 10**: Equations of Circles

**Day 22: March 13 & 14:** Review Circles

**Day 23: March 15 & 16**: Test over Circles