Benzene and the Kekule Model

Pre-lesson assignment- textbook page 432-434 (scanned)

Define the following terms

- Arene
- π-bond

Make notes on the Kekule model

Use the following questions as guidance

1. Draw a diagram showing a π-bond in ethene
2. Predict the reaction of ethene with Br_2
3. Draw the first step of the mechanism of the reaction of ethene with Br_2
    a. Why is the orientation of the Br_2 important?
    b. Why is Br_2 an electrophile in this reaction?
4. Draw the Kekule model of Benzene.
    a. Show, using an equation, the reaction that **should** happen when Br_2 is added to Kekule's benzene
    b. Using a ruler, sketch the shape of Kekule's benzene. C-C bonds are 0.153nm in length, and C=C bonds are 0.134nm in length. Use a scale of 1cm=100nm. What do you notice about the resulting hexagon?
    c. Use the data below to calculate the enthalpy change of hydrogenation for Kekule's benzene (WARNING – I will be able to tell whether you just copied it out of the textbook!)

Bond	**Average Bond Enthalpy / kJ mol^{-1}**
C=C	612
C-C	347
C-H	413
H-H	436

Now watch the video on Kekule's model of benzene