# Higher-Level Reflections

Students may apply Costa's Levels of Thinking to write authentic, higher-level reflections.

## Costa's Levels of Thinking

| Lower-Level Thinking | | Higher-Level Thinking | |
|---|---|---|---|
| • classify | • list | • analyze | • hypothesize |
| • complete | • observe | • compare | • if/then |
| • define | • paraphrase | • contrast | • imagine |
| • describe | • recall | • demonstrate | • infer |
| • discuss | • recite | • distinguish | • judge |
| • duplicate | • repeat | • forecast | • predict |
| • explain | • select | • generalize | • sort |
| • identify | | | • speculate |

## Student Samples

***Lower-Level Reflection***

Today I learned that the perimeter of a polygon is the sum of the lengths of all its sides. A polygon is a figure with many sides. An n-gon is a polygon with n sides. The inside of a polygon is called the body. Since a rectangle has 4 sides, and the opposite sides of a rectangle have the same length, a rectangle with sides 5 cm and 8 cm would have a perimeter of 26 cm. I was able to get this answer by adding all the lengths together (5+5+8+8). Tony asked me to look at my notes to see if I had done a similar problem. Lucia asked me to draw a picture of the rectangle and record the lengths of all the sides. Since I had I was able to review what we did in class to figure out that I needed to add all the sides together. When I write my answer to a perimeter problem, I need to remember to indicate the specific units I'm using. The units for this perimeter problem were centimeters. *(Describe)*

### *Higher-Level Reflection*

**The point of confusion was** that I didn't understand the difference between perimeter and area. **What I learned about the point of confusion is** that the perimeter of a polygon is the sum of the lengths of all its sides while the area of a figure measures the size of the enclosed region of the figure. **I gained a greater understanding of the point of confusion when** Lucia expressed area as square units and perimeter as just units and showed me a visual. She asked me to look at my CN from Mr. Fox's class again that had an example. The example showed a picture where the perimeter of a figure would be centimeters while the area would be described as square centimeters. So I'm thinking that if a polygon has sides that measure 5 cm and 8 cm, the perimeter (5+5+8+8) would be 26 cm while the area of the polygon (5 x 8) would be 40 square cm. **This learning is important because** in my own life, I needed to know the perimeter of my poster paper for my science project when I was making a special border for it last week. Also, my father asked me to help him calculate the area of our kitchen floor at home when he needed to find out how many tiles to buy. **What I found meaningful about my tutorial session today is** a lot of times I take notes and I don't always record a visual to help me remember and understand what I learned. Visuals really help me so I need to include diagrams or pictures in my CN. *(Evaluate/Generalize)*