

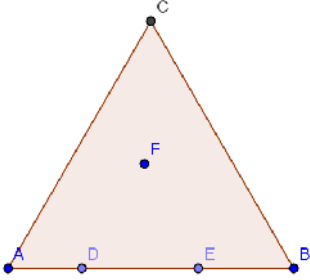

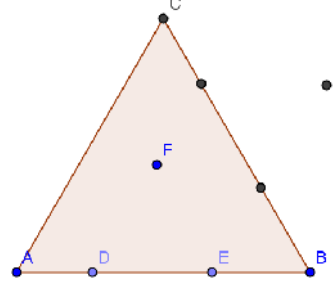
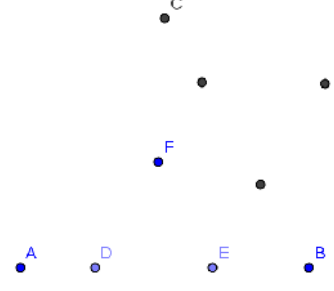

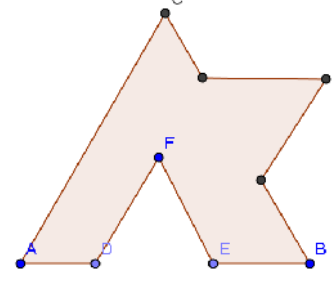
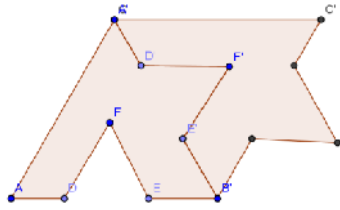


Creating Tessellations in GeoGebra

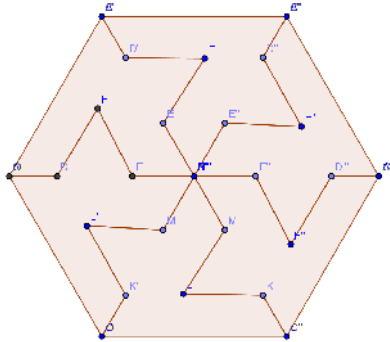
	<p>1. Use the Regular Polygon tool to construct an equilateral triangle.</p>
	<p>2. Use the Point tool to construct points D and E on segment \overline{AB} and point F in the interior of the triangle.</p> 
	<p>3. Use the Rotate Object around Point by Angle tool to rotate point D around point B 60° clockwise. Repeat for points E and F.</p> 
	<p>4. Right-click in the interior of the triangle and deselect Show Object to hide the triangle.</p> 
	<p>5. Use the Polygon tool to construct polygon $ADFEBE'F'D'C$.</p> 



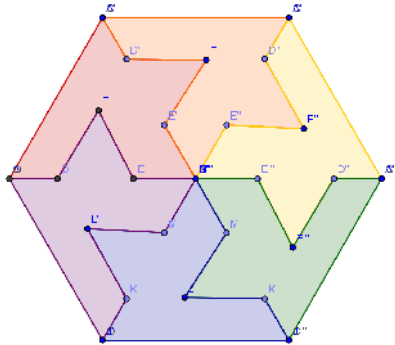
6. Use the **Rotate Object around Point by Angle** tool to rotate the polygon 60° clockwise around point B .



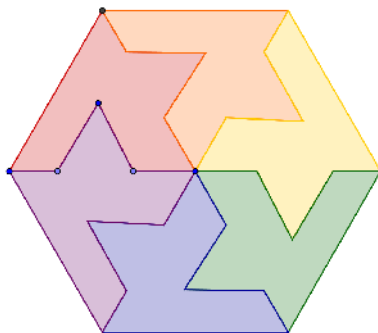
Continue to rotate the new images around point B until you fill the space around vertex B .



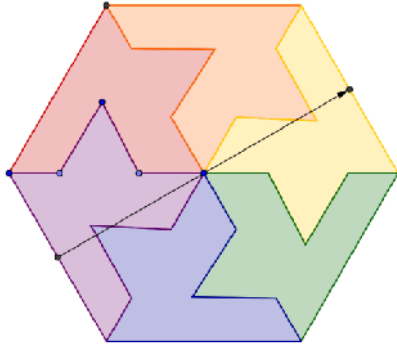

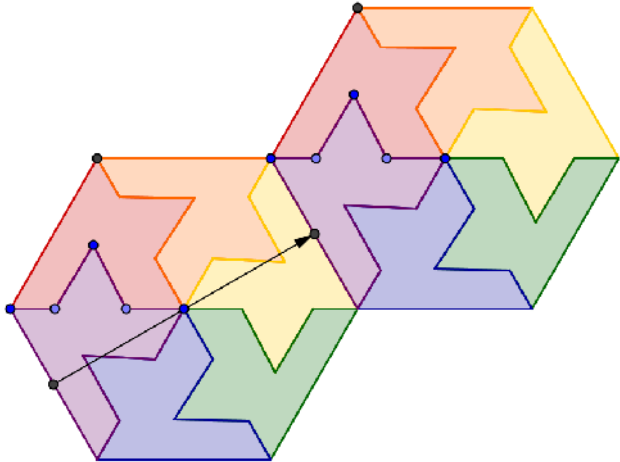


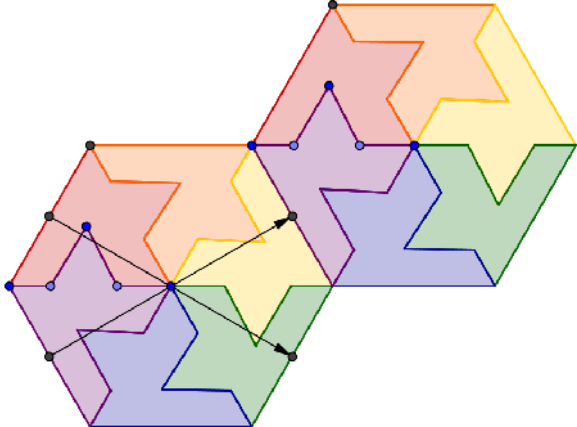


7. Color each of the six polygons a different color. Right-click a polygon, go to **Object Properties** and click the **Color** tab. Select a color and click **Close**. Repeat for the remaining five polygons. Click the **Style** tab to increase the filling if desired.



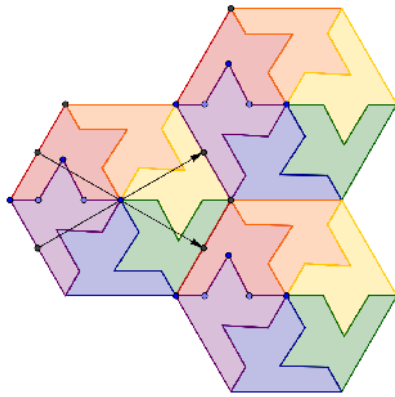
8. Turn off labels for all points except A, B, C, D, E, F . Right-click a point and go to **Object Properties**. Use Ctrl-click to select all points except for A, B, C, D, E, F . Uncheck **Show Label** and **Show Object**.



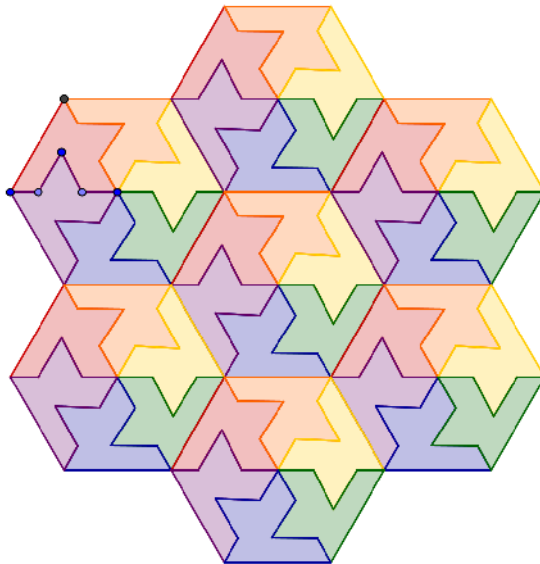
 	<p>9. Use the Midpoint or Center tool to construct the midpoint on an outer edge of one of the polygons. Construct the midpoint on the outer edge of the opposite polygon. Use the Vector between Two Points tool to construct a vector from one midpoint to the other.</p> 
	<p>10. Use the Translate Object by Vector tool to translate each of the six polygons.</p> 
 	<p>11. Use the Midpoint or Center tool to construct the midpoint on an outer edge of another one of the polygons. Construct the midpoint on the outer edge of the opposite polygon. Use the Vector between Two Points tool to construct a vector from one midpoint to the other.</p> 



12. Use the **Translate Object by Vector** tool to translate each of the six polygons.



13. Repeat the previous step to continue tessellating shapes in the plane.



14. Drag points *A, B, C, D, E, F* to change the shape of the tessellation.

