Alkanes and isomerism

Pre-lesson assignment – Textbook page 182, 190-192

Define the following terms

- Structural Isomer
- Fractional Distillation
- London Forces
- Sigma bond

Now watch the video on London Forces in Alkanes

Make notes on isomerism in alkanes

Use the following questions as guidance

1. Draw the 3D shape of methane, and give the bond angle
2. Draw all of the structural isomers of hexane. There are 5 in total.
3. Briefly explain how fractional distillation separates crude oil, a mixture of alkanes.
4. Use the following data to plot a graph of boiling point of alkanes.

   Plot the **relative mass** on the *x*-axis and the **boiling point** on the *y*-axis.

Alkane	**Boiling point / °C**
Methane	-162
Ethane	-89
Propane	-42
Butane	0
Pentane	36
Hexane	69
Heptane	98
Octane	126
Nonane	151
Decane	174

YOU WILL NEED THIS GRAPH IN THE LESSON.

5. Explain the effect of increasing hydrocarbon chain length on boiling point.
6. Explain the effect of branching of hydrocarbons on boiling point.