**Activity 1.5.3b Composition –Two Rotations**

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| **Construction Steps**In this activity you will construct a triangle and draw the image under a $120°$ counterclockwise rotation by carrying out the steps that follow for **Drawing a Rotation Image**.**Step 1**Construct $∆ABC $and Point P (center of rotation) on a sheet.  |
| **Step 2** Draw a segment connecting vertex *A* and the center of rotation point *P*. | **Step 3**Use a protractor to measure a 120° angle counterclockwise and draw a ray. |
| **Step 4** Place the point of the compass at *P* and draw an arc from $A to locate A^{'}$ | **Step 5** Repeat Steps 1–3 for each vertex. Connect the vertices to form the image. |

**Exploration Steps and Comprehension Questions**

1. **Choose two positive integers whose sum is 120**.

Record your integer values: $n\_{1}= \\_\\_\\_\\_\\_\\_ n\_{ 2 }= \\_\\_\\_\\_\\_\\_$

Draw all of the rotation images that result from the steps below on the same sheet of paper you used to complete the **Construction Steps.** Use the steps outlined on the previous page for **Drawing a Rotation Image** to complete **step b and c**.

1. Rotate $∆ABC$ counterclockwise around *P* by an angle measure equal to $n\_{1}$. **Draw the image that results**.
2. Rotate **the figure that resulted from step b** counterclockwise around *P* by an angle measure equal to $n\_{2}$. **Draw the image that results**.
3. **Comment on any relationship you observe between the two smaller rotations and the larger rotation.**

**e. Compare your results with those of your fellow students who may have chosen different values for *n*1 and *n*2.**