4.3.4.1 Linear Search – O(n), goes through array one item after the next until it finds the item it wants.

4.3.4.2/3 Binary (tree) search – O(log n), splits it in two, must be ordered, then splits again in particular half etc etc.

4.5.3.1 Bits and Bytes – bit is a binary digit. Bytes are 8 bits, 2n different values can be represented with n bits

4.5.3.2 Units and Prefixes – base 2 prefixes: kibi (Ki), mebi (Mi), gibi (Gi), tebi (Ti) – 210, 220, 230, 240

Base 10 prefixes: kilo (k), mega (M), giga (G), tera (T) –103, 106, 109, 1012

4.5.4.1 Unsigned Binary – positive only

4.5.4.2 Arithmetic – add and multiply binary

4.5.4.3 Signed binary - two’s complement, positive and negative with the MSB (most significant bit) being the sign bit, a 1 for a negative value, a 0 for a positive value. Range (8 bits) is from -127 to 127

Subtract binary using twos complement: Add a negative

4.5.6.1 Bit patterns in relation to image and sound –

4.5.6.2 Analogue vs Digital – Analogue – waves, range of values, continuous. Digital – binary (1 or 0), not continuous data

4.5.6.3 ADC/DAC – ADC: samples taken at certain intervals to map into bytes. DAC: bits are mapped to a graph, with continuity correction used between the gaps to form a wave.

4.5.6.4 Bitmapped Graphics -