



# COMPUTING SYSTEMS AND NETWORKS KNOWLEDGE ORGANISER

## Overview



### Systems

- You should also know that Information technology (I.T.) includes computers and things that work with computers.
- You should also know that computers have Input, Process and Output (IPO) components.
- Computer systems are built using a number of parts.
- Computer systems can communicate with other devices.
- There are many, many different kinds of computer systems all around the world, ranging from small-scale to large scale.

## Systems

- Systems are a set of things working together as parts of a whole.
- Computer systems are made up of inputs (something that sends a message to the device), processes (the way the device acts on the message) and outputs (something that is sent out by the device). Below are some examples.

### Washing Machine:

- Input: Dials and buttons.
- Process: The computer inside follows a program.
- Output: The clothes are washed and the display shows the remaining time.



### DVD Player:

- Input: The disc is inserted and play is pressed on the remote.
- Process: The system reads the information on the disc.
- Output: The screen displays the movie/ show.



### Smart Locker:

- Input: The customer scans in a barcode.
- Process: The code is recognised by the system.
- Output: The correct locker is opened.



## Important Vocabulary

## Transferring Information

### Protocols and Packets

- Protocols are an agreed way of doing something. When we communicate, we use an agreed set of protocols (greeting, speaking, listening, etc.).
- In computing, agreed protocols are the way that computers communicate with one another.
- The digital information they send is called a 'packet.'



### IP Addresses

- Computers and their users are not always in the same place as one another.
- With billions of computers around the world, computers need to send the information to the correct place.
- To do this, computers use special addresses called IP addresses. They may look like this:

From: 216. 58. 1. 214

To: 216. 64. 1. 20

My IP Address  
63.255.173.183



## Working Together

- Collaborating is another word for working together on something, to reach a shared goal.
- The internet can be used to help people collaborate online, even when they are a long distance apart!
- ‘Chat’ functions can be used keep each other updated with new information.
- Shared ‘cloud’ spaces and online drives can allow one or more person to have access to/ edit documents.
- When building upon someone else’s work, you need to be aware of copyright and intellectual property rules.



System

Input

Process

Output

Protocol

IP Address

Packet

Reuse

Explore

Collaboration