**Activity 3.7.2 Regular Tessellations**

A **regular tessellation** contains only regular polygons. All the polygons must have the same number of sides.

In this activity you will discover which regular polygons tile the plane and which do not.

You may cut out polygons from the template for this activity if you prefer.

1. Fill in this table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type of polygon | Number of sides | Measure of each interior angle | Will this regular polygon tile the plane? (yes/no) | If yes, how many polygons are there at each vertex? |
| Equilateral Triangle |  |  |  |  |
| Square |  |  |  |  |
| Regular Pentagon |  |  |  |  |
| Regular Hexagon |  |  |  |  |
| Regular Heptagon |  |  |  |  |
| Regular Octagon |  |  |  |  |
| Regular Nonagon |  |  |  |  |
| Regular Decagon |  |  |  |  |

1. Explain why a regular polygon with more than 10 sides will not tile the plane.
2. Explain why a regular pentagon will not tile the plane.
3. Complete this sentence: The only regular polygons that tile the plane are \_\_\_\_\_\_\_\_\_\_\_\_  
   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_