

TESSELLATION PROJECT RUBRIC

| Criterion | Point Value | Review |
|---|-------------|--------|
| Accuracy | 20 | |
| The mathematics involved is done correctly | (14-20) | |
| The mathematics is partially correct | (8-13) | |
| The mathematics is attempted but incorrect | (1-7) | |
| Completeness | 10 | |
| The project is mostly done as described | (7-10) | |
| The project is almost complete | (4-6) | |
| The project is not complete | (1-3) | |
| Documentation | 10 | |
| Pattern is attached or evident (transformation is clear) | (7-10) | |
| Pattern is mostly evident (transformation is partially clear) | (4-6) | |
| Pattern is not evident (transformation is not clear) | (1-3) | |
| Design & Layout | 5 | |
| Tessellation drawing appears to be well-planned | 5 | |
| Tessellation drawing only partially thought through | (3-4) | |
| Tessellation drawing thrown together quickly | (1-2) | |
| Aesthetics | 5 | |
| Drawing is neat (clean erasures, etc) and artistically done | 5 | |
| Drawing is mostly neat | (3-4) | |
| Drawing is not neat | (1-2) | |

Distinguished: Work is complete and accurate and goes above and beyond standard expectations. Uses more complex polygons (hexagons, kites) and/or transformations include 3 centers and 3 fold rotation. Drawing is artistically excellent.

Above Mastery: Work is complete and accurate. Uses more complex polygons and transformations- artistic ability is not as accomplished as distinguished.

Mastery: Work is complete and accurate. Uses isosceles or equilateral triangle, parallelograms. Transformations include translations and midpoint rotations. Artistic ability is not necessary or evident.

Partial Mastery: Work is partially completed and/or mostly accurate. Polygons used may include equilateral triangles and parallelograms. Transformations are basic.

Novice: Work is less than 50% complete and inaccurate. Polygons used may include equilateral triangles and parallelograms but transformations are inaccurate or not consistently portrayed.

Project Description:

* Research and define what a tessellation is and find examples. This will be done utilizing the Internet as well as books. Students will examine M.C. Escher's work. An Art Teacher will collaborate with Geometry teacher by presenting discussions about shading, etc.

* Students will create tessellations pattern by choosing a polygon (triangle, parallelogram, kite, or hexagon). Transformations utilized will be identified.

* Students will create drawings that tessellate polygons using techniques illustrated in class on paper provided.

- Aesthetics are important - shade or color as you feel is necessary.

CSO's: G.3.18, G.3.14

Modifications/Accommodations:

- Allow students to work in pairs to create tessellation
- Give students a teacher created pattern so all they have to do is tessellate
- Prompt students to use less complex polygons, such as triangles or parallelograms

www.tessellations.org

<http://www.coolmath.com/tesspag1.htm>

<http://www.mcescher.com/>