



# YEAR 10 IT SUMMER WORK PACK

## Contents

Introduction.....	2
<b>Timetable - September 2020 to July 2021.....</b>	<b>2</b>
What should I do over summer?.....	3
Component 3 - Effective Digital Working Practices.....	3
Worksheets - Features and uses of the cloud.....	5
Cloud Storage.....	5
Cloud Computing.....	6
Component 2 - Collecting, Presenting and Interpreting Data.....	7
Introduction to Excel spreadsheet.....	8

## Introduction

Dear year 10 IT students

When you come back to school in September 2021 there will be a lot of work to be completed in order for you to progress with your BTEC IT qualification.

Component 1 is completed (please do not delete all your component 1 stadium work as the exam board may still need to see it). But you don't have to do anymore work on component 1, however, you do have two more components to complete.

<b>Timetable – September 2021 to July 2022</b>	
Component 2 – Collecting, Presenting and Interpreting Data	<ul style="list-style-type: none"><li>• Spreadsheet coursework component - started June 2021.</li><li>• September 2021 - continue learning and completing this coursework component.</li><li>• Exam board will need to see your coursework on this unit to check if the grade we give you is correct.</li></ul>
Component 3 – Effective Digital Working Practices	<ul style="list-style-type: none"><li>• Exam theory unit</li><li>• Started June 2021 .</li><li>• Exam in January 2022</li><li>• September 2021 - continue learning content on this component in preparation for exam in January 2021</li></ul>

## What should I do over summer for IT?



Over summer it is very important that you continue learning component 3 topics and revise topics you have already learnt in lesson.

As you are aware **'Know It All Ninja'** covers all the topics and learning that you need for component 3 – Effective Digital Working Practices.

You will need this to make sure you are completing all the quizzes as well as reading and watching the topics covered.

In our lessons from September, we will be still using this website to do work for component 3.

## Component 3 – Effective Digital Working Practices

KnowItAllNinja – <https://www.knowitallninja.com/courses/effective-digital-working-practices/>

The screenshot shows the KnowItAllNinja website interface. At the top, there is a navigation bar with the logo, 'RESOURCES', 'PRICING', 'COURSES', and a user profile 'USERJP4'. Below the navigation bar is a section titled 'OUR BTEC LEVEL 3 IT AND COMPUTING & LEVEL 2 ICT COURSES'. A sub-header reads: 'Here you'll find the very best BTEC Level 3 IT, BTEC Level 3 Computing and BTEC Level 2 ICT courses to help prepare for the exams, controlled assessments and onscreen tests. Our courses provide you with access to lessons containing text, images, videos, presentations & quizzes to maximise your BTEC exam results.' Below this, there are two tabs: 'My Courses' (selected) and 'All Courses'. Three course cards are displayed: 1. 'EFFECTIVE DIGITAL WORKING PRACTICES' (highlighted with a red circle), featuring an illustration of a person at a desk with a laptop and a briefcase. 2. 'INFORMATION TECHNOLOGY SYSTEMS', featuring an illustration of various IT devices and a network diagram. 3. 'CREATING SYSTEMS TO MANAGE INFORMATION', featuring an illustration of a computer monitor displaying data charts and a funnel with data points.

Start the exam component by refreshing your knowledge on modern technologies – starting with Communication Technologies.

<https://www.knowitallninja.com/modules/modern-technologies/>

When you have finished reading through this section, then test yourself doing the quiz. Each section has a quiz to complete.

Please note that, your teachers (Mr Osman and Mrs Parkins) can see the work you do on Know-It-All Ninja, so please ensure that you do regular work and take the quizzes only when you have read through and understand the topics.

It is also very important that you **have time to rest during summer** because we need you ready and fit for a busy year 11.

Please do not think you have to complete all the quizzes for all the sections in component 1. Please use this summer timetable as a revision topic guide for Know It All Ninja.

Summer week	Topic to learn from Know It All Ninja
1	Modern technology
2	Impact of Modern Technologies on individuals and organisations
3	Threats to data – Internal and External threats
4	Prevention & Management of Threats - User access restriction
5	Policy – Disaster Recovery

Below are some worksheets to complete about Cloud computing and Data protection levels. This is in addition to the quizzes on Know It All Ninja. Please work through them at your own leisure during the summer break.



## Cloud Storage

### Task 1

What is Cloud Storage?

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Who can use cloud Storage?

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State 3 examples of cloud storage

1.

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2.

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3.

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### Task 2

What does 'Synchronisation of a device' mean?

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## Cloud Computing

1. What is cloud computing? Give an example of a provider of cloud computing

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2. What is cloud storage? Give an example of cloud storage platform

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3. What is an Online Application?

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4. What does 'Collaboration' mean on Cloud computing?

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### 5. Online Research

**What is OneDrive and what can it be used for?** Find out by searching online and answering these in your own words.

OneDrive is .....

OneDrive drive can be used for.....

## Task 1

(a) What is a firewall?

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(b) Firewalls can be both hardware and software. But what is the difference between these two?

Explain the difference between a hardware and software firewall and how they protect our IT systems in different ways.

Hardware firewall \_\_\_\_\_

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Software firewall \_\_\_\_\_

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(c) In the area below draw an annotated diagram showing how a hardware firewall works.

## Task 2

(a) What is anti-virus software?

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(b) What is the difference between signature detection and heuristic detection? Which do you think would more accurately detect viruses?

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(c) Below are three statements regarding anti-virus software. Identify which of these statements are true and which are false.

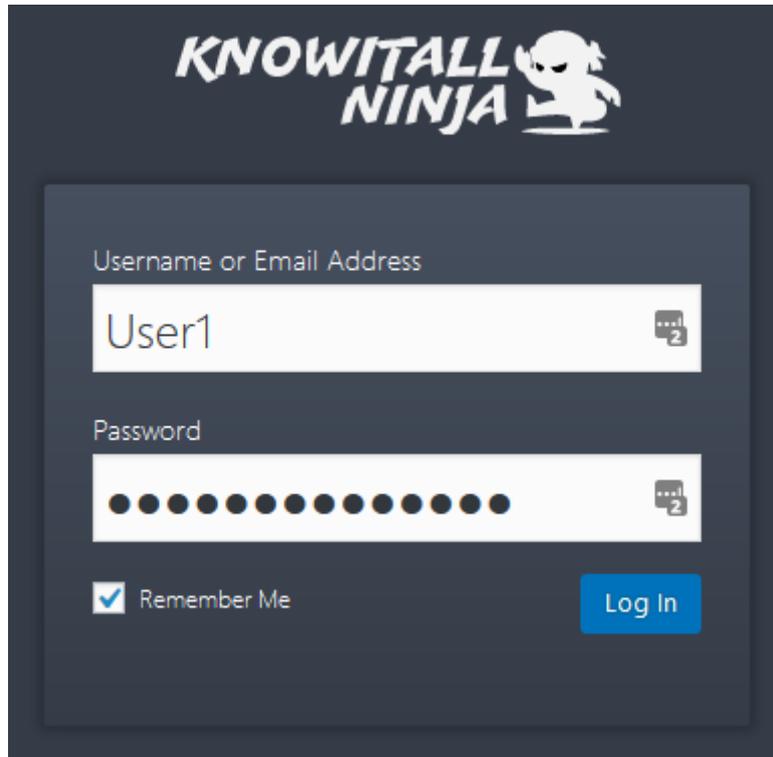
True                      False

1. Anti-virus software can only detect viruses, not other forms of malware like worms.
2. Anti-virus software must be regularly updated, otherwise it won't detect some malware.
3. Anti-virus software is very expensive and not affordable to the average user.



### Task 3

(a) Below is a drawing of a sign-in form for a website. Annotate this document to identify features of the interface design that can improve security.



(b) For each of the features identified above identify a threat that they might be able to protect us from being harmed by.

1. \_\_\_\_\_
2. \_\_\_\_\_

(c) Autocomplete is an interface design feature that can improve security. However, it could potentially be a security issue. Explain below why autocomplete may negatively impact on security.

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As you are aware the next to parts of your coursework you will be using excel you will need to get more familiar with excel. Please complete the worksheets below about your coursework components Data & Information. These can be done at any time during the summer break. If you do have Excel spreadsheet on your home computer or device, please try to do some formula work. See the exercises below.

If you don't have Excel spreadsheet, then try to complete the other worksheets to the best of your ability.

Also, please visit this website to learn how to do basic formulas in Excel.

Basic spreadsheet skills - <https://contexturesblog.com/archives/2009/07/13/14-basic-skills-for-excel-users/>

Please work at your own pace through this skills website to learn how to use Excel. This would be a great advantage to you as it's important that you try to keep up with this coursework component too.

## Characteristics of Data & Information

### Task 1

(a) Below are some statements about data and information. Identify which of these statements is about data and which is about information by putting a tick in the relevant cell.

	Data	Information
They are raw facts & figures		
They have been processed & given meaning		
It has no structure and has no purpose		
9:00, 120/60, 10:00, 135/65, 11:00, 140/70		

(b) Fill out the boxes below in order to define what information is.

Information =  +  +  +

### Task 2

Below is a table with two different scenarios that you might need to collect and use data for. Identify an example of data & information for each scenario and fill in the relevant table cells.

100m Race		Exam Mark
<b>Data</b>		
<b>Information</b>		

**Task 3**

Text is better at representing qualitative information, while numbers are used for quantitative. But what do these two terms mean? Answer this in the area provided below:

Quantitative information is \_\_\_\_\_  
 \_\_\_\_\_

Qualitative information is \_\_\_\_\_  
 \_\_\_\_\_

**Task 4**

(a) You've been provided with the following information:

**Favourite Movie Genre**

**Comedy: 5      Action: 3      Thriller: 2      Drama: 4      Sci-Fi: 4      Animation: 7**

This data needs to be presented to a large group of people. What method of representing data would you use and why?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Task 5**

1. What could affect the quality of the information?

\_\_\_\_\_

\_\_\_\_\_

2. How can the company use this data to make decisions?

\_\_\_\_\_

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3. How is the customers privacy affected by the data collection?

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4. Suggest ways that the data collection can be improved

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## Ensuring Data is Suitable for Processing

### Task 1

(a) Beneath are a variety of statements regarding validation & verification. Draw lines connecting these statements with the term they relate to.

A check to ensure data entered matches the original source.

A check to ensure that data entered is sensible & reasonable.

These restrict user input or check they meet certain rules.

This check can be done automatically by a computer.

**VALIDATION**

**VERIFICATION**

(b) Validation and verification checks are very useful tools when ensuring data has been entered correctly. Explain below why validation and verification checks are useful as well as what they cannot help us to prevent.

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## Task 2

It's important to be able to identify and describe different validation and verification checks as well as to be able to give a sensible example of where you might use these checks.

Below are a variety of checks. Identify their type (validation or verification), how they work (definition) and give an example of where you might use it in practice.

Check	Type	How it Works	Example Usage
Range			
Presence			
Lookup			
Double Entry			
Length			
Type			
Proof Reading			

## Task 3

Below is a simple payroll table that records employee wages. When entering data into this table it's important that we have validation checks in place to help prevent data entry errors.

For each column, identify the validation techniques that we might use to ensure that our data is sensible and reasonable.

Payroll Number	Employee Name	Weekly Wage
5364	Simone Charman	£145.60
4253	Luna Matongo	£208.00
4324	Harpreet Singh	£156.60
5434	Lucius von Stedingk	£187.00
7664	James Cross	£102.40

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1. What is a spreadsheet?

2. Research how spreadsheets are used i.e. by businesses and answer the following question:

1. What is spreadsheet used for in businesses?

2. How does this benefit the business?

3. What is the most used spreadsheet software?

3. Where can I find a cell in a spreadsheet?

1. What is a cell reference? Give an example of a cell reference.

2. Where is a column in a spreadsheet?

3. Where is a row in a spreadsheet?

4. Open Microsoft Excel if you can.

1. Go to the cell **B1** and type in **100**

2. Then go to cell **C1** and type in **300**

3. Go to **E1** and type in **=B1+C1** and press enter

4. What happened? Print screen what you have done or explain what happened.

## Validation or Verification

Input	Identify the error (if there is an error)	Type of error	How error can be avoided						
31st February 2012									
<b>Tel no.</b> 0208 645 87639									
									
field size: 0									
>10 AND <10									
spelling mistakes <b>First name:</b> Nasrtgis <b>Surname:</b> OSimane									
<table border="1"> <thead> <tr> <th>Date</th> <th>Month</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>25</td> <td>13</td> <td>2006</td> </tr> </tbody> </table>	Date	Month	Year	25	13	2006			
Date	Month	Year							
25	13	2006							
<15 OR >15									
<table border="1"> <thead> <tr> <th>Field name</th> <th>Data type</th> <th>Field size</th> </tr> </thead> <tbody> <tr> <td>Surname</td> <td>Integer</td> <td>8</td> </tr> </tbody> </table>	Field name	Data type	Field size	Surname	Integer	8			
Field name	Data type	Field size							
Surname	Integer	8							