Appendix 6.3

## 🎯 Key Findings from the Learning Situation

Exploration 1: Creating Tessellations Using Translations

It is not possible to create a tessellation from a triangle using only translations since there will always be spaces of the same shape as the triangle. However, it is possible, with any triangle, to create a tessellation if we add another transformation to the translations, for example, a rotation whose center is on the midpoint of one of the sides of the triangle.
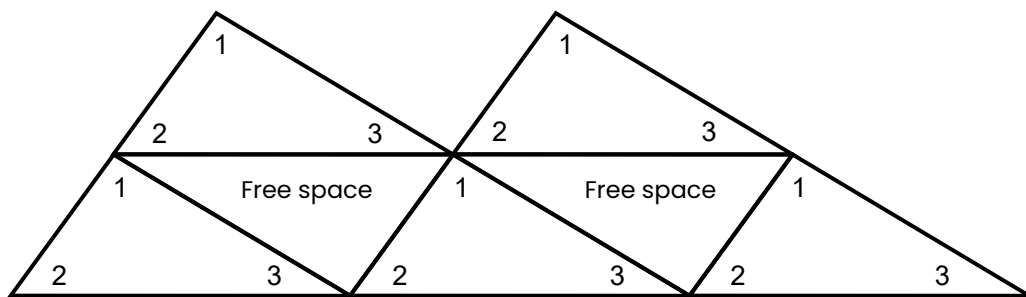
Exploration 2: Creating Tessellations Using Rotations

It is always possible, with any triangle, to create a tessellation using only rotation whose center is on the midpoint of one of the sides of the triangle.

Exploration 3: Property of Triangles

In the tessellations created in either of the above situations, we can see that at each point where three triangles meet, there is a straight angle which is usually formed by the three angles of the triangle (angles 1, 2 and 3). Since we know that a straight angle measures 180º, we can conclude that the sum of the measurements of the angles of a triangle is equal to 180º. The same conclusion can be reached by noting that at each point where six triangles meet, there is a full angle that is usually formed by two representations of each of the angles of the triangle (2 times each of angles 1, 2 and 3). Since we know that a full angle measures 360º, we can conclude that by adding the measurements of each of the angle of the triangle once, we will get half of 360º, that is 180º.