Constellation Boxes that Teach Perspective and Vantage Point

*These STEM-on-the-Cheap models can be constructed by the teacher to use as a demo or inquiry lab with younger students. They can be by constructed by older students in random patterns to investigate or used to challenge students with creating an accurate model of a known constellation to reinforce the concepts and help with understanding of the **celestial sphere** (while practicing their research and math skills). The American Museum of Natural History has a detailed lesson for this activity with a more complicated model that is still relatively inexpensive and utilizes a download of 'Digital Universe' software from http://www.haydenplanetarium.org/hp/vo/du/index.html .*

Materials:

- any small box with at least two sides open
- scissors
- masking tape
- tin foil
- fishing line

Step 1:

Cut enough foil into randomly sized pieces and fishing line into random lengths for the number of stars you want. You can adjust the sizes for scaled models by adding foil or trimming the line.

Step 2:

Tape one end of each line to a piece of foil and then wrap the foil, squishing it into a ball shape.

Step 3:

Tape the other end to the top, inside of the box, adjusting the length and placement as needed to fit your desired model. Hanging some at the intersection of two planes will add to student's discovery as they see three stars from one vantage point and four from another. Using a larger box to model known constellations is recommended as some stars are really a lot further apart than they appear from here.

> Check out yorkuniverse.com - *York Universe Attends 'What's up in Space?'* to see how to make a kinesthetic model of Orion with your students!)