Tessellation Project For Geometry

A tessellation, or tiling, is an arrangement of shapes that completely cover a surface without overlapping and without leaving any gaps. You will design a tessellation. Regular polygons that tessellate are triangles, squares, and hexagons. Computer generated fundamental regions are acceptable, but the entire project may not be computer generated. Tessellations.org is a web site to get some direction of ways to make your fundamental region.

The tessellation will be graded based on the following criteria:

**Deadlines 5 points**

| Rough draft with piece | November ¾, 2008 |
| Research completed    | November 17/18, 2008 |
| Final draft with piece and paper | November 24/25, 2008 |

**Sign off**

Following Specifications 8 points

*Your project must measure a minimum of 12” x 16”.
*Your project must be done on paper heavier than regular weight paper.
*Your design will be at least two colors, but may be more. For color you may use markers, crayons, colored paper, pencils, paint.
*Your name needs to be on the back of your project.

**Difficulty 10 points**

5 points -- basic shape (square, rectangle, hexagon)
6 points -- simple straight sided shape
7 points -- simple shape with slight curves and straight edges
8 points -- simple shape with all curves
9 points -- lots of curves
10 points – very intricate shape

**Neatness and Care 10 points**

7 points – terrible coloring --- gaps ---
8 points -- okay coloring -- tracing errors --- shapes are not all alike in picture
9 points -- good coloring – no gaps -- shapes may not all be the same (few mistakes)
10 points – great coloring – no gaps -- shapes are the same – no mistakes

**Effectiveness and Originality 20 points**

12 points – plain and ugly
13 points – plain with no design – dull color
14 points – plain with no design – eye catching coloring
15 points – a design but not very appealing
16 points – a design – somewhat appealing to the eye
17 points – creative design – not eye-catching in color
18 points – creative design, somewhat eye-catching in color, original, (an okay Esher)
19 points – well done Esher
20 points – very eye catching, appealing, original
Written Paper 15 points

The written portion (in essay form) must include the following information/guidelines:
1. What is a tessellation?
2. What are some historical and geographical connections?
3. What are some real life examples of tessellations in today’s world?
4. What polygon(s) were used to create your project?
5. Describe how you made your fundamental region.
6. How did you put the design on the paper?
7. Are there any symmetries (line or rotation) in your final project?
8. Approximately how much time you spent on the project.
9. What did you learn from this project – mathematically/historically?
10. Any addition information.
11. Citation of resources used.
12. MLA Format with correct spelling and grammar
13. Minimum of three pages and maximum of 5 pages
14. Also attached to your written report must be your “fundamental region.”

15 – 14 pts
• Clear purpose and point of view
• Effective development
• Logical and coherent organization
• Varied sentences and effective word choice
• Consistently follow rules of grammar and mechanics
• Effectively uses a wide variety of valid and reliable sources
• Sources are accurately cited
• Summarizes and paraphrases information effectively

13 – 11 pts
• Identifiable purpose and point of view
• Evident organization
• Clear and adequate development
• Some varied sentences and some effective word choice
• Frequently follows rules of grammar and mechanics
• Effectively uses a variety of valid and reliable sources
• Most sources are accurately cited
• Generally successful in summarizing and paraphrasing information

10 – 8 pts
• Limited purpose and point of view
• Emerging organization
• Minimal development
• Few varied sentences and little effective word choice
• Inconsistently follows rules of grammar and mechanics
• Uses minimal sources
• Sources are inaccurately cited
• Sometimes summarizes and paraphrases information
7 – 1 pts

- Unclear purpose and point of view
- Illogical and incoherent organization
- Ineffective development
- Little variation in sentences and weak word choice
- Rarely follows rules of grammar and mechanics
- Rarely uses sources
- Sources are not cited
- Fails to summarize and paraphrase information

**Late projects will not be accepted for any reason!**