



# Getting Ahead – Summer Work

#BrockFreshers

## Information Technology Level 3 Extended Diploma and Information Technology Level 2 Diploma

### Unit 31: Computer Animation Task List – Theory Basics

1. Research the theory of Persistence of Vision and write a paragraph to explain it
2. Watch these videos about traditional and modern animation techniques:
  - a. Pixar's Zoetrope - <https://youtu.be/M2ORklrHUbg>
  - b. Traditional animation techniques - <https://youtu.be/M2ORklrHUbg>
  - c. Stop Motion animation - <https://youtu.be/kN1fOmqwuVU>
  - d. CGI animation - <https://youtu.be/ru0tQRJ4qKs>
3. Research the following terms and write a definition for each one:
  - a. Pixel
  - b. Bitmap image
  - c. Vector image
  - d. Colour depth
  - e. Compression
  - f. Frame (including key frame)
  - g. Tweening

This BBC Bitesize page will help with most of the terms: <https://www.bbc.co.uk/bitesize/guides/zqyraq6f/revision/1>
4. If you have your own fairly current PC/laptop (ideally with 8GB RAM), you can download the Personal edition of the Unity software from <https://unity.com/>. Select Get Started, then select the 'Individual' tab, then click 'Get started' under 'Personal' (there is a Student edition, but this seems more complex to set up and the Personal edition is adequate for our needs).

You may need to register with Unity before downloading the software. Follow the instructions, but don't worry if you can't download the software – it is not a requirement of the course that you have it on your own machine, all resources for the IT course are available at college.

Once you have the software, there are many beginner tutorials and courses that you can follow in the 'Learn' section of the website. Most of these are about game development, but they include useful information on the Unity interface and how to use GameObjects.

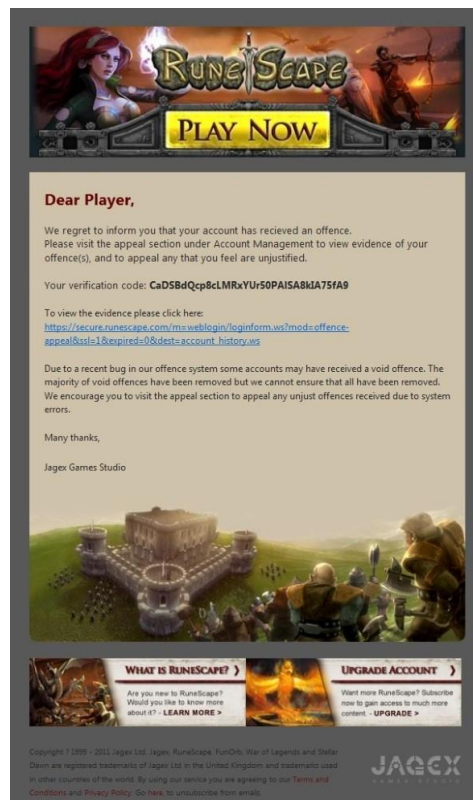
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## Cybersecurity 101

Tasks set in the session:

- Research and write up the scariest cybersecurity threat
  - (Remember to reference your sources)
- Design a phishing email for a company of your choosing
  - (Direct the link to [www.brock.ac.uk](http://www.brock.ac.uk))



Make a list of the most recent data breaches (Remember to reference your sources)

In addition to the tasks set in the session I would like you to:

Make notes on the sections in the video and list 5 different types of Malware  
Watch the video on Stuxnet – <https://www.youtube.com/watch?v=TGGxqjpk-U>  
write a short couple of paragraphs on your thoughts around the use of, arguably, the world's first digital weapon.



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## Web Development

### Study task 1

Read the fascinating history of the web here <https://webfoundation.org/about/vision/history-of-the-web/> and answer the following questions:

1. Who invented the world wide web?
2. What problem was this person trying to solve?
3. What is the main language of the web?
4. What did the inventor of the web do that allowed the web to take off?

### Study task 2

Create a CSS animation. You will need a text editor such as Brackets or Notepad ++ and a web browser such as Edge, Chrome, Safari or Firefox.

Instructions:

**Greetings! Welcome  
to web development  
at Brock.**

Charlie Broomfield

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CSS3 can be used to create a mouseover animation effect. To recreate this at home you will need a text editor (Notepad ++ and Brackets are both free to download), and a web browser.

Please experiment with all of the settings in the .box class and with web fonts and the content of your animation.

```
1 <html>
2
3 <head>
4 <link href="https://fonts.googleapis.com/css?family=Cabin+Sketch|Titan+One" rel="stylesheet">
5
6 <style>
7   body {
8     color: #fff;
9     font-family: 'Titan One', cursive;
10    font-size: 90px;
11  }
12
13  p.name {
14    font-family: 'Cabin Sketch', cursive;
15  }
16
17  .box {
18    background: #0d47a1;
19    border-radius: 10px;
20    cursor: pointer;
21    height: 500px;
22    line-height: 95px;
23    text-align: center;
24    transition-property: background, width, height;
25    transition-duration: 1s;
26    transition-timing-function: linear;
27    width: 800px;
28    margin: 150px;
29    padding: 100px;
30  }
31
32  .box:hover {
33    background: #ff0099;
34    width: 1000px;
35    height: 500px;
36  }
37 </style>
38 </head>
39
40 <body>
41
42 <div class="box">Greetings! Welcome to web development at Brock.
43
44   <p class="name">Charlie Broomfield</p>
45
46 </div>
47
48
49 </body>
50
51 </html>
```



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## Extra activities

### Films:

- The Imitation Game (2014)
- Snowden (2016)
- The Social Network (2010)
- We Live in Public (2009)
- Blackhat (2015)
- Zero Days (2016)

### Websites:

- W3 Schools Online Web Tutorials <https://webfoundation.org/>
- Udey, free course on social media management: <https://www.udemy.com/course/social-media-for-business/>

### TV Shows:

Watch Click on BBC iPlayer for the latest weekly news from the world of computing and IT.

### Podcasts:

If you are interested in privacy and digital security, this is the podcast for you: The Security, Privacy and Osint Show:

[https://open.spotify.com/show/6QPWpZJ6bRTdbkI7GgLHBM?si=Xs0B\\_26zQWyO3z8I0Jj2Ug](https://open.spotify.com/show/6QPWpZJ6bRTdbkI7GgLHBM?si=Xs0B_26zQWyO3z8I0Jj2Ug)

Weekly tech news from The Wired Podcast:

<https://open.spotify.com/show/4IUqFpahx5eB6zuJLKlaJD?si=0tpJMHxUSiGkuSe7sjPrcQ>

The Guardian's digital culture podcast, Chips with Everything, contains an entertaining, eclectic mix of digital questions you will be glad to know the answers to.

<https://www.theguardian.com/technology/series/chips-with-everything>