

Hopwood Hall College

# Computing & Digital

Pre-Enrolment



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**Our Vision:**  
Bringing out  
the best in you!

**Our Values**



## Preparing for College: A message from the Principal:

Thank you for applying to study at Hopwood Hall College. We look forward to welcoming you soon. We want to help make sure that you are as well prepared as possible so that you feel at home here from day one.

We understand that the transition from school to college can be daunting but there's no need to worry! We have plenty of pre-enrolment activities which will help to prepare you and make your transition as smooth as possible.

Before you join the College in September, we want you to begin to develop your skills. We have brought together some subject-specific information, signposting to helpful reading and relevant websites and some activities for you to complete.

Don't worry if you get stuck on anything, just try to complete as much as you can. In the meantime, if you have any questions, please contact our Student and College Services Team on 0161 643 7560 who will be happy to help.

**I look forward to welcoming you to your college very soon.**

**Julia Heap**  
Principal and Chief Executive



# Cyber Security

**Cyber security is how individuals and organisations reduce the risk of cyber-attack.**

Click the image and check out the Live Cyber Threat Map and investigate which threats are popular and which industries are being targeted around the globe.



Do you think you have what it takes to stop a Cyber Attack?



Click on the on the image on the left – watch the video and then select how you wish to proceed to save the hospital form a Cyber-attack!

**HINT: Make sure you are using Google Chrome**

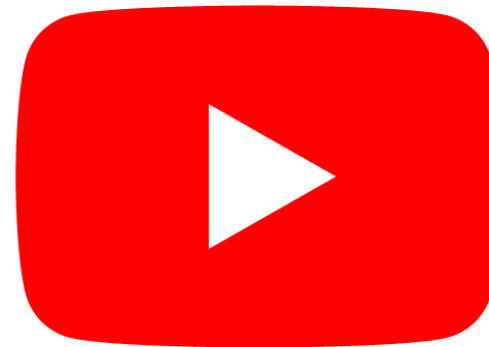
# Computer Networking

**Keeping emerging technologies and computer hardware connected**

Here are a few buzz words to get you thinking

1. Network Automation
2. 5G mobile Device Connectivity
3. Cloud Computing
4. Internet of Things IOT
5. Edge Computing

All a bit fancy but let's go back to the beginning and understand how the internet and networking works – check out his video (it's old) but a good place to start (click the image).



Can you briefly explain the following components and their purpose	
A Router	
A Switch	
A Network	
An IP Address	
A Packet	
The Internet	

# Information Systems

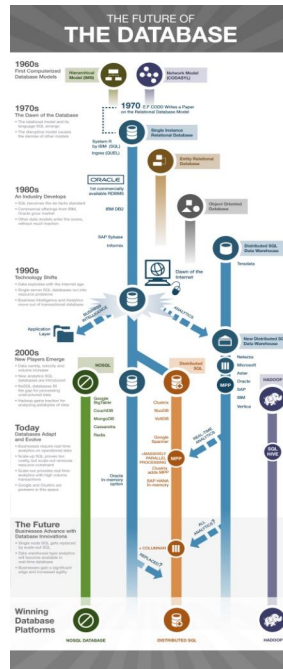
Data connects us all to everything – click the image and watch the video



List five things that you do online that connect to databases

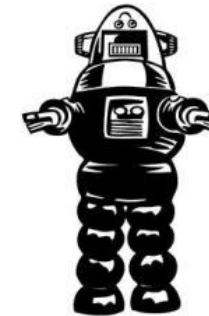

Check out this infographic

Click the image to see where  
the world of databases in heading



# Controlling Systems Using IT

When is a robot not a robot – click the image and watch the video.



Watch the video by clicking the robot, then pick 5 robots that impressed you

Robot Name	Impressed me because



# Computer Hardware

Computer hardware include the physical parts of a computer

Can you identify the components on the image below?



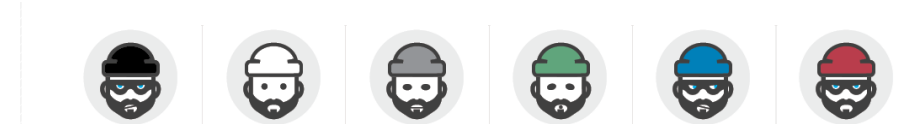
No	Component
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

# Programming

Type of Hackers

**Did you know that** all hackers are programmers and but not all programmers are creative enough to be hackers!

The picture below shows different types of hackers. Do you know the name given to each hacker (clue look at their hats!) and whether they are hacker for good or a hacker that does bad? Send me an e-mail ([barrington.brown@hopwood.ac.uk](mailto:barrington.brown@hopwood.ac.uk)) with your answer. Make sure to include your name and school in the email. Good Luck!



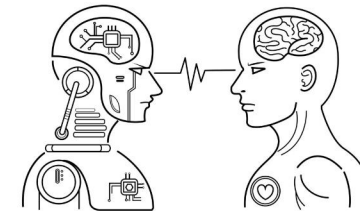
Artificial Intelligence

**Did you know that** Artificial Intelligence (AI) is the study of programming focusing on developing of machines that exhibit human intelligence?

AI is everywhere! Don't believe me. Well, what if said that AI is a device that does tasks that are usually (or can be) done by Humans.

Now that you know what AI is, send me an e-mail listing 10 types of AI that you (and your family) use in your daily lives. Make sure to include your name and school in the email. Good Luck!

Artificial Intelligence uses **programming code** and logic to learn about the world that surrounds them and take actions that will have the best chances of achieving success.



Human Intelligence involves a **person's mind** to learn from his or her previous experiences.

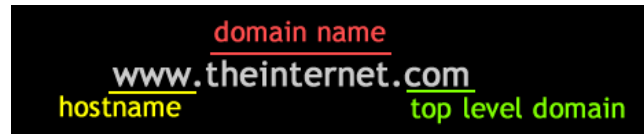
## Web Design

### Build a Website with HTML5 and CSS3

Click the image and work through the tutorial and don't worry if you are a complete beginner.



Domain Names



How many top level domains can you identify?

Extension	Meaning
.com	
.org	
.net	
.edu	
.gov	
.int	

How many country code top level domains can you identify?

Extension	Country
.au	
.az	
.bs	
.ck	
.ea	











## General

### Computer Programming Languages

F	O	S	S	P	A	S	C	A	L	J	X	L	J
O	E	C	T	E	H	O	B	T	A	C	N	R	O
R	O	O	P	P	V	S	C	V	N	U	Y	A	O
T	P	L	I	X	E	G	A	R	A	P	L	U	B
R	Y	D	R	U	P	R	L	B	D	A	A	L	J
A	T	F	C	A	D	A	L	C	L	Y	R	Y	E
N	H	U	S	A	L	A	M	B	A	S	I	C	C
C	O	S	N	E	P	H	P	N	L	O	C	N	T
M	N	I	O	T	D	I	N	O	L	H	O	A	I
A	N	O	I	I	A	A	Y	B	U	R	B	J	V
T	G	N	T	Y	V	O	O	R	G	N	O	L	E
L	E	P	C	C	L	E	O	L	A	E	L	R	C
A	E	A	A	J	P	O	D	L	J	R	I	P	S
B	A	O	N	R	O	D	D	E	L	P	H	I	Y

ACTIONSCRIPT  
 ADA  
 RUBY  
 LUA  
 BASIC  
 COLDFUSION  
 PASCAL  
 FORTRAN  
 BASH  
 DELPHI  
 JAVA  
 PHP  
 MATLAB  
 PERL  
 COBOL  
 OBJECTIVE-C  
 LYNX  
 GROOVY  
 PYTHON

## How well do you know your Logos

Logo	Name
	
	
	
	
	
	
	
	
	
	

## Solving a Mystery

Hopwood Hall Computing Tech Shop: The Mystery Flash Drive Thief

The Tech Shop at Hopwood Hall had been open for just one hour. When Yash walked in, he saw a poster announcing a rise in prices of the Flash Drives. "I only put the notice up when I opened the shop," said Mr. Agarwal.

"I had to increase all my prices by 10%, Yash!" he continued.

"Why, Mr. Agarwal?" asked Yash.

"Everything is getting more expensive. Plus, a thief broke the window in the store room last night. I need to get new glass for that window," Mr. Agarwal explained.

"Come with me," said Mr. Agarwal as he walked in the store room. "I also use this room like my office. "I sat at this desk and made the poster last night, after I shut the shop.

When I finished, I locked the door. So the thief was stuck in this room and could not get in the rest of the shop." "That's lucky," said Yash. "Yes, but I have a broken window to take care of!" smiled Mr. Agarwal.

When Yash left the Tech Shop, he met Anish and Krish playing football on the sports field. "Heard the news? Someone tried to rob Mr. Agarwal," he told them.

"No," said Anish. "We've been here since sunrise, so we haven't spoken to anyone," he told Yash. "That reminds me. I'm hungry," said Krish. "I have £30 left from my bursary."

"I'll just go buy a 64Gb flash drive from the Tech Shop," Krish told the other two. You'll need another £5," said Anish. "I'm going to go home for breakfast."

"No one's going anywhere," said Yash. "I know which one of you is the thief."

How did Yash know?

### Answer

Anish must have seen the poster about the price rise when he broke in the store room last night.