1086-K1-2722 Shirley Yap\*, shirley.yap@csueastbay.edu. *What's in an octave?* Preliminary report. Scales are ways to divide the set of frequencies between a given note and the octave above it. We can use the concept of frequency doubling and symmetry to attempt to construct a scale. This activity (which has a lab component to it), can be used to teach exponential functions, symmetry and invariance. (Received September 25, 2012)