

Appendix 6.2

Do You Tessellate?

This learning situation invites you to enter the wonderful world of computer animation by exploring two situations in which transformations can be used to create a tessellation (explorations 1 and 2). This activity will also allow you to discover an important property of triangles (exploration 3).

Proposed Approach

- Using the triangles you received, perform explorations 1 and 2.
- As you draw a triangle in a tessellation, assign the numbers 1, 2, and 3, to identify each of its angles. This identification will be useful for your exploration.
- In preparation for the mathematical exchange, glue your tessellations on a large sheet of paper after each exploration (1 and 2).
- Perform exploration 3.

Exploration 1: Creating Tessellations Using Translations

- a) Determine if it is possible to create a tessellation using only a series of successive translations.
- b) Can you complete your tessellation by adding another transformation? Explain how.
- c) Do you think your findings are true for any given triangle? Why?

Exploration 2: Creating Tessellations Using Rotations

- a) Determine if it is possible to create a tessellation using only a series of successive rotations, with the center of rotation located on the midpoint of one of the sides of the triangle.
- b) Do you think your findings are true for any given triangle? Why?

Exploration 3: Property of Triangles

- a) What do you notice about angles at any given point where 3 or 6 triangles meet?
- b) What can you say about the sum of the measurements of the angles of a triangle?

Preparation for the mathematical exchange

Prepare a short presentation of your hypotheses and conclusions related to each of the explorations by supporting them with clear, fair and convincing mathematical arguments.