



**International Center  
for Leadership  
in Education**



**Gold Seal Lesson:**

Copernicus Education Gateway

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<b>Grade Span</b>			<b>ICLE Application Model</b>			
<b>K-4</b>	<b>5-8 XX</b>	<b>9-12 XX</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D X</b>

## Instructional Focus:

### Geometry

Students apply geometric concepts, properties, and relationships in a problem-solving situation. Students communicate the reasoning used in solving these problems.

### Reading

Students read a variety of grade level materials, applying strategies appropriate to various situations

### Writing

Students write for a variety of purposes and audiences with sophistication and complexity appropriate to the grade level.

## Performance Task

Cornelis Maurits Escher was an early 20<sup>th</sup> century Dutch graphic artist noted for his distinctive prints depicting intricate interlocking patterns. Your job in this task is to pretend that you are a clothing designer who has been asked to create a tie design based on the art style of Escher. You are to prepare the following:

1. a short word processed report on the life and art of Escher,
2. a mathematical explanation of what a tessellation is and how one is created, and
3. an accurate drawing of your tie design depicting a tessellation.

## ICLE Essential Skills

Understand the concepts of *symmetry and transformations* and graphically apply line reflections, rotation, translations, and dilation. (m55)

Understand the concepts of direct and opposite *isometries* (i.e., transformations that preserve distance such as reflections, rotations, translations, and glide reflections, and be able to graphically apply them. (m75)

Apply in writing the rules and conventions of grammar, usage, punctuation, paragraphing and spelling. (ela1)

Identify, collect and/or select pertinent information while reading. (ela5)

## Scoring Guide:

### Report on the Life and Art of Escher

- 4 A well written and thorough report on the life and the art of Escher is presented. The student demonstrates good research, writing, and word processing skills. The report is concise, interestingly written, and informative to the reader.
- 3 The written report is thorough, but the presentation is lacking in detail. The student demonstrates adequate research ability, but does not present the material in a very interesting way. Some minor errors occur in grammar and in spelling. The student has a fair command of using a word processor.
- 2 The written report is sketchy and not well presented. The student demonstrates only minimal research skills and has poor word processing skills. Several errors occur in the written material. The report is not interesting and lacks engagement of the reader.
- 1 The written report is unsatisfactory. It contains few details and it is obvious that the student did little research to get information. The written material contains numerous errors. The student demonstrates a lack of word processing skills. The report is vague, uninteresting, and says little.

### Explanation of Tessellation

- 4 The student gives a clear explanation of tessellation, showing an understanding of the geometry of transformations. It is clear that the student knows how a tessellation is created.
- 2 The student has difficulty stating a clear meaning of tessellation, showing that he/she does not have a complete understanding of the geometry of transformations. The student is not convincing in his/her ability to create a tessellation.
- 3 The student's explanation of tessellation is vague and unclear, showing that he/she has only minimal understanding of the geometry of transformations. The student has trouble explaining how a tessellation is created.
- 1 The student's explanation of tessellation is meaningless, showing that he/she has little, if any, understanding of the geometry of transformations. The student does not explain how a tessellation is created.

### Design of Tie

- 4 The student has no difficulty making a tessellation design. His/her drawing is attractive, accurate, and extremely neat.
- 3 The student has some difficulty creating a tessellation for his/her tie design. The drawing is fairly well done, but is not totally accurate, lacks a high degree of neatness, or is not particularly attractive.
- 2 The student has much difficulty making a tessellation design. His/her drawing is inaccurate, is not very neat, and is not attractive.
- 1 The student puts forth little effort in making a tessellation design. It is obvious that the student has little understanding of what he/she is doing. No meaningful product is produced.

## Keywords

<b>English Language Arts</b>	<b>Mathematics</b>	<b>Science</b>
<b>Reading</b> In Context Research Technology	<b>Algebra</b>	<b>Earth Science</b>
<b>Writing</b> Technology Integration Word Processing	<b>Geometry</b> Geometry in Daily Life Optical Illusions Symmetry Tesselations	<b>Life Science</b>
<b>Communications</b>	<b>Statistics</b>	<b>Chemistry</b>
<b>Literature</b>	<b>Calculus</b>	<b>Physics</b>
<b>Other</b>	<b>Trigonometry</b>	<b>Other</b>
	<b>Other</b>	