

# Key Stage 3 Computer Science

## Year 8 Homework Booklet 2



Student name:

Class:



Week	Task title	Summary	Pages	Date due
4	Boolean Logic	Complete the tasks about Boolean logic.	2-3	
5	Binary	Carry out binary conversions.	4-5	
6	Safety Barriers	Demonstrating your knowledge and understanding of being safe online.	6 -11	
7	Copyright	Demonstrate your understanding of copyright.	12- 14	
8	Year 8 Assessment Revision	Revise for the year 8 programming studies assessment.	15	

**Homework should be submitted every three weeks on your Google Classroom or written out and handed in to your teacher on the date it is due. Any issues with the homework must be addressed with your teacher before the due date.**

For further help and support, please email your teacher:

**Mr Cook** – [a.cook@benjaminbritten.school](mailto:a.cook@benjaminbritten.school)

**Mrs Miles** – [a.miles@benjaminbritten.school](mailto:a.miles@benjaminbritten.school)

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## Week Four – Boolean Logic

1. Complete the missing words.

\_\_\_\_\_ use simple comparisons to help make decisions. \_\_\_\_\_ logic is a form of \_\_\_\_\_ where all values are either \_\_\_\_\_ or \_\_\_\_\_. These values of true and false are used to test the \_\_\_\_\_ that selection and \_\_\_\_\_ are based around.

Missing words

<b>iteration</b>	<b>programs</b>	<b>Boolean</b>	<b>false</b>
<b>algebra</b>	<b>true</b>	<b>conditions</b>	

2. Complete the expressions table.

Expression	Boolean equivalent
Equals	
Greater than	
Less than	
Greater than or equal to	
Less than or equal to	
Does not equal	
And	
Or	
Not	

3. Complete the Boolean expressions for Python.

Expression	Boolean Equivalent	In Python
Equal to		
Does not equal		
And		
Or		
Not		

4. Boolean operators such as AND, OR, NOT can be used to help carry out safe and effective searches. Use the operators to complete the following searches:

- Find prices of only red and blue iPad cases
- Find a brand of car which isn't a Ford
- Where Melbourne England is
- Find nearest theme park other than Pleasurewood Hills
- Find another animal beginning with "P" other than penguin
- Latest phones made by anyone other than Apple
- Price of a laptop, make should be either Dell or HP

Search keywords	Boolean operator	Information found	Search engine	URL
Red AND blue iPad case	AND	£39	Google	<a href="https://www.amazon.co.uk/Griffin-Survivor-All-terrain-Case-Ipad-blue-red/dp/B00O5MA4OG">https://www.amazon.co.uk/Griffin-Survivor-All-terrain-Case-Ipad-blue-red/dp/B00O5MA4OG</a>

## Week Five – Binary

Complete the binary conversions.

Convert this binary number to decimal. (1 mark)

128	64	32	16	8	4	2	1
0	1	0	0	0	0	0	0

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2. Convert this binary number to decimal. (1 mark)

128	64	32	16	8	4	2	1
0	0	0	0	0	1	1	1

--

3. Convert this binary number to decimal. (1 mark)

128	64	32	16	8	4	2	1
0	1	0	1	0	0	0	0

--

4. Convert this binary number to decimal. (1 mark)

128	64	32	16	8	4	2	1
0	0	0	1	0	1	1	0

--

5. Convert this binary number to decimal. (1 mark)

128	64	32	16	8	4	2	1
1	1	0	0	0	1	0	0

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6. Convert the decimal 20 into binary. (1 mark)

128	64	32	16	8	4	2	1

7. Convert the decimal 192 into binary. (1 mark)

<b>128</b>	<b>64</b>	<b>32</b>	<b>16</b>	<b>8</b>	<b>4</b>	<b>2</b>	<b>1</b>

8. Convert the decimal 68 into binary. (1 mark)

<b>128</b>	<b>64</b>	<b>32</b>	<b>16</b>	<b>8</b>	<b>4</b>	<b>2</b>	<b>1</b>

9. Convert the decimal 15 into binary. (1 mark)

<b>128</b>	<b>64</b>	<b>32</b>	<b>16</b>	<b>8</b>	<b>4</b>	<b>2</b>	<b>1</b>

10. Convert the decimal 255 into binary. (1 mark)

<b>128</b>	<b>64</b>	<b>32</b>	<b>16</b>	<b>8</b>	<b>4</b>	<b>2</b>	<b>1</b>

11. Convert the binary number 00110101 into decimal. (2 marks)

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12. Convert the decimal number 78 into binary.

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## Week Six – Safety Barriers

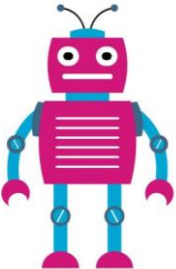
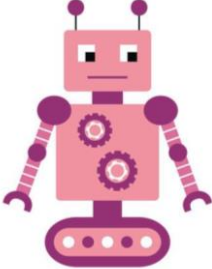
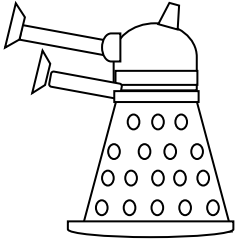
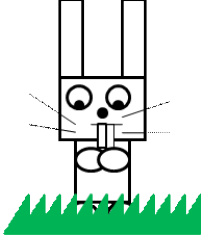

### Consider this scenario:

Bod is going on holiday and tells all his friends on Facebook the dates he will be away. He leaves his door unlocked and all his windows open. Bod has no idea about security.

The advent of social media has created a new set of safety issues, such as privacy and security of personal data. In the following activities you will test your knowledge of online safety and security. Social media sites enable users to report abuse or offensive material.

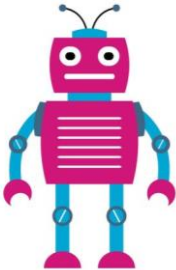
### Task A – Friend or Foe?

Bod has made many friends on Facebook. Some 'friends' are complete strangers, some are friends of friends and only a few are real friends that Bod knows personally.

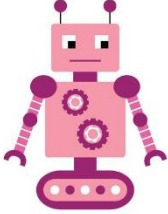
Bod	Bodette	???	Rabbot	RoboMutt
				

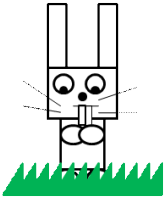
Bod needs to manage his Facebook page safely and securely.


Below is Bod's Facebook public profile:

FACEBOT <span style="float: right;"><a href="#">Log in</a></span>	
 <p><a href="#">Click here</a> to see photos of my friends</p>	<p><b>Personal Profile</b></p> <p><b>Name:</b> Bod</p> <p><b>Likes:</b> Inventing, embroidery and baking and making new friends</p> <p><b>Age:</b> 12</p> <p><b>Address:</b> 0100 Robotic Avenue Bot-on-the-Wold Botsworth</p>

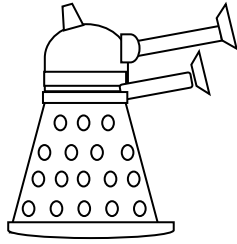
Below are three Facebook profiles of Bod's best friend Bodette, his Rabbot and his pet RoboMutt.

FACEBOT		<a href="#">Log in</a>
	<b><u>Personal Profile</u></b> <b>Name:</b> Bodette <b>Likes:</b> Algorithms and binary	

FACEBOT		<a href="#">Log in</a>
	<b><u>Personal Profile</u></b> <b>Name:</b> Rabbot <b>Likes:</b> Eating grass, being cute	

FACEBOT		<a href="#">Log in</a>
	<b><u>Personal Profile</u></b> <b>Name:</b> RoboMutt <b>Likes:</b> Chasing postmen/postwomen, being cuddled by Bod	

Bod has also received an invitation to connect with Fluffy (below). Bod doesn't know Fluffy personally, but Fluffy assures him that he is a friend of a friend.

**Personal Profile****Name:** Fluffy**Likes:** Anything that Bod likes**Age:** 12

1) Should Bod be wary of Fluffy's request? Give your reasons.

<b>Answer</b>	
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2) Bod has a public profile. Briefly give reasons below why this isn't a good idea.

<b>Answer</b>	
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3) Take a look at Bod's profile. Which information shouldn't he be displaying (especially on a public profile)? **You can tick more than one box:**

- a) His age
- b) His likes
- c) A link to friends' photos
- d) His address



4) Bod provides photos and personal details of his friends on his Facebook site. Give reasons below why this isn't a good idea.

<b>Answer</b>	
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5) Bodette has tagged a photo of herself and Bod on her Facebook site. Why should she be wary of tagging photos?

		✓
a	A tagged photo only goes into the owner's photo album so Bodette shouldn't worry	
b	A tagged photo cannot be displayed on social media sites	
c	A tagged photo automatically goes into the photo album of the person tagged and Bodette should be wary of Bod's level of security	
d	A tagged photo is shared across all social media sites	

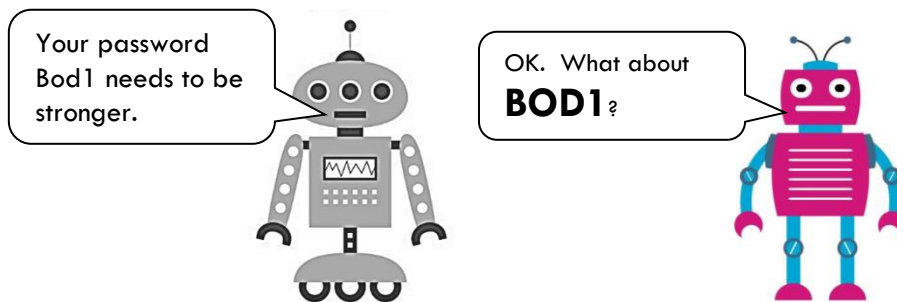
6) Bod uses Facebook Places tagging services, a GPS device that makes his location public in real time. Provide one advantage and one disadvantage of using this feature.

**Advantage:** .....

**Disadvantage:** .....

## Task B Safety PINS

In order to gain access to some online services, such as e-shopping, banking and social media, it is necessary to use passwords to enter the site.



**Scenario:** Bod has used the same password **bod1** for several accounts over the past 3 years as it is easy to remember.

1) Is **bod1** a weak or a strong password?

a) Weak

b) Strong

2) Passwords should contain at least eight characters and consist of a mixture of upper- and lower-case letters, numbers and symbols. A password should not contain names or other memorable information which can be easily 'cracked'. Which of the following is an example of a strong password matching all of the criteria?

	Password	✓
a	!B02?*1*	
b	Bod12345	
c	12345678	
d	MyNameIsBod1	
e	*bod&45!	

3) What advice could you provide to Bod about passwords and keeping his online accounts secure?

<p><i>Answer</i></p>	
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## Week 7 – Copyright

Piracy refers to illegally downloading and sharing digital content without a licence or the owner's permission.

### Task A Software Piracy

In this task you will test your knowledge of software piracy.

**Scenario:** Bod wants to download some software from a website he has never used before.

1) What dangers are there in downloading software from unknown sites?

		✓
a	Downloading a legal copy of the software	
b	Downloading malware such as a Trojan or zombie	
c	Downloading an installation manager	
d	Downloading critical updates	

2) What should Bod check for before downloading the software?

<b>Answer</b>	
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### Task B i-Patches

In this task you will test your knowledge of downloading software updates.

**Scenario:** Bod regularly downloads important security updates for his operating system.

1) Where can Bod go to find updates (patches) for his operating system?

- a) On the software manufacturer's website
- b) By clicking on a pop-up message on his screen
- c) On an unknown website that offers updates for all operating systems
- d) From an online store selling computer accessories and software

### Task C Fair Shares?

In this task you will test your knowledge of sharing files over the Internet.

**Scenario:** Bod wants to download some music from Botify and share it with his friends.

1) Can Bod do this? Click the correct statement below:

		✓
a	Music downloads are not subject to licensing and copyright law. Bod can share online content without permission.	
b	Music downloads are subject to licensing and copyright law, but this shouldn't prevent Bod from sharing online content.	
c	Music downloads are subject to licensing and copyright law. Bod can only share online content if this is explicitly allowed.	
d	Music downloads are subject to licensing and copyright law. Bod can share online content but only with other licensed users.	

### Task D Copy Right (or Wrong)?

In this task you will test your knowledge of copyright.

**Scenario:** Bod has found a website with some text and photos that he would like to copy and use on his own website.

1) What is the name for the act that protects owners' rights?

- a) Data Protection Act       b) Copyright Act       c) Licensing Act

2) What should Bod do before copying any content from the website?

<b>Answer</b>	
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Our digital footprint varies subject to our online activities, e.g. use of social media, photographs posted online, involvement in forums, blogs and interaction on external websites. Clearing your browser's history can help to protect your personal and private data that is stored each time you visit a website.

1) How could Bod's digital footprint be detrimental to his future employment prospects?

<b>Answer</b>	
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2) Explain how Bod can help keep his online reputation intact.

<b>Answer</b>	
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## Week 8 – Revision

You need to revise for the year 8 programming assessment. You could create revision cards or a mind map for the following topics:

- Computational Thinking
- Flowcharts
- Boolean logic
- Binary
- Assignment and string concatenation
- IF statements
- Random module

Use the resources on our Google classroom or BBC Bitesize to help you revise:

<https://www.bbc.co.uk/bitesize/subjects/zvc9q6f>