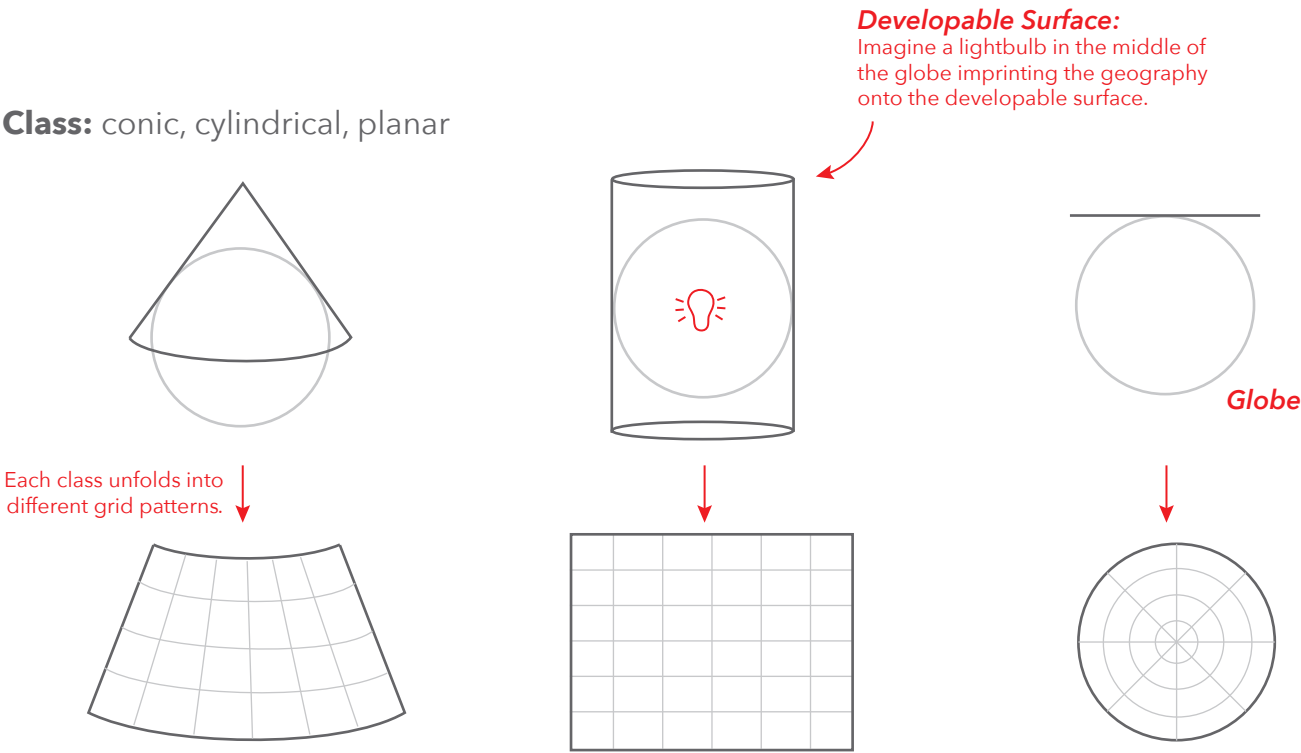


# Scenario

Your friend is a travel buff and wants to make a map of their flights out of Dane County Regional Airport (MSN) that allows readers to measure how many miles they have flown on each flight leaving and returning to Madison. What projection would you tell them to use?

1 **Distortion:** form, area, distance, direction  
In this scenario, we want to **preserve distance**. We're looking for an equidistant projection.

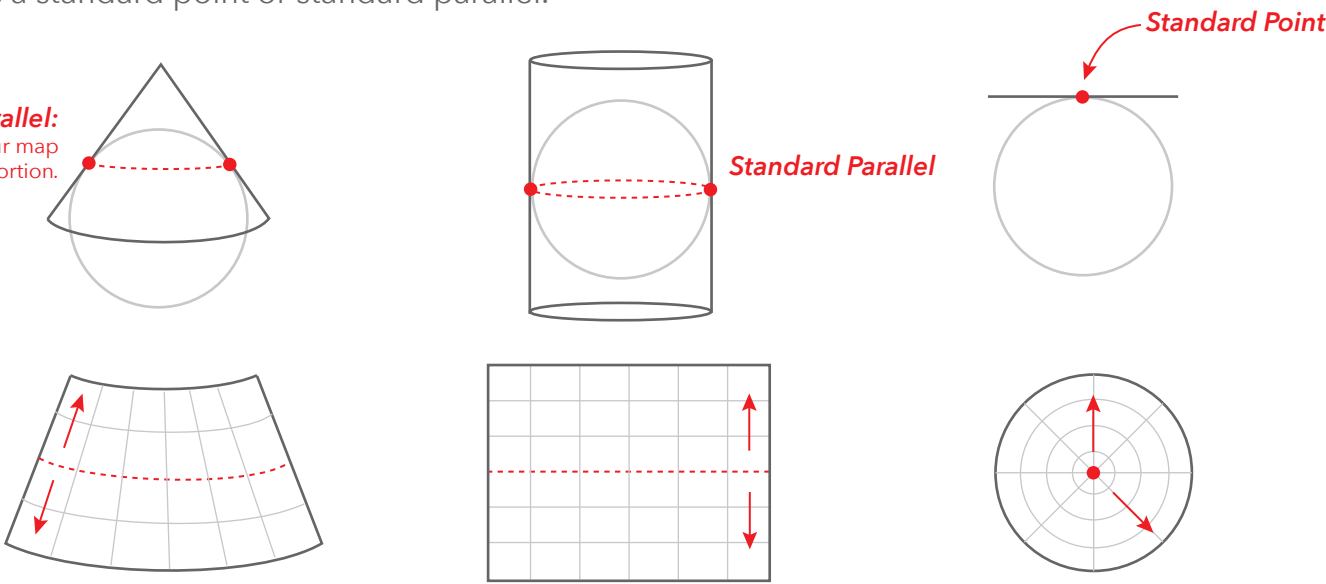
2 **Class:** conic, cylindrical, planar



3 **Case:** tangent or secant  
In the example above, the developable surfaces touch the globe in one place. This is a tangent case. This is translated in the developable surfaces as a standard point or standard parallel.

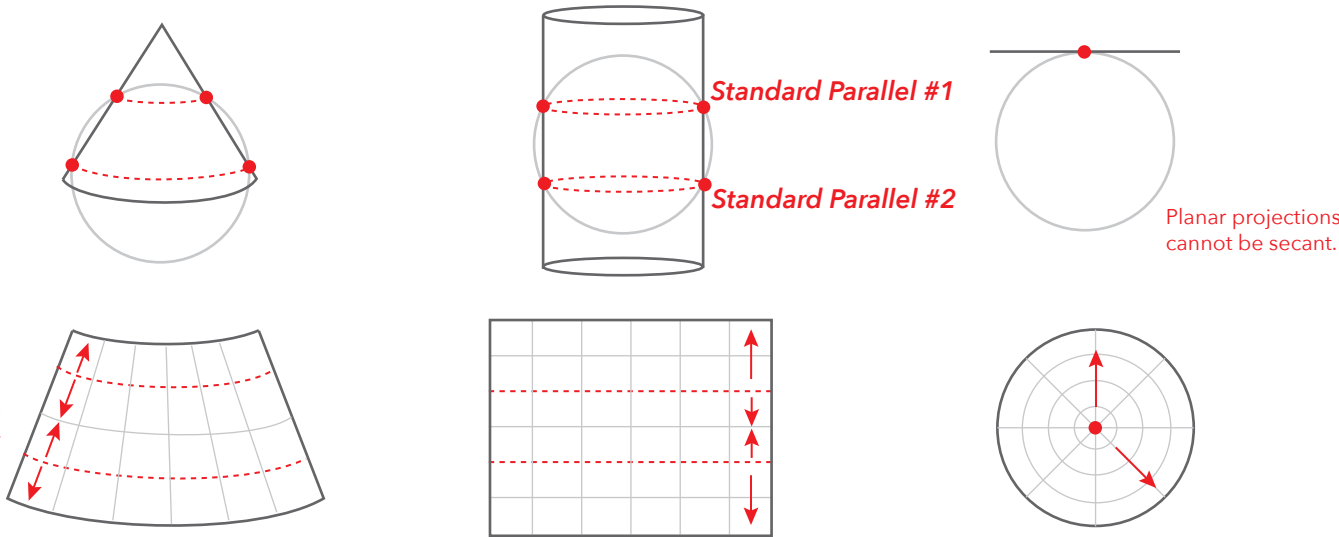
**Standard point or parallel:**  
The only location on your map with no distortion.

**Distortion:**  
Distortion increases as you move away from a standard point or parallel.



**Secant projections** intersect the globe resulting in two standard lines.

**Less Distortion:**  
Two standard lines results in less overall distortion.



**Tips:** Make sure your standard parallels divide your map into thirds to limit distortion. Standard points should be placed at the center of your map. You can manually manipulate standard parallel and point locations in ArcMap

4 **Aspect:** normal, transverse, oblique  
Aspect refers to the orientation of the developable surface. All of the examples above are in normal aspect. Transverse and oblique aspects are illustrated below.

**Transverse Aspect**

**Oblique Aspect**

