Alkenes – Stereoisomerism and geometry

Pre-lesson assignment – see page 195-200.

Define

- Stereoisomerism
- E/Z isomerism
- *Cis-trans* isomerism

Now watch the video tutorial on E/Z Isomerism

Make notes on stereoisomerism and geometry

1. Compare the bond angle H-C-H in an alkane and an alkene. Compare the resulting shape: Draw each in 3D using ethane and ethene as examples.
2. Explain why E/Z isomerism arises. What conditions have to be true for a molecule to have E/Z isomerism?
    a. Use But-2-ene as an example of E/Z isomerism.
    b. Explain why but-1-ene does not show E/Z isomerism.
3. Explain the special case of *cis-trans* isomerism.
    a. Use pent-2-ene as an example of *cis-trans* isomerism.
    b. Explain why 3-methylpent-2-ene does not display *cis trans* isomerism, but does display E/Z isomerism.
    c. Does 2-methylpent-2-ene satisfy any of the criteria?
4. Briefly explain how to assign priority to groups using CIP nomenclature.
    a. Use $CHClC(CH_3)CH_2CH_3$ to demonstrate.