

## **CHAPTER 1**

### **Information representation and multimedia**

#### **1.1 Data representation**

##### 1.1.1 Number systems

##### 1.1.2 Binary number system

- Converting from binary to denary and from denary to binary
- **ACTIVITY 1A**
- **ACTIVITY 1B**
- Binary addition and subtraction
- **ACTIVITY 1C**
- **ACTIVITY 1D**
- Measurement of the size of computer memories

##### 1.1.3 Hexadecimal number system

- Converting from binary to hexadecimal and from hexadecimal to binary
- **ACTIVITY 1E**
- Use of the hexadecimal system
- **ACTIVITY 1F**

##### 1.1.4 Binary-coded decimal (BCD) system

- **ACTIVITY 1G**
- **ACTIVITY 1H**

##### 1.1.5 ASCII codes and Unicodes

#### **1.2 Multimedia**

##### 1.2.1 Bit-map images

- Calculating bit-map image file sizes

##### 1.2.2 Vector graphics

- Comparison between vector graphics and bit-map images

##### 1.2.3 Sound files

##### 1.2.4 Video

#### **1.3 File compression**

##### 1.3.1 File compression applications

- MPEG-3 (MP3) and MPEG-4 (MP4)
- Photographic (bit-map) images
- Run-length encoding (RLE)

##### 1.3.2 General methods of compressing files

- **ACTIVITY 1I**

#### **End of chapter questions**