Lesson Title   Circle Art
Length of Lesson   3 days
Created By   John DuFour
Subject   Geometry, Algebra II
Grade Level   10-12
State Standards   Geometry 2b, Algebra II 3e
DOK Level   2

DOK Application:
Graph a set of circles such that they form an artistic picture, relate the circles to their appropriate equations, summarize the parts of circle equations.

National Standards:
Analyze properties and determine attributes of two- and three-dimensional objects.

Graduate Research Element: None

Student Learning Goal:
The student will learn all equations of circles, how to graph circles, and understand how the equation of a circle and its graph are related.

Materials Needed (supplies, hand-outs, resources):
graph paper, colored pencils, regular pencil

Lesson Performance Task/Assessment:
Students will draw a set of circles such that they form an artistic picture. Next, the students will be taught the equations of circles. Following this, the students will write the equation of every circle in their work of art. The teacher will check that the equations match the art.

Lesson Relevance to Performance Task and Students:
Student will learn the equations of circles and how to graph the equation of a circle.

Anticipatory Set/Capture Interest:
Show works of art which are composed of mostly circles. Pass out materials and direct the students to make their own circle art.

Guided Practice:
Students will write equations of all circles included within their work of art.

Independent Practice:
Students will draw a work of art composed exclusively of circles.

Remediation and/or Enrichment:
Guided seat work and one-on-one assistance will be available. Individual IEP's will be supported. Partner help may be allowed on a case by case basis.

As an enrichment opportunity, challenge students to create works that are extensive, and include other geometric shapes that have equations.

Check(s) for Understanding:
Observe that the equations generated are indeed on the graph.

Closure:
Display high quality work. Show other works of art that are mathematical in nature.

Possible Alternate Subject Integrations: Art

Teacher Notes:
A fun activity that incorporates graphs and equations of circles. As other types of equations are learned, additional art can be generated using a wider variety of equations, shapes, and or lines.