

END OF  
ASSESSMENT  
YEAR

# Y7 COMPUTING REVISION BOOKLET

NAME: \_\_\_\_\_

FORM: \_\_\_\_\_

TICK YOUR TEACHER:

TEACHER:  CW   TH   CH  TR

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## HOW TO USE THIS REVISION BOOKLET.

We will use several symbols throughout this revision guide. You will have been shown how to use it during the lesson.

 Will give you top revision tips or ideas or links to more information if you need it.

 **FREE RECALL REVISION STRATEGY RECOMMENDED.**

- On a blank piece of paper, write down everything you know about a topic (you could make a mind map)
- Use your notes to add anything you missed in a different colour
- The following day try the above steps again.
- Repeat for different topics but do not do the same topic twice in one day!

 **TESTING & QUIZZING REVISION STRATEGY RECOMMENDED.**

- Answer questions on topics
- Use past exam questions or quiz questions
- Take time to understand **WHY** you got some of the answers wrong
- **RETEST** yourself later on (don't just test yourself once!)
- **RAG** rate yourself on topic areas and focus on your weaknesses. Practice planning exam question answers (bullet points, drafts, speed plans etc...)

 **FLASH CARDS REVISION STRATEGY RECOMMENDED.**

- Write down a key word or question from a topic on a card and write the definition/answer on the other side of the card
- Mix the cards up.
- Pull out a card at random and try to remember the answer/definition.
- Say the answer **OUT LOUD** before you turn the card over (**this is important!**)

 You can use the website/app Quizlet to make online flashcards!



Some tips will ask you to visit websites.

If you have links to TEACH ICT: You will need the following username and password:

**Username: WF104JQ Password: kilobyte3**



## HARD LEARNING QUESTIONS

YOU WILL NEED TO REMEMBER THESE FOR YOUR EXAM.

GET PARENTS/GUARDIANS OR FRIENDS TO TEST YOU ON THEM. THE MORE YOU PRACTICE MORE YOU WILL GET RIGHT!

1) WHAT DOES THE "E" IN E-MAIL STAND FOR?

**Electronic**

2) WHICH WEBSITE SHOULD YOU GO ON TO FIND OUT MORE ABOUT STAYING SAFE ONLINE?

**[www.thinkuknow.co.uk](http://www.thinkuknow.co.uk)**

3) SENDING NASTY MESSAGES USING ANY FORM OF TECHNOLOGY IS KNOWN AS WHAT?

**Cyberbullying**

4) WHAT DO FORMULAE START WITH IN SPREADSHEETS?

**= (equals sign)**

5) WHAT FUNCTION IN A FORMULA WOULD YOU USE TO ADD UP A RANGE OF CELLS?

**SUM**

6) WHAT IS AN ALGORITHM?

**A sequence of instructions to solve a problem**

7) WHAT IS A VARIABLE?

**A named storage location**

8) WHAT IS SCRATCH EASY TO USE FOR?

**Creating computer programs or games**

9) WHAT IS ITERATION?

**A loop or repeating procedure**

10) WHAT IS A DATABASE?

**A file that contains organised data**



**TIP: LITTLE AND OFTEN IS KEY TO GOOD REVISION. YOU WILL FORGET THEM. TRY AND THINK. THEN GET REMINDED.**

## TOPIC 01: E-SAFETY & ELECTRONIC COMMUNICATION

STEP STATEMENT	STEP	RAG RATE		
		😊	😐	😞
I can <b>name</b> the e-safety S.M.A.R.T. rules.	1			
I can <b>describe</b> a number of ways to protect against myself against internet dangers.	2			
I can <b>discuss</b> good and bad behaviour online, including cyberbullying and scams.	3			
I can <b>explain</b> key terms to do with privacy and security threats.	4			
I can <b>demonstrate</b> how to identify and report inappropriate conduct.	5			
I can <b>illustrate</b> , using examples, how content on the internet can remain persistent and out of our control.	6			
I can <b>investigate</b> different ways in which individuals or organisations can protect their data.	7			
I can <b>compare</b> and <b>evaluate</b> different ways in which technological developments have impacted the world.	8			
I can <b>evaluate</b> the benefits and drawbacks of electronic communication with accurate examples and justifications.	9			



**FREE RECALL: WHAT CAN YOU RECALL ABOUT E-SAFETY & ELECTRONIC COMMUNICATION TOPIC?**



**Tip use the next pages to help you fill in more information.**

**FLASH CARDS: CAN YOU MAKE SOME FLASH CARDS USING THE INFORMATION BELOW?**

The Internet is full of information, videos and pictures. The fact the internet exists means that we can use things like Email (Electronic Mail) to communicate with people all over the world. You can play games online with new people, make friends and enjoy working as a team.

However, when using the internet you must remember the SMART RULES:

**S = Safe – Keep personal details safe**

**M = Meeting Up – Always take an adult with you if you want to meet an online friend.**

**A = Accepting Emails – Never open attachments from emails you don't know who they are from, they could contain viruses.**

**R = Reliable – The person who you think you might be talking to may not be who they say they are.**

**T = Tell Someone – The most important rule, if anything upsets you online, or you are not sure what to do, TELL SOMEONE, preferably a responsible adult or teacher.**

You also need to understand how report abuse if you need to.

 **For more information you could visit: [www.thinkuknow.co.uk](http://www.thinkuknow.co.uk) there are loads of tips and advice, things you need to know.**

Remember:

- Personal information is anything that can help to identify you, yes, even your school name.
- Keep passwords safe. Make sure they are not easily guessable. Ideally they should be a mix of UPPER and lowercase letters as well as numbers or even symbols.
- CEOP is who you report abuse to. This can be anything from making you have sex when you don't want to, to asking you to do sexual things on webcam. All of it is classed as abuse and CEOP want to know about it.

 **You could go on your school VLE and look at Assessment 1 you have done to revise this.**

Some issues to know about:

**CYBERBULLYING:** Is where any technology is used to bully other people, this might be on social networks like Facebook or via text messages or mobile phone calls.

**PRIVACY:** More and more information is being put online about us. Most of it we put there ourselves. When we use Mobile phones our GPS (Global Positioning System) locations are stored, who has access to this? Sometimes this information can be used against you. For example, if you post online about being on holiday and someone were to see it who wasn't your "friend" they could in fact burgle your house knowing you would be away.

**IDENTITY THEFT:** Where someone pretends to be you and takes out loans or applies for passports / credit cards in your name, which could lead you to getting into trouble.

**MALWARE:** Sometimes people share files that are not real, they are actually a form of software called malware, these are not good for your computer. And can lead to identity theft. They are often found on file sharing websites.

To stop getting unwanted viruses on your computer, you should know you can install ANTI-VIRUS SOFTWARE, when this is up to date it will find and stop viruses from attacking your computer.

An email address always has an '@' (at) sign in it. E.g. cwhitworth@castlefordacademy.com

 If you can't remember how to send an email, log into Office 365 and have a look, but remember school emails are for school work only, they are not private.

Things to remember: You can attach files to emails, such as images, work, music or video, by adding an Attachment. You do this by clicking on the paperclip button.

SPAM is an email about something you don't want. You should never reply to spam, instead delete it or set up a junk folder.



More tips:

<http://www.kidsmart.org.uk/beingsmart/>

[http://teach-ict.com/2016/ks3/sows/sow2/s\\_lesson1.php](http://teach-ict.com/2016/ks3/sows/sow2/s_lesson1.php)

[http://teach-ict.com/2016/ks3/sows/sow2/s\\_lesson2.php](http://teach-ict.com/2016/ks3/sows/sow2/s_lesson2.php)

[http://teach-ict.com/2016/ks3/sows/sow2/s\\_lesson3.php](http://teach-ict.com/2016/ks3/sows/sow2/s_lesson3.php)



**SECOND FREE RECALL: WHAT CAN YOU RECALL NOW HAVING DONE SOME REVISION ABOUT E-SAFETY & ELECTRONIC COMMUNICATION TOPIC?**



Did you remember more than to begin with? Anything that now appears twice is likely in your long-term memory. Things missing from here are what you should revise more, with flash cards.

## TOPIC 02: DATA HANDLING

STEP STATEMENT

STEP

RAG RATE



I can <b>state</b> the difference between data and information.	1			
I can <b>explain</b> what database is and why they are useful.	2			
I can <b>use</b> database sorting and filtering.	3			
I can <b>explain</b> the keywords to do with databases.	4			
I can <b>complete</b> simple binary conversions (e.g. 101 = 5).	5			
I can <b>complete</b> simple Binary addition calculations.	5			
I can <b>examine</b> how text is represented in binary.	6			
I can <b>design</b> a simple query using Boolean and relational operators to search for information	7			
I can <b>construct</b> key fields and <b>justify</b> their use.	8			
I can describe a DBMS and <b>give reasons</b> why a DBMS is useful.	9			



**FREE RECALL: WHAT CAN YOU RECALL ABOUT DATA HANDLING TOPIC?**



**Tip use the next pages to help you fill in more information.**



**FLASH CARDS: CAN YOU MAKE SOME FLASH CARDS USING THE INFORMATION BELOW?**

Databases store organised data in tables. They are useful because it keeps it all safe in one place, it is quicker than a filing cabinet to get to, also you can search for things quickly using queries. Sorting or re-ordering the information in a database is quick and easy, databases are amazing! Although if they break, all your data will be lost. Unless you back it up!

Remember data is just numbers or letters, that do not mean anything. 1111111111 is data. When I tell you that 0 = no and 1 = yes and it is about whether people in a class like Computing: it makes sense and becomes meaningful, now it is information.

Keywords we have used when using databases:

Criteria - This is specific information about what you are searching for.

Database - A program used to store lots of data.

Validation - This is added to a field to stop incorrect data being entered.

Table - Data is organised and stored in this within a database.

Record - This is one entry in a database about an object.

Data Types - Examples are: Text, Number, Date/Time and Hyperlink.

Field - A title for the type of information held in the database table (e.g. Name)

We also learnt about Binary:

Computers are made up of switches (transistors) that have two states, off and on. These are represented on a computer as binary digits 0 and 1.

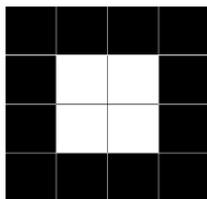


Anything digital works with 0 and 1 binary.

Bitmap images are stored in Binary. Here is an example.

If 1 = white and 0 = black, then the binary code for an image would be:

0	0	0	0
0	1	1	0
0	1	1	0
0	0	0	0



And it would display like this:

Of course most images on computers use more than 1 bit to store colour.

Most use 24bit which allow  $2^{24}$  different colours to be stored (16,777,216: sixteen million, seven hundred and seventy-seven thousand, two hundred and sixteen different colours to be displayed)

There are only 10 types of people that understand binary, those that do and those that don't...

**Get it?**

Normal Denary numbers (or decimal numbers, same thing!) can be represented in Binary as follows:

Binary Value	Decimal Representation	Decimal Value
	8 4 2 1	
0 0 0 0	0 + 0 + 0 + 0	0
0 0 0 1	0 + 0 + 0 + 1	1
0 0 1 0	0 + 0 + 2 + 0	2
0 0 1 1	0 + 0 + 2 + 1	3
0 1 0 0	0 + 4 + 0 + 0	4
0 1 0 1	0 + 4 + 0 + 1	5



**QUIZ YOURSELF ON THESE BINARY CONVERSIONS.**

- Convert 6 to Binary: \_\_\_\_\_
- Convert 9 to Binary: \_\_\_\_\_
- Convert 3 to Binary: \_\_\_\_\_
- Convert 0 to Binary: \_\_\_\_\_
- Convert 12 to Binary: \_\_\_\_\_
- Convert 0111 to Denary: \_\_\_\_\_
- Convert 1111 to Denary: \_\_\_\_\_
- Convert 0001 to Denary: \_\_\_\_\_
- Convert 1011 to Denary: \_\_\_\_\_
- Convert 0010 to Denary: \_\_\_\_\_



You can check your answers at the back of this booklet) **THEN MAKE UP SOME OF YOUR OWN ANOTHER DAY. CAN YOU STILL DO IT?**

1 + 1 = 10?

- 0 + 0 = 0
- 0 + 1 = 1
- 1 + 0 = 1
- 1 + 1 = 0 *Carry 1*
- 1 + 1 + 1 = 1 *Carry 1*

You should always write binary additions in columns.

	1	1	1	0	14
	1	1	0	0	12
	=	1	1	0	10
Carry Bit					
Rule 5					
Rule 4					
Rule 2 or 3					
Rule 1					



**QUIZ YOURSELF ON THESE BINARY ADDITIONS.**

- Add these two binary numbers: 0001 + 0010
- Add these two binary numbers: 0011 + 0010
- Add these two binary numbers: 0101 + 0010
- Add these two binary numbers: 0111 + 0110
- Add these two binary numbers: 1000 + 0111

ASCII is the American Standard Code for Information Interchange, and uses binary numbers to represent all characters used for the English language.

This table shows some examples of letters represented using the ASCII character set:

Character	Denary value	Binary value
N	78	1001110
O	79	1001111
P	80	1010000
Q	81	1010001
R	82	1010010



You can make up your own, or look back on the VLE test: Assessment 1 to remind you.

<https://www.bbc.co.uk/bitesize/guides/zp73wmn/revision/5>

[http://www.teach-ict.com/2016/ks3/sows/sow12/s\\_lesson1.php](http://www.teach-ict.com/2016/ks3/sows/sow12/s_lesson1.php)

[http://www.teach-ict.com/2016/ks3/sows/sow12/s\\_lesson2.php](http://www.teach-ict.com/2016/ks3/sows/sow12/s_lesson2.php)



**SECOND FREE RECALL: WHAT CAN YOU RECALL NOW HAVING DONE SOME REVISION ABOUT DATA HANDLING TOPIC?**



Did you remember more than to begin with? Anything that now appears twice is likely in your long-term memory. Things missing from here are what you should revise more, with flash cards.

## TOPIC 08: ALGORITHMS & PROGRAMMING

STEP STATEMENT	STEP	RAG RATE
		<span style="background-color: green; color: white; padding: 2px;">😊</span> <span style="background-color: yellow; color: black; padding: 2px;">😐</span> <span style="background-color: red; color: white; padding: 2px;">😞</span>

I can <b>define</b> what algorithms is.	1			
I can <b>create</b> simple linear algorithms.	2			
I can <b>represent</b> algorithms symbolically.	3			
I can <b>explain</b> how simple algorithms work.	4			
I can <b>select</b> correct programs to solve a problem.	5			
I can <b>decompose</b> problems into smaller parts.	6			
I can <b>explain</b> how algorithms work and correct errors in them.	7			
I can <b>construct</b> a program to solve a computational problem.	8			
I can <b>assess</b> my program in terms of its efficiency.	9			



**FREE RECALL: WHAT CAN YOU RECALL ABOUT ALGORITHMS & PROGRAMMING TOPIC?**



**Tip use the next pages to help you fill in more information.**



**FLASH CARDS: CAN YOU MAKE SOME FLASH CARDS USING THE INFORMATION BELOW?**

Computers control a multitude of different things every day!

For example, Lighthouses, Traffic Lights, Lifts, Zebra crossings, Life support machines, Train crossing, Auto pilot on aircraft etc.



**CAN YOU THINK OF MORE?**

Computers follow computer programs, which are made up of algorithms. Algorithms are sequences of instructions that are written to perform a task.

For example:

Fill the kettle

Boil the water

Put tea bag in cup

Pour Boiling water into cup

Add milk

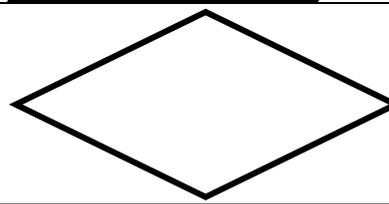
Drink tea

We used Big Traks to design sequences of instructions to solve patterns and the Big Trak challenge.

Some keywords to try and remember are:

- **Abstraction** – Simplification of a problem. An abstraction of a wheel is a circle.
- **Algorithm** - a sequence of instructions to solve a problem.
- **Computer Program** – code that is executed on a computer to run.
- **Binary** – 0 and 1's that the computers understand.
- **Efficient** – programs need to run quickly saving time.
- **Debug** – fixing problems in the code
- **Iteration** – repeat or loop.

Algorithms can be represented symbolically using flowcharts using the shapes in the following table:

	<b>Terminator</b> Used for start and stop instructions.
	<b>Process</b> Used for doing something.
	<b>Input / Output</b> Used for inputting data or displaying/ outputting data.
	<b>Decision</b> Used for making a Yes or No choice. Can be called selection.
	<b>Arrow</b> Used to show the flow of data.



**CAN YOU MAKE A SIMPLE FLOWCHART?**

Using the shapes below:

Can you create a simple flowchart?  
To turn a light on or off?



START

Switch Light On

Switch Light Off

Is light switch on?

No Yes



You can practice making algorithms by downloading the app or going on:

Lightbot : <https://www.lightbot.com/flash.html>

Or look back on the VLE test: Assessment 2 to remind you.



**SECOND FREE RECALL: WHAT CAN YOU RECALL NOW HAVING DONE SOME REVISION ABOUT ALGORITHMS & PROGRAMMING TOPIC?**



**Did you remember more than to begin with? Anything that now appears twice is likely in your long-term memory. Things missing from here are what you should revise more, with flash cards.**

## TOPIC 04: INTRO TO COMPUTER SYSTEMS

STEP STATEMENT	STEP	RAG RATE		
		😊	😐	😞
I can <b>identify</b> some hardware devices	1			
I can <b>demonstrate</b> understanding of what kinds of devices can be considered computers	2			
I can <b>explain</b> what input and output devices are	3			
I can <b>explain</b> what several input and output devices do	4			
I can <b>briefly describe</b> what a CPU is	5			
I can <b>compare</b> different features of storage devices	6			
I can <b>design</b> a computer to a given specification	7			
I can <b>make</b> appropriate choices about usability and functionality to suit a users' needs.	8			
I can <b>evaluate</b> a computer system and comment on its efficiency and determine the appropriate user for it given reasoned suggestions why.	9			



**FREE RECALL: WHAT CAN YOU RECALL ABOUT INTRO TO COMPUTER SYSTEMS TOPIC?**

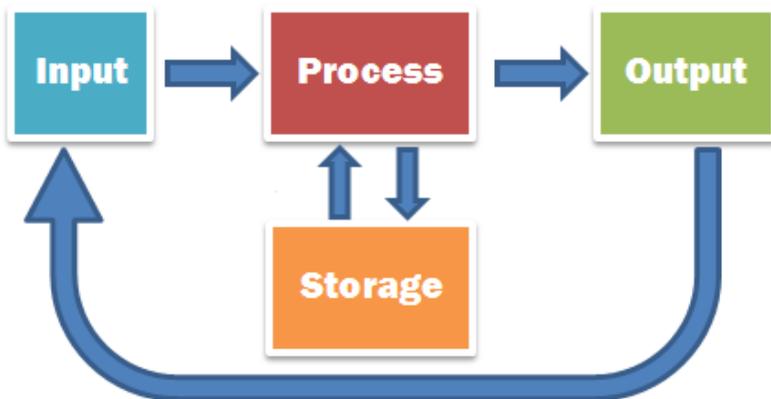


**Tip use the next pages to help you fill in more information.**

**2** FLASH CARDS: CAN YOU MAKE SOME FLASH CARDS USING THE INFORMATION BELOW?

As mentioned in the Algorithms and Programming section, we have lots of different computer systems currently in the world.

The devices required to make up a computer system is:



Use the Teach- ICT lessons to help you with this. This is the last thing you have been learning about.

[http://www.teach-ict.com/2016/ks3/sows/sow15/s\\_lesson1.php](http://www.teach-ict.com/2016/ks3/sows/sow15/s_lesson1.php)

[http://www.teach-ict.com/2016/ks3/sows/sow15/s\\_lesson2.php](http://www.teach-ict.com/2016/ks3/sows/sow15/s_lesson2.php)

[http://www.teach-ict.com/2016/ks3/sows/sow15/s\\_lesson3.php](http://www.teach-ict.com/2016/ks3/sows/sow15/s_lesson3.php)

Storage devices can be: Hard Drives, USB memory sticks, SD cards, Cloud storage etc.

Remember the processor is like the brain of the computer and is needed to make all the hardware of a computer work. It is like the “brain of the computer”.



Input quiz: <http://www.teach-ict.com/xml/finished/2246/spot.htm>

Output Quiz: [http://www.teach-ict.com/gcse\\_new/computer%20systems/output\\_devices/quiz/walkplank\\_output.htm](http://www.teach-ict.com/gcse_new/computer%20systems/output_devices/quiz/walkplank_output.htm)

Or look back on the VLE test: Assessment 2 to remind you.



**SECOND FREE RECALL: WHAT CAN YOU RECALL NOW HAVING DONE SOME REVISION ABOUT INTRO TO COMPUTER SYSTEMS TOPIC?**



**Did you remember more than to begin with? Anything that now appears twice is likely in your long-term memory. Things missing from here are what you should revise more, with flash cards.**

## TOPIC 05: MICRO:BIT PROGRAMMING

STEP STATEMENT	STEP	RAG RATE		
		😊	😐	😞
I can re-create simple programs.	1			
I can debug simple programs.	2			
I can develop programs to do specific things.	3			
I can explain and use variables and assignment.	4			
I can use selection in my programming (if then, else).	5			
I can implement iteration (looping) with a basic understanding.	6			
I can create loops that terminate based on a condition.	7			
I can improve programs to make them more efficient.	8			
I can create my own modular programs that use functions.	9			



**FREE RECALL: WHAT CAN YOU RECALL ABOUT MICRO:BIT PROGRAMMING TOPIC?**



**Tip use the next pages to help you fill in more information.**



**QUIZ/TEST: CAN YOU FOLLOW THE TUTORIALS ON THE MICRO:BIT WEBSITE?**

The best way to revise this topic, is to keep trying new things with it. The tutorials on the website are the best place to go for this. But as this was the most recent topic you have completed, you probably should spend more time on the other topics.

#### Tutorials



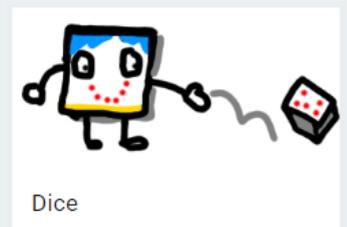
Flashing Heart



Name Tag



Smiley Buttons



Dice

<https://makecode.microbit.org/>



**SECOND FREE RECALL: WHAT CAN YOU RECALL NOW HAVING DONE SOME REVISION ABOUT MICRO:BIT PROGRAMMING TOPIC?**



Did you remember more than to begin with? Anything that now appears twice is likely in your long-term memory. Things missing from here are what you should revise more, with flash cards.



## REVISION TIPS:

# FOR REVISION TO BE EFFECTIVE IT SHOULD BE DIFFICULT.

I know you do not want to hear this, but the simple fact is that revision only works when it's hard.

**Below you will** see some do's and don'ts of revision. You'll also notice that all the poor revision techniques are also the easiest ones. **If you want success in any exam, you'll need to work hard.**

**Remember, nothing that is worth having comes easy!**

## DO:

Be honest with yourself about what you can and can't do.

**Then revise your weakest areas.**

**Make sure you understand a topic before you revise it.**

It's almost impossible to remember something you don't understand! Ask a teacher if you're stuck.

**Space out your revision. You should revise a topic for 30-60 minutes and then not come back to it for a day or two.**

**This will make it harder to remember but will pay off in the long run!**

**Change the topic/subject you revise regularly.**

**Be deliberate with your revision. Revise, practice, check and then redraft your answer.**

## DON'T:

**Revise by reading a textbook or your revision guide**

**Revise by copying out information**

**Revise things you already know and are good at!**

**Revise the same topic for a long period of time**

**Revise using the same methods all the time**

**Rely on cramming the night before an exam**

**Give up.**

**ANSWERS TO QUESTIONS IN REVISION BOOKLET:****QUIZ YOURSELF ON THESE BINARY CONVERSIONS.**

1. Convert 6 to Binary: 0110
2. Convert 9 to Binary: 1001
3. Convert 3 to Binary: 0011
4. Convert 0 to Binary: 0000
5. Convert 12 to Binary: 1100
6. Convert 0111 to Denary: \_\_\_\_\_
7. Convert 1111 to Denary: \_\_\_\_\_
8. Convert 0001 to Denary: \_\_\_\_\_
9. Convert 1011 to Denary: \_\_\_\_\_
10. Convert 0010 to Denary: \_\_\_\_\_

**QUIZ YOURSELF ON THESE BINARY ADDITIONS.**

1. Add these two binary numbers: 0001 + 0010
 
$$\begin{array}{r} 0001 \\ 0010 + \\ \hline 0011 \end{array}$$
2. Add these two binary numbers: 0011 + 0010
 
$$\begin{array}{r} 0011 \\ 0010 + \\ \hline 0101 \end{array}$$
3. Add these two binary numbers: 0101 + 0010
 
$$\begin{array}{r} 0101 \\ 0010 + \\ \hline 0111 \end{array}$$
4. Add these two binary numbers: 0111 + 0110
 
$$\begin{array}{r} 0111 \\ 0110 + \\ \hline 1101 \end{array}$$
5. Add these two binary numbers: 1000 + 0111
 
$$\begin{array}{r} 1000 \\ 0111 + \\ \hline 1111 \end{array}$$



**CAN YOU MAKE A SIMPLE FLOWCHART?**

Using the shapes below:

Can you create a simple flowchart?  
To turn a light on or off?

