# **Toynbee Curriculum** KS4 Knowledge Maps

# **CREATIVE IMEDIA**

# Toynbee School

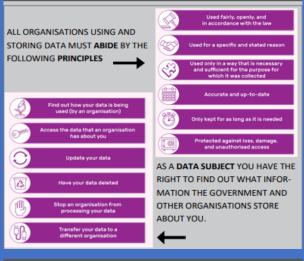




# 9.1 Cyber Security

This unit takes you on a journey of discovery of techniques that cybercriminals use to steal data, disrupt systems, and infiltrate networks.

# DATA PROTECTION ACT 2018



# The Computer Misuse Act (1990)

The Computer Misuse Act (1990) and its amendments were created so that unauthorized access to computers and crimes committed using a computer could be prosecuted. The act is based on three principles and makes the following actions illegal:

PRINCIPLES	LEGAL ACTIONS
Unauthorised access to digital/computer material. This means a person asking a computer to perform any function with the intent of accessing anything on the computer for which they do not have per- mission, and for which they know they do not have permission.	Punishable by up to two years i prison and a £5,000 fine.
Unauthorised access to digital/computer material with intent to commit or facilitate the commission of further offences. This means a person gaining access to a computer without permission in order to commit another crime or to enable someone else to commit a crime.	Punishable by up to five years in prison and an unlimited fine determined by the damage caused and the severity of the crime.
Unauthorised acts with intent to impair, or with recklessness as to impairing, the operation of a computer. This means a person intentionally im- pairing the operation of any computer or program, or intentionally preventing access to any data or program on any computer. This includes creating or supplying materials that could be used to carry	Punishable by a prison sentence of up to ten years and an unlim ited fine, but if the act puts life risk or endangers national secu- rity, the sentence may be ex- tended to life imprisonment.

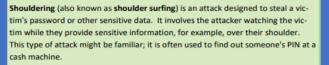
out this offence.

# SOCIAL ENGINEERING

Social engineering is a set of methods used by cybercriminals to deceive individuals into handing over information that they can use for fraudulent purposes.

#### How might a hacker use the data you submitted?

- Name of first pet
- Favorite colour Mother's maiden name
- Favorite band or artist
- Date of birth
- Name / Email address



## PHISHING ATTACK

A **phishing attack** is an attack in which the victim receives an email disguised to look as if it has come from a reputable source, in order to trick them into giving up valuable data. The email usually provides a link to another website where the information can be inputted.

#### Phishing: Key indicators of a phishing email

- Unexpected email with a request for information
- Message content contains spelling errors
- Suspicious hyperlinks in email
  - Text that is hyperlinked to a web address that contains spelling errors and/or lots of random numbers and letters
  - Text that is hyperlinked to a domain name that you don't recognise and/or isn't connected to the email sender
- Generic emails that don't address you by name or contain any personal information that you would expect the sender to know

## BLAGGING

**Blagging** (also known as **pretexting**) is an attack in which the perpetrator invents a scenario in order to convince the victim to give them data or money.

Hacking in the context of cyber security is: Gaining unauthorised access to or control of a computer system

#### Why might people want to hack?

- To steal data
- To disrupt services
- For financial gain
- For political reasons (espionage and activism)
- For fun (planting the flag)
- For ethical reasons



Denial of service attack (DoS) This is a cyberattack in which the criminal makes a network resource unavailable to its intended users. This is done by **flooding** the targeted machine or website with lots of **requests** in an attempt to overload the system.

#### Distributed denial of service attack (DDoS)

This uses the same concept as a DoS attack, but this time it is **multiple computers** making the attacks at the same time.

It is a lot harder to:

- Stop the attack by simply blocking a single source
- Identify who is responsible, as lots of machines are making requests, many of them because they are infected by malware

Brute force attack This is a form of attack that makes multiple attempts to discover something (such as a password).

## MALWARE

#### Typical actions of malware include deleting or modifying files.

**Spyware**—secretly monitors user actions, e.g. key presses, and sends information to the hacker. Some spyware can even use your webcam without your knowledge.

Viruses—spreads through normal programs and might slow down your device or change your applications and documents.

Worms— spread from device to device and copy themselves hundreds of times. A worm might copy itself onto your email account and then send a copy to all of your email contacts!

Trojan horse— pretends it will be a useful and safe program, when actually it will try to attack your device.

Adware—displays adverts while it is running; some can serve as spyware, gathering information

### BOTS

#### Internet bots

Bots are automated programs that perform tasks repeatedly.

Bots are a crucial part of the internet's infrastructure and perform useful tasks such as:

- Finding new websites for search engines to index
- Providing customer service online (chatbots)
- Monitoring the prices of items to find the best deal (shopbots)

# PROTECTION

Firewalls A firewall checks incoming and outgoing network traffic. It scans the data to make sure it doesn't contain anything malicious and that it follows the rules set by the network.

Anti-malware Anti-malware is software that scans any file that is able to execute code. The antimalware will have a list of definitions of sequences of code that they are aware are malicious. If the code in your files matches the definitions, the files are quarantined.

Auto-updates Auto-updates refers to software that automatically checks for available updates for the software you have on your computer. Once it finds an update, the software can be set either to alert the user or to install it automatically. This software is often included with an operating system.

**User permissions** Users on a network can be put into groups, with each group having a unique set of privileges, such as: Which network drives they have access to, Their read/write permissions, Which printers they are able to use, What software they can use, Which websites they are allowed to access



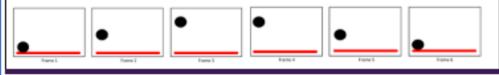
# 9.2 Animations

In this unit you will discover how professionals create 3D animations using the industry-standard software package, Blender. By completing this unit you will gain a greater understanding of how this important creative field is used to make the media products that we consume.

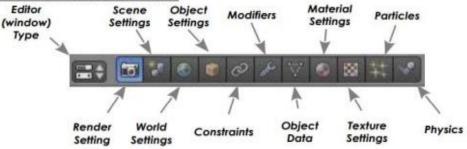
Animation	The process of giving the illusion of movement to drawings, models, or inanimate objects.
3D animation	Animating 3D models made in 3D software.
Frame	Still images that appear as a moving image when they are shown one after another at high speed. The frame rate determines the speed of an animation
Keyframe	Keyframe animation only requires you to pick the important locations, the keyframes and the computer works out the rest (called tweening) e.g. Pixar films.
Stop Motion	Stop motion means you have to manually animate every frame of the animation e.g. Shaun the Sheep.
Vector	An image stored as mathematical instructions for how to do draw it. This means its width and height can be increased without the loss of quality.
Composition	The composition of an animation refers to the animation of the properties of an object or multiple objects
Knife tool	The knife tool in Blender can be used to interactively subdivide geometry by drawing lines or closed loops to create holes.
Face	A surface made up of three or more sides, often referred to as a polygon.
Vertex	A point where one or more edges meet.
Edge	A line connecting two vertices.
Scale	Scaling means changing proportions of objects.
Rotate	Rotation is also known as a spin, twist, orbit, pivot, revolve, or roll and involves changing the orientation of elements (vertices, edges, faces, objects, etc.) around one or more axes or the Pivot Point.
Parenting	Used to attach objects to each other.

# **Stop Frame Animation**

Stop frame animations – create the beginning and ending frames, as well as all the frame in-between. For a bouncing ball the key frames for the lowest and highest bounce points, as well as the frames in-between would have to be created.



# The Basic Blender Buttons:



# Bitmap vs Vector Images

## Bitmap

Bitmap graphics are made from pixels. Resizing will cause loss of quality. NOT to be used in animations.

# Vector

Vector graphics are made from shapes . Resized without any loss of quality. Colours of individual shapes can be changed. Used to create clean, smooth animations.

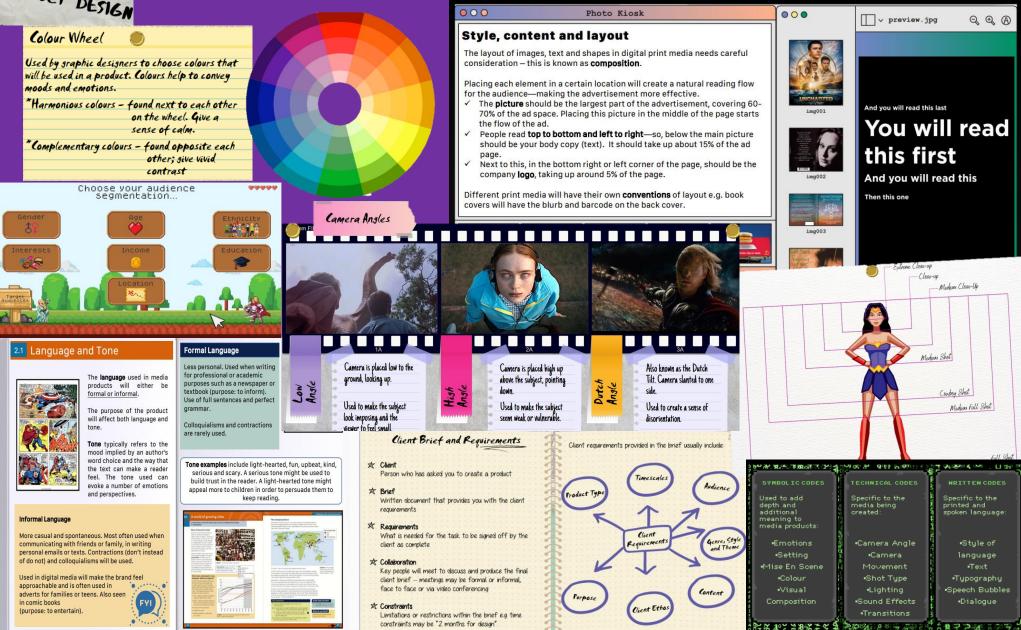






# R093 – Creative iMedia in the Media Industry

# Section 2 – Factor influencing Product Design



PRE-PROD		<b>3 – Creative iMed</b> i ion 3 – Pre-Produc	i <b>a in the Media Indu</b> ction Planning	stry
PLANNING Work Plans Work plans are important tools that help to plan out a project. They show the whole project, the tasks that it can be broken down, timescales and deadlines as well as the resources that would be needed to complete the project. For a media product the work plan would cover: Pre-production Production Post-production	Purpose: Node K Generate ideas quickly and show the links between ideas! Can include: Keywords I mages	Vode Kode Node Node Node Subnode	Scripts V.1. Merication - NAT interior CLASSROOM - DAY TIME We see a classroom - there are students at at desks facing a teacher at the former fight. SFR: Light chatter Magne Merication TEACHER Migne (friendly yet firmly) Right, class, can anyone tell me what scripts are used for? A student puts their hand up. Merication Merication CLOSE UP M BILLY Merication CLOSE UP M BILLY Merication Meric	Scripts * Purpose: To provide dialogue and stage directions to cast or voice-over artists. Show sound effects and camera angles to be used - useful for the sound engineers and camera crew. 
Moodboards Modboards   Furpose:   * Visual tool to senerate ideas. They can help develop a feeling and visual look for a produthat can be shown to the client.   * Can be digital (on computer) or physical (made by hand)   * Can contain:   • Images • Material   • Colours • Annotations   • Fonts • Sound (if digital)   • Headins • Video (if digital)   • Logo • Animation (if digital)	producers, directors, animators and camera operators. 	EXT: Meadow   EXT: Meadow	Visualisation Diagrams Purpose: Purpose: * This is a rough sketch to show what you want you media product to look like when completed. * Usually done by hand. * Usually done by hand. * Usually done by hand. * Usually done by hand. • Colours • Colours • Colours • Colours • Colours • Colours • Images • Annotations • Dimensions Notes: Only for static images such as a poster, logo, hook cover or magazine advert. Can be distized by scanning on a scanner or taking a photo on a camera and uploading.	Geometric wolf profile (white) 2 there high 16 winde 58's transparency

SFX: bird song

Light music playing

# PRE-PRODUCTION PLANNING



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# **PEGI Ratings**

David And

PEGI or Pan European Game Information provides age classifications for video games in 38 European countries. They only consider age suitability, not the level of difficulty. There are two levels of information PEGI Age Labels and Content Descriptors...



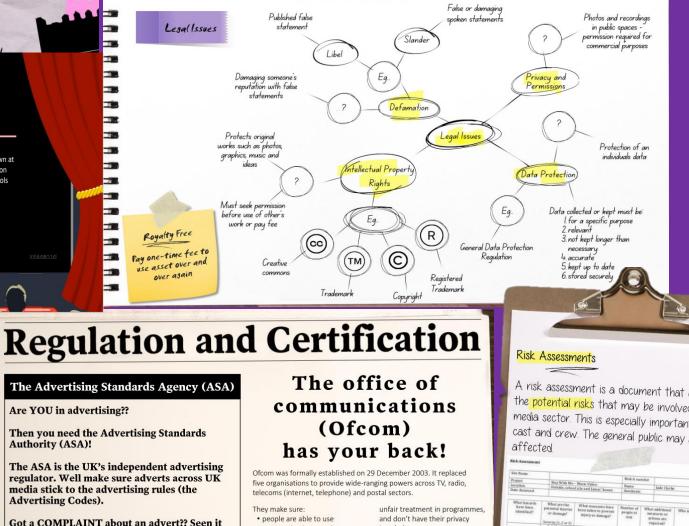


This is an example of how the graphics might look on the back of a game cover. They should also appear on the front.



# **R093** – Creative iMedia in the Media Industry

# Section 3a – Legal Issues



Got a COMPLAINT about an advert?? Seen it on TV, film, radio, billboards, the internet, or social media ?

In 2020 alone we resolved 36, 342 complaints about ads. They were either changed or removed completely. What are you waiting for? **Contact us now!** 

Authority (ASA)!

Visit https://www.asa.org.uk/

# communications services, invaded:

including broadband; a range of companies provide quality television and radio programmes that appeal to diverse audiences;

 viewers and listeners are protected from harmful or offensive material on TV. radio and on-demand: people are protected from

 the universal postal service covers all UK addresses six days a week, with standard pricing; and the radio spectrum is used in the most effective way.

The Advertising Standards Authority Ltd. (trading as ASA), registered in England and Wales, Registered Number 0733214

A risk assessment is a document that evaluates the potential risks that may be involved in the media sector. This is especially important for the cast and crew. The general public may also be

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Date Assessed		and James' house		Atsistants		and contract		
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# DISTRIBUTION CONSIDERATIONS

**R093** – Creative iMedia in the Media Industry Section 4 – Distribution Considerations

# Online

Multimedia content, games, and apps can be distributed over the internet on various different smart devices using dedicated streaming apps and online stores. Media can also be distributed on websites such as companies providing downloadable brochures.

NETFLIX Spotify Spotify

Apple Books

# **Physical Media**

Physical media are things that you can hold and touch. Examples include CDs, DVDs and Blu-Ray Discs. USB storage could also be used, and whilst not as popular now, printed materials, such as magazines and leaflets, are still used.

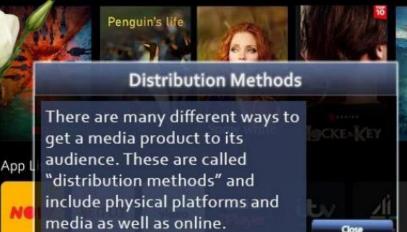
Pirates in the

sland



**Physical Platforms** These are the specific devices used to deliver media products. Examples include smartphones, computers, and information

# Top Picks For You



FILE COMPRESSION

Compared to text files, media files such as images, audio, and video are very large in file size e.g. a 1 min video clip can be up to 2GB!

Data compression is a way to reduce the file size

- and change certain attributes including:
- Resolution
- Dimensions Bit Depth

Compression can be either lossy or lossless.

Lossy compression: file size is reduced by taking away redundant data - quality is affected.

Lossless compression: file size is compressed but

# Did you know?

Files are better compressed as they not only take up less storage space but they are also quicker to transfer! Additionally, the larger the file, the slower it



Home Dashboard

Inputs

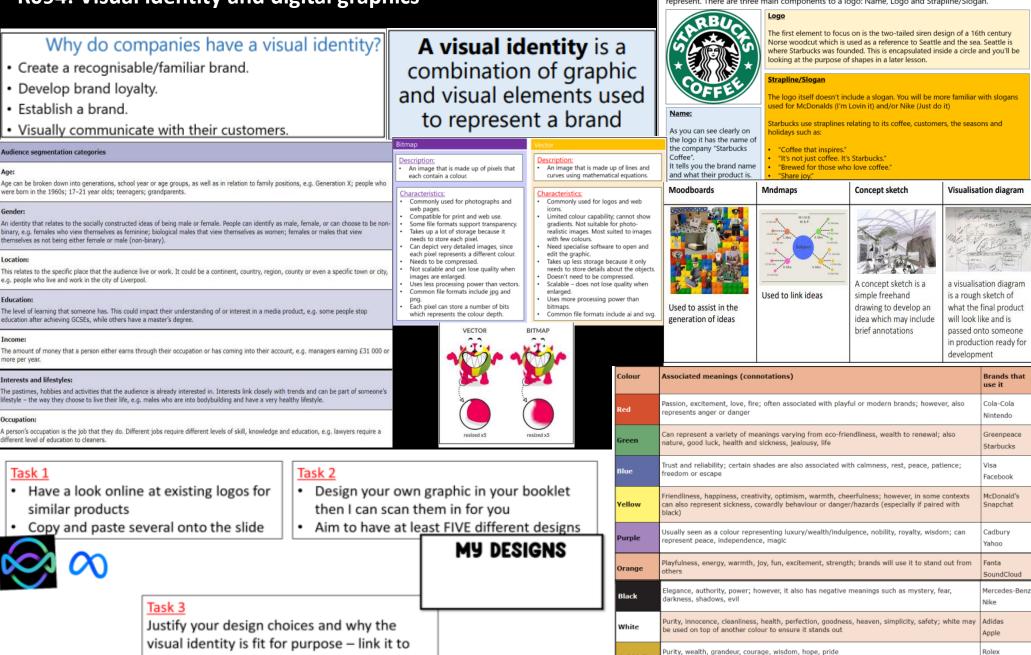
# **R094: Visual identity and digital graphics**

the scenario, purpose and target audience!

# Components of visual identity

The logo of a brand is normally at the forefront when it comes to representing who they are what they represent. There are three main components to a logo: Name, Logo and Strapline/Slogan.

Lindt



Gold/silve

# **R097** Interactive digital media

Information Kiosks:

available in real life

locations. Accessibility

must be considered so a

wide audience can use it.

### Examples of interactive multimedia kiosks

An interactive multimedia product uses technology to allow a user to change what they see, using hyperlinks. Examples include, websites, kiosks and apps.



Websites: available on many platforms. Users can interact with touch screens, computer mice and voice commands.

#### House Style:

A house style includes a consistent use of fonts, colour scheme and a logo. Through the consistent use, the audience will be able to recognise the brand.



#### Colour Scheme:

The colour scheme not only has to meet the purpose of the product but also meet the expectations of the target audience. So a product aimed at a young audience will have many bright colours and one aimed at an older audience may use 3 dark colours and 2 bright colours.



E-Learning Apps: available on many platforms. So will use the same inputs as websites or mobile apps.



Video games: available on many platforms, some of which are designed for them with their own peripheral. GUIs not always similar.

#### File formats

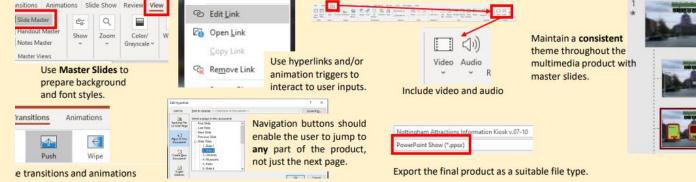
Interactive multimedia products consist of multimedia, which includes images, sound, video and text. All these form of media can be saved in different file formate as below

ionnats, as below.		
Media	File format	
Image	JPEG, TIFF	
Sound	MP3, WAV	
Video	MP4, MOV	

Graphical User Interface (GUI):

This is how the user interacts with the interactive multimedia product. A GUI uses Windows, Icons, Menus and the mouse pointer to help the user navigate around the layout. It is important that users find it easy to understand. For example: making a button look like something that should be clicked.





#### Layout:

Mobile Apps: available

on smartphones and

tablets. Touch screens

needed but some will

also use voice

commands.

This is how the multimedia elements are positioned, there are typical locations that users will expect content to be. For example, navigation will be on one side of the screen rather than be in the centre where content will appear. You need to keep a consistent layout throughout your product with a slide master.

Header		
Sidebar	Content	
Footer		

#### Accessibility:

This is about making interactive multimedia products usable by everyone, regardless of ability.

If your audience is from a different country, you will need to add language options or use images instead of text.





An older audience may have issues with reading meaning that the font size will have to be bigger so they can read it more easily.

#### Factors that affect performance

Have you ever been searching the internet or watching Netflix on your phone and suddenly it will freeze or take a long time to open pages, this is due to poor network performance? Something is preventing the pages from opening fast or the Netflix film to download fast. There are many reasons why network performance can be affected. Some of these reasons are as follows:

Low bandwidth.

- Type of network hardware you are using, for example, copper cable, instead of fibre optic cable.
  - Using high quality media, for example, TIIFF files for images instead of JPEG or PNG.
- How many users are using the network at one time.