Computing, Engineering Technologies and Nutrition Faculty

Knowledge Organiser Year 7 COMP1 **Rotation 1**

	Key Term	Definition	Examples
Week 1 **Digital Literacy**	Hardware	Physical components of a computer (you can pick it up)	Keyboard, Mouse, Monitor, Processor.
	Software	The programs that run on the computer.	Microsoft Word, Serif Draw Plus.
	Network	Computers and other devices that are connected together.	The school network. Ring, Star, Bus topologies.
	Internet	Hardware. A global computer network that includes computers, servers, cables, tablets.	Servers, computers.
	World Wide Web	Connected web pages viewed on a web browser.	Youtube web pages.
Week 2 **E-Safety**	Cyberbullying	Bullying other people using electronic devices.	Offensive emails or text messages.
	Digital footprint	The digital trail you leave behind when you have been online. Includes Facebook posts, Instagram pictures, what web sites you have been on.	What comments you have made online.
	Consequence	The results of an action you have taken – if you work hard you will get good marks!	Epraise for great work, X for bad behaviour.
	Reliability	How trustworthy is the information, is it biased?	The BBC is considered a reliable source for news.
	Validity	How correct or up to date is the information?	Met Office weather forecast.
Week 3 **Kodu**	Algorithm	A sequence of instructions to perform a particular task.	Input name Output name
	Sequence	Instructions are executed in the order they are written in.	1) Wake up 2) Get dressed
	Input	A way to get data into a computer.	Press Arrow key.
	Output	A way to show results or an action.	Kodu moves.
	Variable	A value that can change.	Age, Shoe Size.
	Sensor	Something that takes a reading.	Thermometer.

Equipment

Week 4

Switch

Network Interface Card (NIC)

Router

Ethernet cable

Servers

Wireless NIC

Processes

Week 5

Psuedocode is a way to create an algorithm:

```
dog_age← USERINPUT
IF dog_age <=2 THEN
        human_age = dog_age*12
ELSE
        human_age = 24 + dog_age-2*6
END IF
OUTPUT human_age
```

What does this algorithm do?

Research

https://filestore.aqa.org.uk/resources/computing/AQA-8520-TG-PC.PDF

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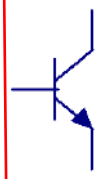
Knowledge Organiser Year 7 Nightlight **Rotation 2**

Week 1

Identify circuit symbols:

Battery



NPN Transistor

Light Emitting Diode (LED)

Light Dependent Resistor (LDR)

Diode

Single Pole Single Throw (SPST) Switch

Resistor

Week 3

Half Round File

Flat File

Round File

Machine Vice

Wet & Dry

Needle Files

Week 2

Name the parts of the pillar drill:

Motor

Pulley & Belt Guard

Emergency Stop

Table

Pillar

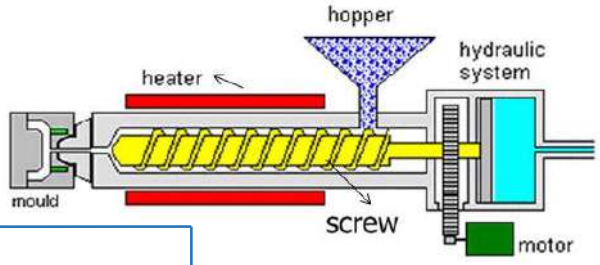
Handle

Start / Stop Button

Drill Bit

Week 4

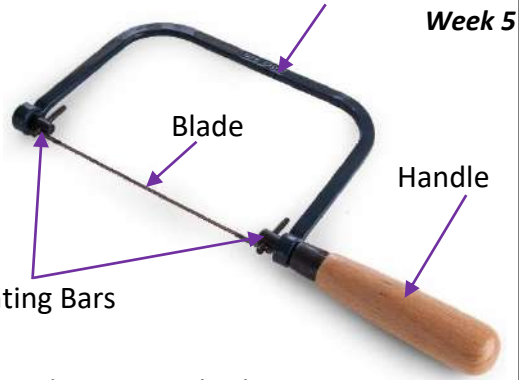
Injection Moulding Machine



Name the parts of the machine

Week 5

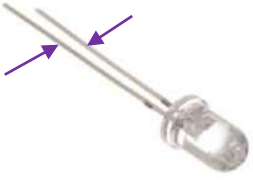
Name the parts of the coping saw:



High Impact Polystyrene (Hips)

Acrylic

Anode Cathode

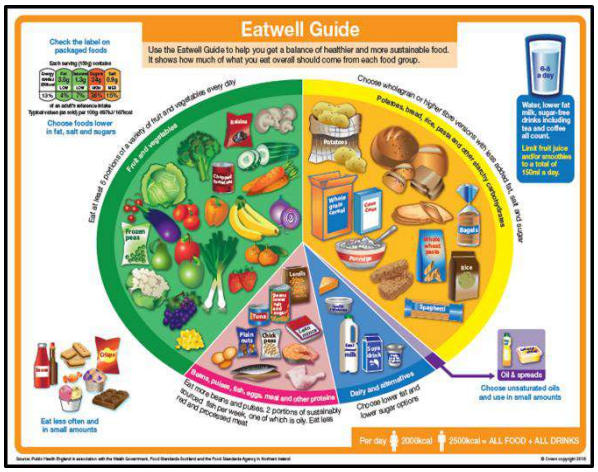


Further Key Words

Soldering Iron
Printed Circuit Board
Solder
Wire Cutter
Vacuum Forming
Wire Strippers

Knowledge Organiser Year 7 Food Technology

Rotation 3



Week 1

Weighing and Measuring:

25g = 1 oz

1 level tablespoon (tbsp) = 15g

1 heaped tablespoon (tbsp) = 25g

1 teaspoon (tsp) = 5 g

Approximately 500ml = 1 pint

Week 2

Everything in Food is based on the Eatwell Guide. Become familiar with this. The main summary points are:

- Eat at least 5 portions of fruit and vegetables every day
- Base meals on starchy carbohydrates, wholegrain where possible
- Have dairy or alternatives – look for low fat and sugar options
- Eat protein with every meal- pulses, fish, eggs, meat
- Choose unsaturated oils and spreads, eat in small amounts
- Drink 6 – 8 cups/glasses of fluid a day
- IF YOU CHOOSE TO HAVE FOOD OR DRINKS HIGH IN FAT AND SUGAR, DO SO LESS OFTEN AND IN SMALL AMOUNTS.

Week 3

The Science of Food.

Dextrinization – Bread browns on application of heat, for example, toast browning under a grill. The heat gets onto the bread through radiation, from the grill elements in the cooker. The starch in the bread breaks into smaller groups of sugars and darkens, or **dextrinizes.**

Gelatinisation – starch grains swell when they are cooked with a liquid (flour in milk for a white sauce). They burst and release starch and in doing so, they thicken the liquid they are in.

How heat enters food – heat enters food from the outside inwards. If you want food ie a potato to cook quickly, then chop it up smaller.

There are **THREE** ways that heat can be **transferred** to food:

CONDUCTION (a pan on the hob. The base of the pan gets hot and warms the food, ie baked beans).

CONVECTION (hot air rises and falls as it cools, to get hot again, ie food cooking inside the oven**).**

RADIATION heat food directly under it, ie the grill browning toast)

Week 4

Sensory Analysis is about using our senses of **smell, taste, sight,** and **hearing** to evaluate food and drinks.

Foods can be classed as being **bitter, sour, salty** and **sweet.**

Hygiene and **safety** are different**.** Hygiene refers to how clean something is and safety refers to making sure that accidents are unlikely to happen.

During food lessons, practical techniques used in year 7 include: bridging, clawing, chopping, slicing, rubbing-in, coating, baking, stewing, boiling, making a white sauce and cooking rice.

REMEMBER TO ALWAYS BRING AN APRON TO PRACTICAL LESSONS FOR HYGIENE REASONS.

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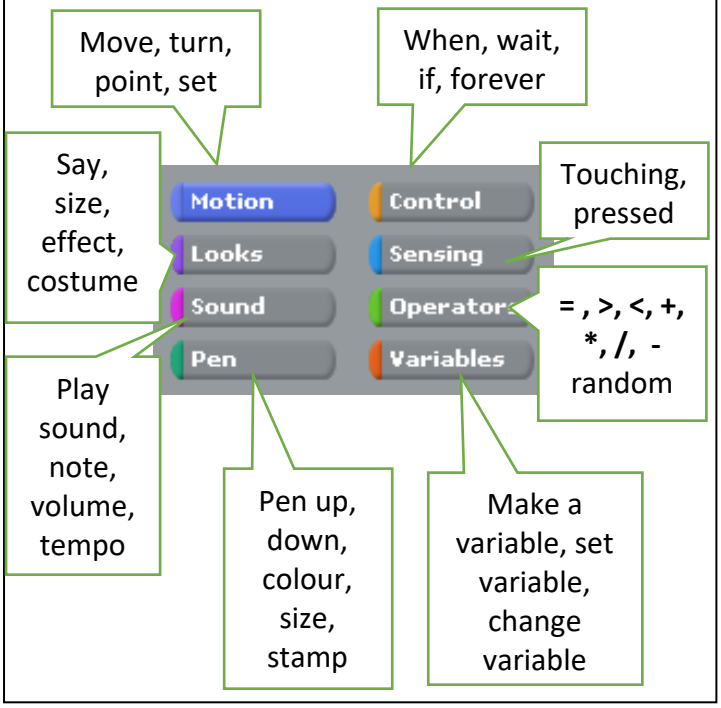
Knowledge Organiser Year 7 COMP2 **Rotation 4**

	Key Term	Definition	Examples
Week 1 Scratch	Algorithm	A sequence of instructions to perform a particular task.	If touch fish: points=points+5
	Programming	Writing a computer program in a language such as Small Basic or Python.	X=X+Y Print(X)
	Variable	A value that can change.	Score, Level, Health
	Operator	Used to compare values.	=, <, >, >=, <=
	Sensor	Something that takes a measurement or reading.	Xpostion, yposition, direction, touching …
Week 2 Small Basic	Sequence	Instructions are executed in the order they are written in.	1) Enter name 2) Print name
	Selection	There is a choice in the code of what code to run next.	Want to draw a triangle? If answer = "yes"; Draw triangle
	Iteration	Repeating a set of instructions.	Repeat 4: Draw line, turn 90
	Sub routine	A separate chunk of code that does a particular job. They only run when called.	Sub Square: Repeat 4 Draw line, turn 90
Week 3 HTML	HTML	Hyper Text Markup Language. Language that websites are written in.	<P> This is a new paragraph</P>
	Browser	Software we use to access the Internet.	Internet Explorer, Safari.
	Webpage	A document that is viewed on a web browser.	www.google.com
	Tag	Key words used on a webpage. Search engines use tags to find relevant pages.	Animal, Hotel, Food
	Hex Code	Code used to represent colours	Red = #FF0000, Yellow = #FFFF00
	Internet	Hardware. A global computer network that includes computers, servers, cables, tablets.	Servers, computers, cables.

Equipment

Week 4



Processes

Week 5

HTML uses lots of different instructions:

```
<html>
<head>
<title>World Travel - PARIS</title>
<style>
body
{
    background-color: #762312;
    color: #FFF000;
    font-family: Cambria, arial, Times, serif;
    }
</style>
</head>
<body>
<h1 align=center>
SEE THE WORLD'S GREATEST CORAL REEF</h1>
```

Research

https://htmlcolorcodes.com/

Knowledge Organiser

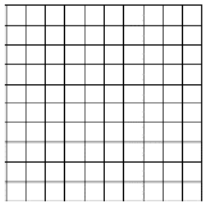
Rotation 5

Year 7 Cosmetics

Week 1

Identify papers & boards:

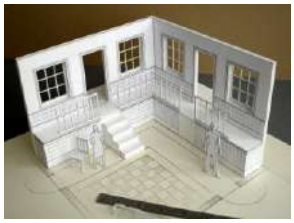
Cartridge Paper



Grid Paper

Carton Board

Corrugated Card



Foam Board

Styrofoam

Foil Lined Board

Polypropylene Sheet

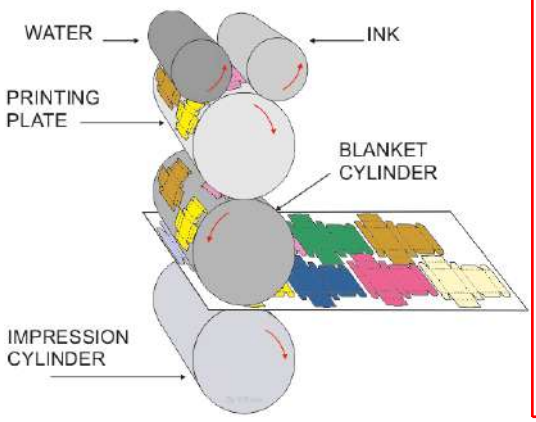
Duplex Board

Further Key Words

Isometric
Construction line
Net
Working drawing
Product analysis
Outline
Thick and thin line technique
Sketching
Tonal shading
Rendering
Scale drawing
Dimensions

Week 2 & 3

Explain offset lithography printing:

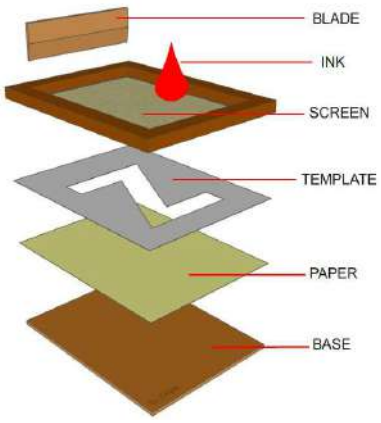


1. The printing plate has the image to be printed on its surface (the image stands out slightly from the printing plate surface).
2. The printing plate is kept dampened. Ink is applied to the plate.
3. As the printing cylinder rotates the ink is transferred to the rubber blanket cylinder.
4. The ink, now on the rubber blanket cylinder is pressed onto the paper or card as it is pulled through the machine.

If different colours are needed for the final print - the same card/paper will be sent through the machine and each time different negatives and colours will be applied. This is done until the print is completed.

Week 4 & 5

Explain the screen printing process:



1. The paper to be printed on is placed on top of the base.
2. A template made from card, with the required shape cut out of it is placed on top of the paper.
3. A screen is placed on top of the template. The screen is made of stretched nylon fabric and has a wood frame to hold it in place.
4. Ink is then squeezed through the nylon fabric.
5. A blade is used to spread the ink out and push it through the fabric, through the template and onto the paper.
6. The paper is taken out of the screen printing equipment and the printed pattern can clearly be seen.