

Year 9 Knowledge Organiser

Summer Term – CORE CONTENT



How do I complete Knowledge Organiser Homework?

Link to self-quiz video: <u>https://youtu.be/cFUuhtPIMPU</u>



Step 1

Check on: ShowMyHomework for what words / definitions / facts you have been asked to learn.

Step 2

Write today's date and the title from your Knowledge Organiser in your selfquizzing book.

Step 3

Read the section of the Knowledge Organiser that you are studying. Read it slowly, you can read it aloud and with a ruler if this helps.

Step 4

Cover up the section and try to write out the information exactly as it is written on the Knowledge Organiser in your selfquizzing book.

DO NOT PEEK!

Step 5

Uncover the section and compare it to what you have written. If you have made mistakes or missed parts out, add them in using a pencil or a different colour.

Step 6

Repeat steps 3-5 again until you are confident. You will need to bring your self-quizzing book in every day and your teacher will check your work. You will be tested in class.

Knowledge Organiser - YEAR 9 - SUMMER TERM



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32 PE - Respiratory System

Art - Circles

1. Judy Pfaff

- A pioneer of installation-art
- Born in London in 1946
- Works in painting, printmaking, sculpture and installation
- Described as painting in space
- References spiritual, botanical and art historical imagery
- · Work takes months or years to make, but exhibitions last only weeks
- Does not give narrative meaning to her work

2. Textiles

Applique: a decoration made by cutting shapes of fabric and sewing them to another piece of fabric Embellishment: a decorative detail or feature added to

something to make it more attractive Stitch: a loop of thread than can connect fabric pieces together, either by hand or machine

Fabric: cloth produced by weaving or knitting textile fibres Surface decoration: applying decorative stitches and other embellishments to the surface of fabric

Fabric manipulation: altering and changing the appearance of fabric by using different methods such as pulling the fibres, twisting and stitching

Couching: stitching over yarn or thread

Weaving: crossing threads over and under each other Fabric fusion: cutting, attaching and marking man-made fabric with a soldering iron

Batik: dyeing fabric using hot wax as a resist Heat press: fusing man-made fabrics together or transfer a design to fabric using dyes

Judy Pfaff



Wassily Kandinsky



4. Synonyms

circles spirals helix rings round roundabout loops spheres discs balls orbit turn encircle surround revolve rotate rotor cycle cyclone coil

Klari Reis



Robert Delaunay



6. Klari Reis

- curiosity and desire to explore and document the natural and unnatural with a sense of wonder and joy
- uses the tools and techniques of science in her creative process
- collaborates with local biomedical companies
- works in plastic and epoxy polymer and cutting edge technology
- uses dyes and pigments on aluminium and wooden panels
- pigments the plastic with powders, oils, acrylics and industrial dyes, built up through many layers of the ultra-glossy plastic
- the work is brightly coloured, ever changing and no two pieces are the same

Year 9 **Circles + Rings**

7. Painting

Acrylic paint: a fast-drying paint made of pigment suspended in acrylic polymer emulsion. Mixes with water, but water-resistant when dry Wash: semi translucent layer of colour Underpainting: first layer of paint applied to a canvas or board as a foundation for your painting. Useful for building contrast and tonal values Glaze painting: a thin layer of paint that is very translucent, allowing some of the colour underneath to show through. The glaze subtly transforms the colour of what is beneath





Art - Colour



COLOUR

Colour plays a vitally important role in the world in which we live. Colour can sway thinking, change actions, and cause reactions. It can irritate or soothe your eyes, raise your blood pressure or suppress your appetite. As a powerful form of communication, colour is irreplaceable.

COLOUR WHEEL









is adding grey to a colour

Primary

YELLOW

RED

PA.147

BLUE

Secondary

ORANGE

OR AND

HOLET

VICK ET

GREEN

=

=

=

=

BLUE-WOLET

BLUE-GREEN

VELLOW-GREE

٠



SHADE is adding black to a colour



ADJECTIVES TO DESCRIBE COLOURS

Light Bright Vivid Glowing Vibrant Brilliant Intense Dazzling Subdued Diluted Gloomy Depressing Pale Dull Murky Muted Monotonous Fluorescent 3 Saturated Opaque Transparent



Uses the primary colours: Red, Yellow & Blue. They can not be made by mixing other colours.

SECONDARY



Uses the secondary colours: Orange, Green & Purple. Each secondary colour is made by mixing two primary colours.

TERTIARY



Uses the tertiary colours. They are made by mixing a primary and a secondary colour next to each other on the colour wheel.

COMPLEMENTARY

6



Uses a pair of colours that are opposite each other on the colour wheel. The pairs are: Green/Red; Blue/Orange; Yellow/Purple.

HARMONIOUS



Uses three or four colours (primary, secondary and tertiary) that are next to each other on the colour wheel.

MONOCHROMATIC



Uses Tints, Tones & Shades of one colour. The word MONO means ONE and the word CHROMA means INTENSITY OF COLOUR.

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

5

Art - Drawing



DRAWING The basic craft of drawing is about two things: 1. To control your hand and 2. Learn to see.



1 ELLIPSES: The circle found at the top and the base of a cylindrical object: i.e. bottle, cylinder, etc. Ellipse can also occur when the sides of the bottle change direction, i.e. get narrow or wide.

2 CENTRE LINE: Divides the object vertically in two equal parts. LINE OF SYMMETRY: the line at which the bottle is symmetrical. Mirror image symmetry: exactly matching opposite sides

3 POSITIVE SPACE: (Object in white) The space occupied by the object/s.

NEGATIVE SPACE: (All in black) The rest of the space around or in between the object/s.

4 LINEAR DRAWING

A drawing using line only to: a) outline the shape of the object; b) to add detail: c) using continuous line (without lifting your pencil of the paper from start to finish. d) Minimalist drawing



Tonal drawing

5 FLAT TONE: A solid block of tone, see Tonal Ladder. It has no outlines. Different flat tones next to each other define shapes.

6 SHADING:

When the tone gradually changes from dark to light. It can appear a) smooth or b) rough by using lines called Hatching or Cross Hatching.

SHADING (light from the side): On the outside of the object the tone changes gradually from one side to the other. Light and dark areas swap direction on the inside opening of the object like in this cup.

SHADING (light from the centre): The tone is dark on both sides and smoothly gets light in the middle. It gives a 3D effect and looks very realistic.

7 TEXTURE and MARK-MAKING: Texture is the surface quality of something. Artists use mark-making techniques to represent different textures.

Hatching



Other elements of drawing

9 PERSPECTIVE:

the art of representing three-dimensional objects on a two-dimensional surface



so as to give the right impression of their height, width, depth and position in relation to each other.

10 RANGE OF PENCILS:



11 FOREGROUND: An art term that describes the objects in the scene that are closes to the viewer. It is the part in front of everything else and has the most detail.

MIDDLE GROUND: lies between the foreground and background of a painting. The objects in this area appear smaller. They are usually placed behind the objects in the foreground.

BACKGROUND: is the part of a scene or picture that is farthest from the viewer. It usually has the least detail.

12 COMPOSITION:

Refers to the organisation, arrangement, and combination of objects within the borders of a drawing space. For a great drawing, you want to bring the eyes of the viewer toward your centre of interest within an aesthetically pleasing composition.









FORMAL ELEMENTS

The Formal Elements are: line, shape, form, tone, texture, pattern and colour. They are used



PATTERN is a symbol or shape that is repeated. A design that is created by repeating lines, shapes, tones or colours. The design used to create a pattern is often referred to as a **motif**. Motifs can be simple shapes or complex arrangements. Tessellating any image creates a Repetitive pattern.



LINE 4

is the path left by a moving point, i.e. a pencil or a brush.

A line can take many forms. It can be horizontal, diagonal or curved. Line can be used to show: contours (the shape and form of something); movements, feelings



5 SHAPE is an area enclosed by a line. It could be just an outline or it could be shaded in. When drawing shapes, you must consider the size and position as well as the shape of the area GEOMETRIC SHAPES around it. The space between the shapes is of CARPER called negative space.

6 FORM

is a three dimensional shape (3D), such as a cube, sphere or cylinder. Sculpture and 3D design are about creating forms. In 2D artworks, lines, tones and perspective can be used to create an illusion of form. The three dimensions of form are width, length and depth.

TONE is the lightness or 10 darkness of an object. This could be a shade or how dark or light a colour appears. Tones are created by the way light falls on a 3D object. In every 3D object there are minimum 4 of 3 tones; light, mid-tone and dark. з Tone can be flat or it can vary from 2 dark to light.

8 TEXTURE is the **surface** quality of something, the way something feels or looks like it feels. Actual texture really exists, so you can feel it or touch it.

Visual texture is created using marks to represent actual texture. It gives the illusion of a texture or surface. You can create visual texture by using different lines, shapes, colours or tones.



9

7

5





10000

9 SCALE is the size of one object in

refers to

relation to the other objects in a design

10 PROPORTION

the relationship of the sizes of two or more subjects or elements.



Art - Painting



PAINTING 1. The act of painting, using a brush, palette knife, sponge, or airbrush to apply the paint; 2. The result of the action - the actual picture

1 Watercolour brushes:

Are specially made to allow the artist to control the flow of the colour from the brush onto the paper. A watercolour brush should hold a fine point when wet and spring back into shape after each stroke. It should carry the colour allowing the artist to: a) lay it down on the paper evenly 2) consistency.



CP. (NOT)

a)

ROUGH

2 WATERCOLOUR:

a) Paints that are made of pigments suspended in a water-based solution (binder).

b) The art of painting with watercolours, especially using a technique of producing paler colours by diluting rather than by adding white.



Best watercolour papers are made from cotton fibres. There are three types of w/c paper.

HP- Hot Press. Smooth surface for detailed work CP (NOT) - Cold press. Slightly textured for most types of work Rough - Heavily textured paper enhances the final piece of work.

3 WATERCOLOUR TECHNIQUES:

a) Wash: When watercolour mixture is gradually diluted with water.

b) Blending: When two colours seamlessly merge into one another.

c) Wet-on - Wet: Water is applied onto the paper and then paint is applied onto it.

d) Masking Fluid

It is a rubber type product that prevents the paint from reaching the paper and is peeled off to expose the whitepaper left untouched.

4 ROUND BRUSHES:

Good for sketching, outlining, detailed work, controlled washes, filling in small areas.

FLAT BRUSHES: Good for bold strokes, washes, filling wide spaces, impasto. Edge can be used for

fine lines, straight edges and stripes.

5 ACRYLIC PAINT: Opaque and semi-opaque fast-drying paint made of pigment and acrylic polymer emulsion dilutable with water.

ACRYLIC PAINTING SURFACES: Canvas, paper, wood, or anything which is neither greasy nor too glossy.

ACRYLIC PAINTING BRUSHES: A good selection of round and flat stiff synthetic brushes. Palette knives.

6 ACRYLIC PAINTINGS TECHNIQUES: UNDERPAINTING: A layer of paint applied first to a canvas or board. a) Tonal Grounds Under Painting

This type of painting has the entire canvas covered in a single transparent colour. This layer will create backlighting shadows that will tone the entire painting and provide contrast.

b) A Tonal Under-Painting A layer of paint applied first that acts as a foundation for the painting with some built in contrast and tonal values.

IMPASTO: A technique used in painting, where paint is laid on in very thick layers that the brush or palette-knife strokes are visible. Paint can also be mixed right on the canvas. When dry, impasto provides texture; the paint appears to be coming out of the canvas.

8



7 POSTERPAINT:

A semi-opaque paint with a water-soluble binder, used mainly in schools.



8 OIL PAINTS: is a type of slowdrying paint that consists of pigment suspended in a drying oil, commonly linseed oil. Not used in schools.

9 MIXED MEDIA:

A Technique that uses more than one medium or material. Assemblages and collages are two common examples of art using different media that will make use of different materials including cloth, paper, wood and found objects.

ASSEMBLAGE:



The making of 3D art, often involves using found objects.

MIXED MEDIA COLLAGE:

This is an art form which involves combining different materials with paint to create a whole New artwork.



10 SGRAFFITO TECHNIQUE: Used in painting, pottery, and glass. Consists of putting down a preliminary surface, covering it with another, and then scratching the top layer. The pattern or shape that emerges is of the colour below.









Year 9 Computer Science 2.1

Computational thinking:

The use of computers to solve problems.

Development of algorithms to solve problems.

Uses the 4 steps below to do this.

Decomposition – breaking down a large problem into smaller sub-problems.

Abstraction – representing 'real world' problems in a computer removing unnecessary elements from the problem.

Pattern Recognition – Finds any patterns in the problem/solution.

Algorithmic Thinking - identifying the steps involved in solving a problem.



Flow diagrams visually represent the steps that make an algorithm. A standard set of shapes are used to represent different types of step, such as running a sub-process. The arrows in a flow diagram represent the flow of control through the algorithm.



Merge Sort The list is repeatedly divided into two until the elements are separated individually. Pairs of elements are then compared, placed into order and combined. The process is then repeated until the list is whole again.



Bubble Sort: Each item is compared with the one on its right, and swapped if it is larger At the end of the first pass the largest item bubbles through to the end of the list (Mauve indicates sorted items)

		4	15	3	8	11	2
5	9	4	15	3	8	11	2
5	4	9	15	3	8	11	2
5	4	9	15	3	8	11	2
5	4	9	3	15	8	11	2
5	4	9	3	8	15	11	2
5	4	9	3	8	11	15	2
5	4	9	3	8	11	2	15

Linear Search: This involves searching through a set of data, one item after the other, until the item we are looking for is found. Searching for the number 36.

Binary Search - Summarise the method of a binary search.

A binary search works by repeatedly dividing the number of items by two until you are left with the item that you are searching for. We are searching for the number 21

 Step 1: Put the items into order.

 10
 2
 6
 13
 1
 7
 1
 17
 8
 5

 1
 2
 5
 6
 7
 8
 11
 10
 15
 17

 5
 6
 7
 8
 11
 10
 15
 17

 5
 6
 7
 8
 11
 10
 15
 17

 5
 6
 7
 8
 11
 10
 15
 17

 5
 6
 7
 8
 9
 10
 15
 17

 1
 2
 3
 4
 5
 6
 7
 8
 9
 10

 1
 2
 3
 4
 5
 6
 7
 8
 9
 10

 1
 2
 5
 6
 7
 13
 10
 15
 17

The insertion sort works by looking at each value in turn an inserting the value into its correct place in the list.

Step 1: Compare the first two items. 9 > 2 so 2 moves position.



Step 4: Insert 7 into its correct position. 7 > 5 and 7 < 8 so 7 moves position.

Types of Errors

Syntax errors - Variables not declare correctly or Variable names spelt incorrectly

Logic errors - Conditions that can not be met such as Infinite loops or Missing brackets

Run time errors - Programs that do not complete or where the memory is too

Step 3: Checkl Is your this number less than, equal to or greater than the number you are looking for?

If it is greater than, you can remove all of the numbers to the right. If it is less then, you can remove all of the numbers to the left.

Repeat steps 2 and 3 until you find the number you are looking for.

Low Level Language

Machine code - Not understood by humans, only by computers. The instructions are fetched from RAM, decoded by the CPU and then executed one after the other.

Assembly language – It uses Binary and short acronyms, like commands JMP 1024 (jump to instruction 1024) An assembler translates the code into machine code so the processor can deal with the code

A high level language

uses human words which a CPU does not understand. A computer uses a translator to change the code so it can understand it. There are 2 ways to translate - **Complier** coverts the code into machine code before running it or **Interpreter** which coverts the code one instruction at a time running

Year 9 Computer Science 2.2

Data types – How the data will be stored

Integer – Whole Number - 23 Real - Any number with a decimal – 2.223 Character - 1 single letter - A String - A mix of letters, numbers and symbols -A546TH Boolean - Has 2 states - TRUE or FALSE. 1 or 0

Casting This is the process of **converting data** from one type to another. For example str(age 13) converts the integer to a string. This may be required for a program to process information for a different outcome.

Variables - Are used to store values in a program. Variables can be changed. For example a variable might allows a name or age to be entered to a program. Or change a score when you get something correct.

Example - Name=Input ("What is your name?")

Constants - Are used to store values in a program. It is a part of a program that cannot be changed. For example a constant could be the use of Pi.

Types of sub Programs

A Function – Returns a value to the main program A Procedure – Carries out a task, does not return a value to the main program

A Parameter – A value passed to the main program

	Maths Operators For Pseudocode						
+	Addition	3+3=6					
-	Subtraction	3-3=0					
*	Multiplication	3*3=9					
/	Division	3/3=1e					
Mod	Modulus Division - Returns the remainder after division	17/3=6R2 Remaindr No. Mod 2					
Div	Quotient Division - Returns the quotient or the lowest integer	11/4=2 Complete Div=2					
^	Exponential Powers of	3^3=27					



Iteration – For and While Loops

x = 0

while x != 100:

x = int(input("Please type in a number"))
print("Loop has ended")

for counter in range(3,20,2):
 print(counter)

Sub Program – This is a self contained sequence of instructions within a program. These are also known as subroutines and can be called on for a single specific function within a program. Benefits to the use of subroutines - Reduce the amount of code -Make programs easier to read and test - Give code better structure

Maths Operations

For multi followed	ple math	s operati	ions th	is is th	e ordei	r that n	leeds to	be
Brackets 3^2*12/(3*2)+6-6 Brackets (3*2)=6								
Indices o	f Power	Index	3^2 =	3x3= <mark>9</mark>				
D ivision	Divide	12÷ (6 = <mark>2</mark>					
Multiplic	ation N	1ultiply	9* <mark>2</mark> =	= 18				
Addition Add 18+ 6 = 24								
Subtraction Subtract 24-6 = 18								

Data types

Integer e.g. 23 Real e.g. 23.7 Character e.g. A or 5 String e.g. A546TH Boolean e.g. TRUE or FALSE.

Python -> English	
<pre>print('hello!')</pre>	Prints a value on screen (in this case, hellol)
input('')	Inputs a value into the computer.
<pre>x=input(`')</pre>	Inputs a value and stores it into the variable x.
<pre>x=int(input(`'))</pre>	Inputs a value into x, whilst also making it into an integer.
print(str(x))	Prints the variable x, but converts it into a string first.
if name == "Fred":	Decides whether the variable 'name' ha a value which is equal to 'Fred'.
else:	The other option if the conditions for an if statement are not met (eg. name = 'Bob' when it should be Fred)
elif name == "Tim"	elif (short for else if) is for when the first if condition is not met, but you want to specify another option.
•	# is used to make comments in code – any line which starts with a # will be ignored when the program runs.



Computer Science 2.3



Year 9 Computer Science 2.3

Defensive design: - Programs need to be designed to cope with bad entries made by users. This will will:

- Minimise bugs or issues
- Program works regardless of user actions
- Errors are identified on entry

Contingencies (all possibilities) need to be considered at the planning stage for programs. This should consider possible user inputs and how to manage these.

Authentication

Identifies a user

Normally requires a combination entry (username and password)

Authentication checks against pre-set entries

- Validation is a method of checks an entry to ensure it is valid for the purpose that it is being used. There are some ways that code can be set up to validate inputs
- Length Check Checks the number of characters in an inputs
- **Range Check** Checks to ensure that an input falls between a set range of values
- **Presence Check** Ensures that a field cannot be left blank

Defensive design considerations:

Sub Program – This is a self contained sequence of instructions within a program. These are also known as subroutines and can be called on for a single specific function within a program.

Types of sub Programs

A Function – Returns a value to the main program

A Procedure – Carries out a task, does not return a value to the main program

A Parameter – A value passed to the main program

Indentation – used to highlight the blocks of code. If a block has to be more deeply nested, it is simply indented further to the right.

database=('name': '1234', 'name2': '5678', 'name3': '9012')

- name = input('Enter username: ')
- ask = input('Enter pin: ')

if ask == database[name]:
 print ("Welcome", name)

elat:

print ("Invalid code")

TESTING –

ITERATIVE TESTING - Tests carried out during development. **FINAL TESTING** – Test once a program has been completed.

ALPHA TESTS - final testing carried out by a programmer

BETA TESTS – Final testing carried out by users

Suitable Test Data - There are three methods to test a program.

NORMAL TESTS uses a check with a program that is expected to work.

BOUNDARY TESTS (or extreme tests) will check the program limits, with the highest and lowest numbers in a range that should work.

ERRONEOUS TESTS uses data that is not expected to work to check if the program rejects this information.

Syntax and Logical Errors -

SYNTAX errors - Grammar, spelling and character mistakes in code

LOGIC errors occur when an incorrect operand has been used, like an AND instead of an OR. These errors may allow a code to operate, but work incorrectly

Commenting - Comments are the useful information that developers provide to make the reader understand the source code. They are usually helpful to someone maintaining or enhancing the code when the programmer is not around to answer questions about it.

This is a comment
Print "GeeksforGeeks !" to console
print("GeeksforGeeks")

a, b = 1, 3 # Declaring two integers
sum = a + b # adding two integers
print(sum) # displaying the output

Computer Science 2.4



Year 9 Computer Science 2.4

LOGIC GATES AND TRUTH TABLES

Computational logic has only two outcomes: true or false. This is represented in binary with 1 and 0. **Boolean logic** reduces all values to the these two states. Computer processors contain 1 billion **TRANSISTORS** and these transmit current (ontrue) or don't (off – false).



AND GATES

With "AND" logic there are two inputs and one output.

If both of the inputs are positive then the output will be positive.

OR GATES

With "OR" logic there are two inputs and one output.

If either of the inputs is positive or if both of the inputs are positive then the output will be positive.

With "NOT" logic there is just one input and one output.

It changes the input to the opposite value.



1 1

1 0 1

1 1 0

0

LOGIC GATES use transistors to carry out all calculations and run program instructions in the processor. These are represented by the symbols below. **A TRUTH TABLE** is used to show how a "logic gate" works in an easy to read format.

Truth Tables								
	AND		OR			NOT		
Α	В	A AND B	A	В	A OR B	Α	NOT A	
0	0	0	0	0	0	0	1	
0	1	0	0	1	1	1	0	
1	0	0	1	0	1			
1	1	1	1	1	1			



NOT (a AND b)





Year 9 Computer Science 2.5

Translators: For assembly and high level languages to be understood systems require TRANSLATORS to interpret them.

Compilers: Translate the source code into machine code

Interpreters: Translates code in a line by line process

Assemblers: Translate the mnemonics of the language

An Integrated Development Environment (IDE) is an application software that allows programmers to develop code and test operations with a variety of facilities . An example is Python IDLE



Common IDE Tools

Editor to enable program code to be entered/edited

Error diagnostics / debugging to display information about errors (syntax / run time) / location of errors and suggest solutions

Run-time environment to enable to the program to be run and check for run time errors / test the program

Translator / compiler / interpreter to convert the high level code into machine code / low level code / binary AND to enable to code to be executed / run Breakpoint to stop/pause program execution at a specific point

Watch window to check contents of variables

Syntax completion suggests/corrects code

Keyword highlighting / colour coding keywords / pretty printing colours command words / variables

Best to memorise three for the exam

Python IDLE contains a variety of features that support the development of code including

- Syntax Highlighting coloured illustration of coded elements
- Auto indentation keeping subroutines in proper locations
- Bracket Matching Indicating matching sets of delimiters
- **Auto complete** finding key words from dictionaries to aid with code entry
- Syntax error checking Illustrating the lines within the code that contain errors

			Low Level I	High Level Language		
Computer						
Languages Computer instructions can be written in a variety of different programming languages which need to be translated into machine code for computers to understand them. Languages exist at low and high levels		N L F L k z	Machine Language Processors only understand anguage in binary format 1s and 0s	Assembly Language contains instructions that are directly equivalent to machine language. Mnemonics are used to replace the commands	Java and Python are examples of High level languages and these use terms that are clear like 'print'. Most software programs are written in high level language.	
Language	Code			in the code		
LOAD 3	0011 0011					
STORE 12	0100 1100	ι	Used in: embedded	systems (in tv's,	Used in most	
ADD 3	0110 0011	r	microwave ovens, e	tc.)	software apps	
ADD # 7 0111 0111			Used for: Device dri systems	Portable between devices		
SUB 5	1000 0101	F	Assembly languages	are machine	Used on different	
SUB # 10 1001 1010		S	specific and cannot be transferred to		computing systems	
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D&T - Access FM



Year 9 Design and Technology Knowledge Organiser Access FM and health and safety

We use **ACCESS FM** to help us write a **specification** - a list of requirements for a design - and to help us **analyse and describe** an already existing product.











F















ACCESS FM - Helpsheet



Cost means how much does the product cost to buy? How much does it: Cost to buy? Cost to make? How much do the different materials cost? Is it good value?



Customer means who will buy or use your product? Who will buy your product? Who will use your product? What is their: Age? Gender? What are their: Likes? Dislikes? Needs? Preferences?



Environment means will the product affect the environment? Is the product: Recyclable? Reuseable? Repairable? Sustainable? Environmentally friendly? Bad for the environment? 6R's of Design: Recycle / Reuse / Repair / Rethink / Reduce / Refuse



Size means how big or small is the product? What is the size of the product in millimeters (mm)? Is this the same size as similar products? Is it comfortable to use? Does it fit? Would it be improved if it was bigger or smaller?



Safety means how safe is the product when it is used? Will it be safe for the customer to use? Could they hurt themselves? What's the correct and safest way to use the product? What are the risks?



Function means how does the product work? What is the products job and role? What is it needed for? How well does it work? How could it be improved? Why is it used this way?



Material means what is the product made out of? What materials is the product made from? Why were these materials used? Would a different material be better? How was the product made? What manufacturing techniques were used?



Year 9 Design and Technology Knowledge Organiser Access FM and health and safety

Risk assessment

A widely accepted practice when carrying out a practical activity is to carry out a risk assessment before the work commences. In a risk assessment, all of the hazardous presented by the activity need t be identified, along with the risk that they present. The level of each risk is then considered, and a decision is made whether it is acceptable to continue the activity. If not, then it might be possible to reduce the risk in some way so that the activity can go head more safely.

Risk assessment table (like the one shown below are used to determine if the level of risk is acceptable. This is assessed in two ways:

- How likely it is that an accident will happen (likelihood), and
- How much damage or injury could occur if it does (severity)

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Control of substances hazardous to health (COSHH)

COSHH is the law that requires employers to control substances that are hazardous to health. You can prevent or reduce workers exposure to hazardous substances by:

- finding out what the health hazards are; deciding how to prevent harm to health (risk assessment):
- providing control measures to reduce harm to health;
- making sure they are used ;
- keeping all control measures in good working order;
- providing information, instruction and training for employees and others;
- providing monitoring and health surveillance in appropriate cases;
- planning for emergencies.



Personal protective equipment. (PPE)

Personal Protective Equipment (PPE) is equipment that workers can use or wear to guard against risks in the working environment. For instance, workers use items like helmets, gloves, and hi-vis clothing on a construction site staff, while in a laboratory you will often find technicians using safety goggles, masks, and coveralls

PPE can range from basic protective clothing, like gloves, helmets, and footwear, to specialised gear like fall harnesses or respirators. However, they all have the same thing in common: safeguarding the wearer from injury or other health issues. In any workplace, there are risks that could cause injury or illness to employees. Under UK law, it is the duty of the employer to make sure that all reasonable precautions are taken to remove or reduce this risk to staff, taking the form of preventative or protective measures.



YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

D&T - Energy Sources 1



Year 9 Design and Technology Knowledge Organiser Energy Sources

Energy is needed to convert raw materials into finished products. It may also be needed to operate products as they are being used.

How electricity is generated

The most common type of energy used in manufacturing is electricity. Other sources of energy have to be converted to make electricity. This normally involves using the energy source to turn a turbine and generator – how the turbine is turned will depend upon the energy source. A generator acts like the opposite of an electric motor (see Section 3.2): rather than electricity being used to turn a motor, the turning of the generator creates electricity.

Fossil fuels

Fossil fuels are a non-renewable energy source. This is because they are not easily replaced and will eventually run out. They are formed from the remains of plants and animals that died a very long time ago and are buried underground. The most common examples are coal, oil and gas.

Fossil fuels are burnt in a furnace at a power station, which creates steam. This then turns the turbines. One problem with this type of energy generation is that it releases a lot of carbon emissions into the atmosphere, which contribute to global warming.

Nuclear power

With nuclear power, the heat needed to create steam is produced using a nuclear fission reaction. Nuclear power is a non-renewable energy source as it uses uranium for fuel. It does not produce any greenhouse gases, but it does produce some radioactive waste.

Although nuclear power stations are generally safe, there have been a small number of incidents where highly dangerous radioactive materials have been released into the environment. The most well-known of these is the Chernobyl disaster, which took place in 1986. The effects of this are still being felt in the surrounding areas and are likely to continue to do so for many years to come.

Key words

fossil fuels - fuels formed over a long period of time from the remains of dead plants and animals, e.g. coal, oil and gas.

non-renewable energy source - an energy source that cannot quickly be replaced and will eventually run out.

nuclear power - energy produced through the use of nuclear reactions.



A wind turbine farm





D&T - Energy Sources 2

Year 9 Design and Technology Knowledge Organiser Energy Sources

Sustainable Sources

Wind and hydroelectricity More and more energy is being produced using emerable energy sources. These are sources that will not run out and can be quickly replaced.

One example is wind turbinest, which can be turned using the wind. This products no entron emissions. These turbines must be placed where these is a pood source of wind, such as of see or in hilly anexe. As a result, some people feel that they spoil views of the countryside and coestime.

Another renewable energy source is hydro-power This is alware a large volume of water is showed behind a dam. A small amount is showed to continuously flow out, which tams the turbren.

Solar power

Solar power is different from most energy sources on it does not make use of surfaces. Instead, usile ponets convert energy from the sun-into an electric current. The advantage of this energy source is their it is sneweeble and produces no carbon emissions. The main disadvantage is that it cannot produce power when there is no sunlight.



 Sclar energy panels convert energy from the sun into an electric current.



A hydro-power dam

Tasks you can do



Crude Oil and Natural Gas





Subject Contents

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

CRUDE OIL

D&T - Legislation 1



Year 9 Design and Technology Knowledge Organiser Legislation and marks

Copy right

Copyright provides protection for piece of work. Such as literature, web content, music, film or technical drawings and indicates that they must not be copied without permission. Where copyright applies it will be marked with the copy right symbol.

In the UK , there is no fee to apply a copyright and no register of copyright to which it needs to be added.

Copyright s different from patent, as it only protects how ideas are expressed – not the actual ideas themselves.

<u>Patent</u>

A Patent is a legal document, that gives its owner the right to exclude other people from, making, using , selling or importing something they have invented.

Patents provide the protection for a set number of years—not indefinitely



It is important to note that the patent does not protect a product itself, only the ideas and inventions that have gone into its design or manufacture.

Trademarks

A trademark typically protects a brand or logo that identifies the product or well know business. Many companies have a well-known brand or logo that is instantly recognisable by their customers, making the brand an asset to the company. TM

Trademarks are usually identified by the symbol that follows them:

- If a trademark is registered, the [®] is used
- If a trademark is not registered, the [™] symbol is used.

Registered trademark.

A patent protects an invention and how it works. whereas a registered design can be used to protect the way a product looks.

Where a product instantly recognisable and successful because of its unique appearance, a company may want to prevent other people from copying the way it looks. A registered design can last for 25 years

but must be renewed every 5 years. An example of a famous registered design is the shape of the coca cola bottle.

D&T - Legislation 2

Year 9 Design and Technology Knowledge Organiser Legislation and marks



British standards - kite mark

British standards are created by the British Standards Institute (BSI). They are technical specifications that can be used as guidance when designing or manufacturing new products. Conformity to the standards helps to make products better quality, easier to use more sustainable and more secure and safer.

Companies, designers and manufacturers need to pay close attention to the standards that are applicable to the products they are producing. For example a company that designs and manufactures toys will need to consider flammability and toxicity of material and the risk of choking on small parts.

European conformity (CE)

The CE mark is the symbol for European Conformity. Recognised world wide, it indicates that the product conforms with the health, safety and environmental protection for protects sold in the European Economic Area (EEA)

To demonstrate conformity, the manufacturer may need to have the product checked and tested, o it is critically important that during the development of the design all of the associated directives and regulations are listed in the specification and the requirements incorporated into the design.

Waste Electrical and Electronic Equipment (WEEE)

The Waste Electrical and Electronic Equipment (WEEE) directive is an EU directive covering the collection, recycling and recovery of waste electrical equipment and electronic goods.

Before the WEEE directive, waste electrical and electronic equipment in the Uk was often disposed of and processed alongside other household waste. Since the WEEE directive, although waste electrical equipment can still be taken to designated waste recycling centres, it is then sent specialist recycling and treatment centres, where it can be recycled or disposed of safely.







D&T - Manufacturing 1

Year 9 Design and Technology Knowledge Organiser Manufacturing Processes

Vacuum forming

Vacuum forming is used to shape and form thin sheet thermoplastic polymers.

- A mould is located within a vacuum chamber and a polymer, such as high impact polystyrene, is clamped in the frame above the mould.
- The polymer is heated from above: once it is uniformly pliable, it is lowered onto the mould.
- A vacuum pump is turned on to remove the air between the polymer and the mould
- The polymer is drawn down over the mould and left to cool.
- Once cooled, the polymer will have taken the form of the mould.



Casting

What is metal casting?

Metal casting is the process of making objects by pouring molten metal into an empty shaped space. The metal then cools and hardens into the form given to it by this shaped mould. Casting is often a less expensive way to manufacture a piece compared with machining the part out of a piece of solid metal. There are many metal casting methods to choose from. What type of casting is most efficient depends on the metals used, the size of the run, and the complexity of the casting



Overview of the casting.

There are a number of different methods of casting, each of which are done in a slightly different way. Each have some similarities: which are.

- Metal is heated until it is molten.
- The metal is poured into a mould, through the sprue. It will be filled until metal is visible in the riser.
- The metal is allowed to cool and solidify. Then it is removed from the mould.
- Any finishing wok is then completed on the work piece.



D&T - Manufacturing 2

Year 9 Design and Technology Knowledge Organiser Manufacturing Processes

Soldering

Soldering is a joining process used to join different types of metals together by melting solder. Solder is a metal alloy usually made of tin and lead which is melted using a hot iron. The iron is heated to temperatures above 300 degrees Celsius which then cools to create a strong electrical bond.

What Metals are Used?

Filler metals used in soldering were once lead based (lead solder), however, owing to regulations, lead-based solders are increasingly replaced with lead free solders, which may consist of antimony, bismuth, brass, copper, indium, tin or silver.

Soldering Iron

A soldering iron is a **hand tool used to heat solder**, usually from an electrical supply at high temperatures above the melting point of the metal alloy. This allows for the solder to flow between the work pieces needing to be joined.

This soldering tool is made up of an insulated handle and a heated pointed metal iron tip.



Addition manufacture—3D printing

3D printing or **additive manufacturing** is the construction of a threedimensional object from a CAD model or a digital 3D model. It can be done in a variety of processes in which material is deposited, joined or solidified under computer control, with material being added together (such as plastics, liquids or powder grains being fused), typically layer by layer.

Rapid prototyping, a 3D printing process works by depositing hot filament polymer such as acrylonitrile butadiene styrene (ABS) or the natural Polylactic acid (PLA) polymer.

Some of the more sophisticated rapid prototyping machines have multi coloured polymer can be deposited one after another, so each component within the product can be a different colour.



Dance - Terminology



Year 9 - Knowledge Organiser - Dance



	Term	Definition		
	Timing	moving to the beat of the music and/or your group.		
	Energy	performing actions with the full amount of effort required.		
	Movement memory	remembering all of the movements.		
<u>ה</u>	Accuracy	making the correct shapes with your body.		
Î	Facial expressions showing the mood of the dance through your face.			
	Extensions	fully extending the legs, toes, arms and fingertips		
	Focus	being fully committed to the performance by ignoring distractions		
	Flexibility	being able to perform a wide range of movements with ease.		
	Projection	extending your performance to the back of the venue.		
	Musicality	expressing the dynamics of the music through your body.		

Class terminology

Conditioning - develops the strength and endurance of particular muscles.

Exercises - short phrases of movement that develop a dance technique. Rehearsed right and left side.

Travel - travelling movements such as leaps, rolls and gallops which move the dancer from one side of the room to the other.

Sequence - often considered a mini dance, a sequence will help dancers to develop the dance style and last no longer than a minute.

Dance - is produced with the aim of performing it to an audience. A dance will usually use most or all of the song to perform to.

	Term	Definition	
	Narrative	telling a story by playing a character.	
lls	Characterisation	playing the role of a character.	
ski	Theme	The subject or topic that the dance will explore.	
hy	Levels	the different heights the dancer reaches whilst performing.	
rap	Formations the positions or shape that the dancers stand in.		
og	Directions	the direction of travel or the way that the dancers are facing.	
lore	Transitions	linking one movement to another.	
С С	Dynamics	how the actions are performed.	
	Unison	same movements at the same time.	
	Canon	same movements performed one after another.	



YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

Dance - Movements





	Key movements				
	Name	Description			
	Step ball change	a travelling movement with a gallop feel.			
	Jazz pas de bourree	behind, side, front.			
Jazz pirouette Split leap		a turn on one leg.			
		a jump which aims to replicate the splits in the air.			

e			Key movements
y dano	Contemporary is considered the freest of all dance styles. It uses the feeling of contracting and releasing the body whilst also ex- perimenting with falls, fleer work, turns and travels	Name	Description
rar	Foot positions we will use:	Lunge	moving one leg forward whilst remaining on balance.
npo		Contraction	curving the spine then releasing.
nter		Body circle	circling the body including the head.
ပိ	Parallel 1st 2nd and exaggerated 2nd	Shift	transferring the weight from one leg to another

allee	Street dance has many sub and breaking. These are no that suit the style of the curr	-styles like hip l rmally up-beat ent music trend	hop, popping and locking and energetic movements d.	
בר מט	Foot positions we will u	se:	Š	
	es a		<u> </u>	
			T T	
	Parallel	Parallel 2nd	- 4th	

Rey movements		
Name	Description	
Top rock	shifting the weight from one foot to another in a rock- ing motion.	
Tutting	making intricate shapes with your hands and arms.	
Popping and Locking	popping forces body parts outwards, whilst locking is similar to contacting the body part.	

Kay may an ant

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

Drama







	Shot Type	Description & Effect	Cover & Test Name The Shot
Camera Shots & Angles	Extreme Wide Shot / Extreme Long Shot	Establishes where the scene is set. Provides a lot of information, but not a lot of detail.	
	Wide Shot / Long Shot	Shows all or most of the subject, leaving room in the shot for some background to be included. This shot allows actors room to move around the frame without the camera having to follow the action.	
	Medium / Mid Shot	Shows no more than half of a subject. In the case of a person, for example, the shot would be from the waist up.	
	Close Up	Shows the subject filling most of the shot. Provides a lot of detail, for example, an actor's emotions, but does not provide background information.	
	Extreme Close Up	Shows a small part of the subject. In the case of a person, for example, the shot would be of just an eye or of a smile. Provides a lot of detail.	
	High Angle	Makes the subject look small and powerless. The camera is above eye level.	
	Low Angle	Makes the subject look large and powerful. The camera is below eye level.	
	Over the Shoulder	Frames the shot with another person. Makes the audience feel as if they are watching the action.	
	Point of View POV	Shows what a character would see. Draws the audience into the action.	
	Panning vs Tracking Shot	Panning is where the camera stays in one place but pivots to follow the action. Tracking is where the camera moves alongside the action.	



English



PUNCTUATION

Punctuation adds structure, order and clarity to sentences. It can also be used for creative effect.

Commas are used to separate clauses in a sentence. This essentially means that they neatly divide up the different meanings and ideas in sentences. They can also be used to separate items in a list. Without commas, writing becomes a continuous flow of information that quickly becomes meaningless.



Apostrophes are used for two reasons: to show ownership, e.g. *Josie's friend Selma*, or to indicate where letters have been removed in contractions, e.g. *didn't*, *don't*, *can't*.

Colons are used before an explanation, or when you are about to add further information to a point. *In this way, they work a bit like the word 'because'.* Colons can also be used to introduce a list.

Semicolons are used to divide two closely related sentences, in place of a full stop or coordinating conjunction.

Hyphens are used to join two words together, such as when forming compound adjectives, e.g. the ink-black sky

Dashes look similar to hyphens, but they have a different function: they are often used creatively to create a feeling of interruption or anticipation in a text; they can also be used to join clauses, a bit like a colon.

CONJUNCTIONS

Conjunctions are words that join clauses in a sentence. There are two kinds of conjunction: **coordinating** and **subordinating**.

Coordinating conjunctions are used to join two main clauses together to create a **compound sentence**. There are only seven coordinating conjunctions, which you can remember by the acronym FANBOYS: *For, And, Nor, But, Or, Yet, So.*

Subordinating conjunctions are used to join a main clause to a subordinate clause, creating a **complex sentence**. There are lots of subordinating conjunctions; examples include *because*, *although*, *whereas*, *however*, *until*, *while*, *as*, *after*, *since*, *when*.

English Department **YEAR G** TENSE

In grammar, **tense** is the system for indicating the timeframe for the events you are writing about. The word 'tense' comes from the Latin word 'tempus', which means 'time'.

There 12 tenses in English, and they fall into three groups: **present tenses**, **past tenses**, and **future tenses**. The tense of a piece of writing is indicated by **verb forms**; which means that, to change the tense, you need to change the verb forms in some way. When writing, you should keep your tense consistent: shifting randomly between tenses is a grammatical error and can quickly become confusing for readers.

Here are the twelve tenses. Notice how the verb forms change for each tense:

PRESENT TENSES

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term

er

umm

S

Present simple tense: Josie plays netball

Present continuous tense: Josie is playing netball

Present perfect tense: Josie <u>has played</u> netball

Present perfect continuous tense: Josie has been playing netball

PAST TENSES

Past simple tense: Josie played netball

Past continuous tense: Josie was playing netball

Past perfect tense: Josie had played netball

Past perfect continuous tense: Josie had been playing netball

FUTURE TENSES

Future simple tense: Josie will play netball

Future continuous tense: Josie will be playing netball

Future perfect tense: Josie will have played netball

Future perfect continuous tense: Josie will have been playing netball

PARTS OF SPEECH

There are several different types of word in the English language. The different word types are known as **parts of speech**.

NOUN – An object, thing, person or place

E.g. tree, happiness, school, Josie, Hampshire, England

 $\mathsf{ADJECTIVE}-\mathsf{A} \text{ word that describes a noun}$

E.g. tall, incredible, inspirational, pleasant, large, beautiful

VERB – A word that describes an action

E.g. grow, uplift, teach, sulk, travel, visit, run, smile, laugh

ADVERB – A word that gives more information on how an action occurs, often with the suffix -ly

E.g. vigorously, wonderfully, skilfully, sullenly, slowly, joyfully

PRONOUN – A word that represents a noun in a sentence

E.g. it, she, he, they, them, us, me, I, you, we, this, that

POSSESSIVE PRONOUN – A special type of pronoun that denotes ownership or belonging

E.g. my, your, his, her, their, our

PREPOSITION – A word that signals the relationship between two things in a sentence, normally to do with time and location

E.g. on, under, above, beside, after, before, with, inside

CONJUNCTION – A word that joins clauses in a sentence

E.g. for, and, nor, but, or, yet, so, because, although, therefore

DETERMINER – A word/phrase that goes in front of a noun to help clarify what the noun refers to

E.g. this, that, some, many, all, each, every, another, one, two

DEFINITE ARTICLE – The word 'the' (a type of determiner)

INDEFINITE ARTICLE – The word 'a/an' (a type of determiner)

English - Morphology



PREFIXES

These are morphemes added to the **beginnings** of words in order to alter the meaning in some way.

Prefix	Meaning
un-	opposite of
de-	away
dis-	apart
pre-	before
con-	with
anti-	against
inter-	between
intro-	inwards
ex/e-	out of
pro-	forwards
sub-	below
re-	back/again
trans-	across
geo-	relating to Earth
bio-	relating to life
tele-	far off/distant

IMPORTANT TERMS I

MORPHEME – A 'chunk' of a word that carries meaning.

 $\ensuremath{\mathsf{MORPHOLOGY}}$ – The study of how words are formed from smaller parts.

ETYMOLOGY – The study of where words come from and how they evolve over time.

LATIN – An extinct language, spoken by the Romans, from which we get many of our morphemes.

 \mbox{GREEK} – Another extinct language, older than Latin. We tend to see Greek morphemes in technical or scientific words.

BOUND MORPHEME – A morpheme that cannot stand as a word on its own: it must be used in combination with another morpheme in order to form a word. Prefixes and suffixes are bound morphemes, as are most of the roots in the box to the right.

FREE MORPHEME – A morpheme that can stand as a word by itself, such as 'book'. While most of our bound morphemes come from Latin or Greek, many of our free morphemes can be traced to other ancient languages.



ROOT MORPHEMES

English Department

Root morphemes are 'chunks' of words that carry a certain 'flavour' of meaning. These roots appear in many different words, and they always signal the same meaning. If you can recognize the root in a word that you don't know, this will help you work out what the word means.

Root	Meaning	Origin
spect	look/see	Latin
rupt	break	Latin
port	carry	Latin
grad/gress	step	Latin
capt/cept	take	Latin
flec/flex	bend	Latin
fact	make	Latin
vert/vers	turn	Latin
spire	breathe	Latin
cede/ceed	go	Latin
struct	build	Latin
mis/mit	send	Latin
tract	pull	Latin
junct	join	Latin
ject	throw	Latin
dict	speak	Latin
fract	shatter	Latin
duc	lead	Latin
graph	write/draw	Greek
photo	light	Greek
phon	sound	Greek
chron	time	Greek
morph	form	Greek

ETYMOLOGY BASICS

- Modern English evolved from Anglo-Saxon (Old English);
- Anglo-Saxon evolved into Middle English, which evolved into Modern English;
- Many of our words come from other languages, such as Latin, French, Old Norse, and Greek;
- With many of our synonyms, the two words that form the pair come from different languages these are called *dual variations*.

IMPORTANT TERMS 2

SUFFIX – A morpheme added to the end of a word to alter its meaning in some way. Suffixes that form nouns are called *nominal suffixes*, suffixes that form verbs are called *verbal suffixes*, suffixes that form adjectives are called *adjectival suffixes*, and suffixes that form adverbs are called *adverbial suffixes*.

 $\label{eq:angle_angle_based} \begin{array}{l} \text{ANGLO-SAXON} - \text{The language also known as Old} \\ \text{English, spoken by the Germanic peoples who settled} \\ \text{in England in the 5}^{th} \text{ century.} \end{array}$

 \bigcirc

derivational morphemes in English.

French - Core Language



VERB INFINITIVES	PRESENT TENSE VERBS WITH "JE"	PAST TENSE VERBS WITH "JE"
1-ETRE = to be6. REGARDER = to watch2- AVOIR = to have7. ECOUTER = to listen3- FAIRE = to do8. AIMER = to like4- ALLER = to go9. MANGER = to eat5- JOUER = to play10. BOIRE = to drink	1- je suis = I am6. Je regarde = I watch2- j'ai = I have7. J'écoute = I listen3- Je fais = I do8. J'aime = I like4- je vais = I go9. Je mange = I eat5- je joue = I play10. Je bois = I drink	1- j'étais = I was6. j'ai regardé = I watched2- j'avais = I had7. j'ai écouté = I listened3- j'ai fait = I did8. j'ai aimé = I liked4- je suis allé(e) = I went9. j'ai mangé = I ate5- j'ai joué = I played10. j'ai bu = I drank
FUTURE TENSE VERBS WITH "IF"	Erench v9	TIME MARKERS
1- je vais être = I will be 2- je vais avoir = I will have 3- je vais faire = I will do 4- je vais aller = I will go6. je vais regarder = I will watch 7. je vais écouter = I will listen 8. je vais aimer = I will like 9. je vais manger = I will eat 10. je vais boire = I will drink	Core Language	PAST2- maintenant = now1- hier = yesterday2- maintenant = now2- l'année dernière = last year3- quelquefois =3- la semaine dernière = last week4- tous les jours = everydayFUTURE5- une fois par semaine =1- demain = tomorrow6- toujours = always2- l'année prochaine = next year7- souvent = often3- la semaine prochaine = next year8- soir = evening
OTHER VERY IMPORTANT PHRASES		9- matin = morning 10 – d'habitude = usually
 2- je veux +inf = I want 2- je veux +inf = I want 3- je voudrais / j'aimerais 12. neplus = not anymore = I would like 13- ne jamais = never 4- on peut = we can 5- on doit / il faut = you have to 6- depuis = for / since 7- il y a = there is 8. qui = who 9. où = where 10. dans = in	CONNECTIVES AND INTENSIFIERS1- d'abord = firstly2- puis / ensuite = then3- enfin = finally4- et = and / ou = or5- mais = but6- cependant = however7- si = if8- quand = when	OPINIONS 1- à mon avis / selon moi = in my opinion 2- je pense que / je trouve que = I think that 3- c'est = it is 4- c'était = it was 5- ce sera = it will be 6- parce-que / car= because Descurption arrant / drôle = fun ennuyeux / barbant = boring pénible = annoying nul / horrible = rubbish

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Les magasins et les fêtes Shops and Festivals

La nourriture et les boissons du beurre/du fromage du lait/du pain du poisson/du poulet du yaourt de la confiture de la glace de la viande de l'eau (f) des bananes/des fraises des œufs/des pêches des poires/des pommes des pommes de terre du jambon/du pâté du saucisson des baguettes des biftecks des saucisses des salades composées une salade de riz du concombre une laitue des tomates/des oignons des poivrons des champignons des abricots des framboises

du raisin

Food and drink butter/cheese milk/bread fish/chicken yoghurt iam ice cream meat water bananas/strawberries eggs/peaches pears/apples potatoes ham/pâté salami baguettes steaks sausages mixed salads a rice salad cucumber a lettuce tomatoes/onions peppers mushrooms apricots raspberries grapes

Les repas

Qu'est-ce que tu prends pour le petit-déjeuner? Qu'est-ce que tu manges à midi? Qu'est-ce que tu manges comme casse-croûte? Qu'est-ce que tu manges le soir? Qu'est-ce que tu bois? Pour le petit-déjeuner, ... À midi, ... Comme casse-croûte, ... Le soir, ... Je prends/je mange ... Je bois du jus d'orange.

What do you have for break
What do you eat at lunchtin
What do you have as a snac
What do you eat in the even
What do you drink?
For breakfast
At lunchtime
As a snack
In the evening
For dessert
I have/i eat
I drink orange juice.

Meals

Les quantités	Quantities
un kilo de	a kilo of
deux cent cinquante grammes de	250 grams of
un litre de	a litre of
un paquet de	a packet of
un pot de	a jar/pot of
une boite de	a tin/can of
une bouteille de	a bottle of
quatre tranches de	four slices of

march (As support arch) march to prove what	
e marche/le supermarche morket/supermorket	
a boucherie butcher's	
a boulangerie bakery/baker's	
a charcuterie pork butcher's/delica	tesse
a pâtisserie cake shop/pastry sho	p
épicerie (f) greengrocer's	



ve for breakfast? Je porte ... un blouson/un un costume un imperméab un jean (mouk un manteau/u un polo/un pu un sec à main/ un sweat à cap un tee-shirt une casquette une chemise/ une mini-jupe

en

ray

one	1 WE
in blouson/un chapeau	đ
in costume	a
in imperméable	0
in jean (moulant)	6
in manteau/un pantalon	a
in polo/un pull	đ
in sac à main/un short	d
in sweat à capuche	0
in tee-shirt	d
ine casquette	d
ine ceinture	đ
une chemise/une écharpe	6
une mini-jupe/une montre	6
une robe/une veste	6
des baskets (de marque)	(
des boucles d'oreille	
des bottes	1
des chaussettes	5
des chaussures	5
des gants	1
des lunettes de soleil	5
laine/en cuir	WD
ré(e)(s)	stri

Clothes ear/am wearing jacket/a hat suit raincoat a pair of) (skinny) jeans coat/(a pair of) trousers polo shirt/a jumper handbag/(a pair of) shorts hoody T-shirt cap belt a shirt/a scarf a mini-skirt/a watch a dress/a jacket (designer) trainers earrings boots socks shoes gloves sunglasses allen/leather iped

Au magasin de vêtements	In the clothes shop
la taille	size
la pointure	shoe size
les cabines d'essayage	changing rooms
une taille moyenne	medium size
Il y a un trou.	There's a hole (in it).
Il y a une tache.	There's a stain (on it).
II/Elle est/IIs/Elles sont	It is/They are
trop petit(e)(s)	too small
Je voudrais	I would like
échanger (la jupe/le pantalon,	to exchange (the skirt/trousers,
etc.)	etc.)
un remboursement	a refund

French - Les Magasins et les Fetes 2

HWYCS

Les fêtes Festivals Noël Christmas la veille de Noël Christmas Eve Pågues Easter le 6 janvier/la fête des Rois Epiphany le premier avril April Fool's Day Candlemas la Chandeleur le Nouvel An New Year la Saint-Sylvestre New Year's Eve la Saint-Valentin Valentine's Day la fête des Mères Mother's Day Bastille Day, 14 July le 14 juillet/la fête nationale francaise on boit du champagne we drink champagne we decorate the Christmas tree on décore le sapin de Noël on s'offre des cadeaux we give each other presents on ouvre les cadeaux we open the presents on chante des chants traditionnels we sing traditional songs on allume des bougies we light candles we look for eggs in the garden on cherche des œufs dans le jardin We prepare/eat ... On prépare/mange ... de la dinde rôtie roast turkey des légumes vegetables une bûche de Noël au chocolat a chocolate Yule log des crêpes crépes une galette des Rois tart eaten for Epiphany birthday l'anniversaire (m) wedding/marriage le mariage la fête party C'était mon anniversaire. It was my birthday. J'ai recu beaucoup de cadeaux. I received lots of presents.

Geography - Population



Year 9 Geography Knowledge Organiser Term 5 & 6: Population

Location and distribution	Russia - Facts	Russia – Physical Geography	Russia – The People
There are 7.8 billion people in the world now. We began spreading around Earth about 60 000 years ago. Below is a map of where people live now. The darker the colour, more people live there.	 Size: Vast 17.1 million square km, about 70 times bigger than the UK. It shares a border with 14 countries! Time zones: Russia is so wide that it has 11 time zones. Population: 146 million people – only 2.3 times more than the UK. Empty in places: Huge areas of Russia are empty. You can't reach them by road or rail. Arctic in places. The Arctic circle runs across it. Landscapes: Frozen tundra, forests, grassy plains, sunny beaches, mountains, volcanoes, and rivers. Natural wealth: Russia is rich in natural resources; oil, gas, coal, timber, metals, diamonds. Billionaires: Quite a few in Moscow but Russia also has many poor people, 20% were living below the poverty line in 2012. A rich history: Russia was once a great empire. The emperors were call Tsars. 	 ¼ of Russia's land lies west of the Ural Mountains, in Europe. This area is where most Russians (77%) and where the largest cites are. Overall, the climate is milder than Siberia. Russia's main biomes include: Tundra: snow/ice in winter, top layer thaws in summer and small shrubs and low plants grow Taiga: coniferous forest (larch, spruce and pine) Steppe: grassland with few trees and fertile soil Temperate Forest: mixture of deciduous and coniferous trees Mountain forest/mountain steppe: Higher up, it gets cold, the soil gets thinner and no trees grow above the tree line 	 The Russian Empire took over people with different languages, cultures, and religions. Today, Russia has over 160 different ethnic groups. The Russian ethnic group is the biggest – about 81% of the population say they are Russian, Tatars (3.9%), Ukrainians (1.4%) and Bakshirs (1.2%) 74% of the population is urban. The Russian language uses the Cyrillic script. The Sakha Republic is in Siberia and it's capital city is Yakutsk – the world's coldest city! It produces much of Russia's natural resources.
Population Pyramids	Speak Like a Geographer	Fieldwork	Skills
 Shows the population of a country by it's ages and gender This diagram is made up by putting two bar graphs (one for male, one for female) side by side. From this you can read off what percentage of a population is of a certain gender and age range. 	Population, Population Pyramid, Ethnicity, Birth Rate, Death Rate, Natural Increase, Natural Decrease, Population Structure, Overpopulation, Megacity, Migration, Rural, Urban, Immigration, Emigration, Sustainability, Ageing Population, Youthful Population, Life Expectancy, Gender, Young Dependents, Old Dependents, Economy, Economically Active, Culture, Diversity	Evaluation Evaluation Conclusions Data analysis	An line graph is often used to show a trend over time. Advantages: It's better for seeing the rate clearly. Simple to read and understand. Disadvantages: It's harder to compare. It can be difficult to make out exact values for data.

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

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H.S.C.- Growth & Development



Health and Social Care Knowledge Organiser- Year 9

Growth and development across life stages		<u>Care Values</u>	
Lifestages 1. Infancy (0 - 2 years) 2. Early childhood (3 - 8 years) 3. Adolescence (9 - 18 years) 4. Early adulthood (19 - 45 years) 5. Middle adulthood (46 - 65 years) 6. Later adulthood (65+ years) 6. Later adulthood (65+ years)	 <u>Holistic Development</u> Physical development - Physical growth and physiological change Intellectual development - Developing thinking and language skill and common activities that promote learning and development Emotional development - Developing feelings about self and other Social development - Forming relationships 	 Empowering and promoting independence by involving individuals, where possible, in making choices Respect for the individual by respecting service users' need, beliefs and identity Maintaining confidentiality Preserving the dignity of individuals to help them maintain privacy and self-respect Effective communication that displays empathy and warmth Safeguarding and duty of care Promoting anti- discriminatory practice by being aware of types of unfair discrimination and avoiding discriminatory behaviour 	
<u>B1 Different types of life event</u>		Physical and lifestyle factors that can have positive or negative effects on health and wellbeing:	
1. Physical events a) Accident/ injury b) Ill health 2. Relationship changes a) Entering a relationship b) Marriage c) Divorce d) Parenthood e) Bereavement	 <u>3. Life circumstances</u> a) Moving house, school or job b) Exclusion from education c) Redundancy d) Imprisonment e) Retirement 	 a. Genetic inheritance, including inherited conditions and predisposition to other conditions b. Ill health (acute and chronic) c. Diet (balance, quality and amount) d. Amount of exercise e. Substance user, including alcohol, nicotine, illegal drugs and misuse of prescribed drugs f. Personal hygiene 	

History - The Holocaust



The Holocaust: Was the Holocaust inevitable?			
 1. Ordinary things and the story of Auschwitz Auschwitz Birkenau: The largest camp system across occupied Europe, with a number of functions. Auschwitz I: Main function was a concentration camp where inmates were forced to work, face experiments or be gassed. Auschwitz Birkenau: Main function was a death camp where humans were murdered upon arrival Auschwitz III: Inmates were forced into slave labour working in factories producing materials needed for the war effort. 		2. How have Jewish people been treated throughout History?	Anti-Semitism Concentration camp Genocide Holocaust Shoah Extermination Auschwitz Zyklon B Incinerator Minority group Ghetto
3. Battalion 101: What made them shoot?	4. Survivors stories: Did victims just admit defeat?	5. Hitler's willing executioners: Is Daniel Goldhagen right?	Indoctrination Synagogue <u>Tier 2</u> Significance Interpretation Inevitable Unique
Einsatzgruppen were Schutzstaffel (SS) paramilitary death squads of Nazi Germany that were responsible for mass killings, primarily by shooting. Sometimes the people responsible for the shooting were not SS and were Police officers or soldiers.		6. Was the Holocaust inevitable?1924: Hitler writes Mein Kampf whilst serving time in 1933: A boycott of Jewish shops and businesses is or 1934: Jewish newspapers are banned from being sol 1935: The Nuremberg Laws ban marriage between O 1936: Some minority groups begin to be sent to conc 1938: Jewish children can no longer attend school; Je treating German patients. Kristallnacht takes place. 1939: Jewish citizens are taken to concentration cam 1941: Einsatzgruppen are sent to Russia to murder Je 1942: The Wannsee Conference takes place, where t 1945: By the end of WW2 6 million people from min	n Landsberg Prison dered d on the streets Germans and Jews centration camps ewish Dr's banned from aps as WW2 begins ewish citizens the Final Solution is agreed. ority groups were dead

History - The Cold War



The Cold War: Who was to blame?				
1. Where was the Cold War?The Cold War: A period of tension between 1945 and 1991 where the world was divided between the USA and its allies and the USSR and its allies. Eastern Europe: Germany, Hungary, Czechoslovakia were all hotspots of the Cold War.Afghanistan: The USSR invades Afghanistan in 1979 Cuba : This small Caribbean island becomes a hotspot during the Cuban Missile Crisis in 1962South East Asia: South Korea and Vietnam also see ideological conflict	2. How are Cold War themes shown in films?CapitalismSuperpower Rivalry: One aspect of the Cold War was the competition between the main superpowers, the fight to be first.Image: CommunismSpying: The fear of espionage was present on both sides of the ideological divide.Image: CommunismNuclear destruction: The threat of nuclear warfare was an ever present danger which worsened at times of crisis.Spread of Communism: There was a genuine fear of communism and its potential to spread across the globe.Blockade AirliftCommunism outside Russia: Communism had spread in Eastern EuropeUltimatum Sputnik Refugee			
 3. Yalta: How would you have coped? Grand Alliance: Stalin, Churchill and Roosevelt Yalta Feb 1945: What to do about Germany. Germany four zones of occupation Berlin four zones Free elections in Poland Stalin sphere of influence 	Coccupation Satellite State Occupation Satellite State Tier 2 Inevitable Analysis Interpretation Evidence Occupation Satellite State			
 5. Was Cuba the closest we have got to Nuclear War? 1945: USA drops atomic bombs on Hiroshima and Nagasaki 1950: US forces invade Korea; USA urges use of nuclear weapons 1961: USSR detonates its largest ever H Bomb 1962: USA spy planes discover launch sites being built on the island of Cub 1963: USA and USSR agree to a ban on nuclear tests 1965: USA sends troops to Vietnam 	6. Who was to blame for the Cold War? 1945: USA tests and drops atomic bomb on Hiroshima 1949: USSR detonate their first atomic bomb 1952: USA test Hydrogen bomb 1954: USA Massive Retaliation, fuelled the idea of M.A.D 1957: First ICBM launched by USSR 1957: Sputnik put into orbit			

1965: USA sends troops to Vietnam
1972: SALT 1 – both sides agree to reduce nuclear weapons
1979: There were 78 false alarms in which US missiles were almost launched
1981: Period of the Second Cold War, both sides increase weapons

Subject Contents

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

1959: USA develops ICBM technology

1961: USSR achieves first human spaceflight

1969: USA successfully send astro to the moon

Hospitality & Catering - LO1.1

4 star Hotel

3 different themed restaurants

The hospitality and catering industry includes hotels, guest houses, bed and breakfasts (B&Bs), inns and pubs, restaurants, cafes and takeaways, contract catering (such as weddings), catering in leisure attractions (such as museums) and motorway service areas. It includes aeroplane meals and snacks on trains. It also includes food served in hospitals, prisons, schools and the armed services.



LO1 Understand the environment in which hospitality and catering providers operate

Meals on wheels

Social meal service provided by

Marriott Niagara



Bed & breakfasts, Guesthouses,

Farmhouses

Lower standard than

hotels, food is usually

buffet style breakfast.

Corporate or independent

Can vary from

coffee shops.

Take aways

independent "greasy

spoon, Tea rooms or

Serve snacks and full

Restaurants

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

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Subject Contents

at the bar

Hospitality & Catering - LO1.2



YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

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Hospitality & Catering - LO1.3

Factors affecting success



Legislation that protects workers

- Disabled Discrimination Act 1995
- Equal Pay Regulations 1970
- Health and Safety At Work 1974
- National minimum wage

Benefits for employer

Reliable

provided

Permanent staff

Staff have a good

knowledge of services

Can be employed at

day such as lunch or

Can be employed for

functions or busy

times of the year

husier times of the

dinner service

Type of staff

Full-time

36 hours

28 days

holiday

Part-time

28 days

holiday

Casual

4-16 hours

plus

Working Times Regulations 1998

Benefits for

employees

Regular income

Permanent contract

with holiday benefits.

Will receive sick pay

Can be more cost

effective with less

Can choose when

they want to work.

wages needed

Regular hours of

Job security

work

Part-time workers Regulations 2000

Disadvantages for

Bound by contract

Has to pay sick pay.

maternity leave and

Expensive to employ

breaks unlike part time staff

Will need to pay for

training of more staff

rather then small

amount of full time

Can be unreliable

Don't know the

been trained

Unfamiliar with services provided

Have to pay agency

Casual staff haven't

Require lunch

employees

Loss fexibility

shifts

work.

No sick pay

the week before

employer

Janning

staff

fees

IOLTIMES

holidays.

Food costs are large percentage of costs for most hospitality businesses. When planning menus chefs must calculate how much dishes will cost per portion to be able to justify keeping it on the menu. Expensive dishes that are not ordered often may lead to wasted ingredients that are unused, which result in less profit. Chef's must design dishes that generate a profit to stay operational.



and flowers for reception



- Keeps the food costs down
- Keep losses in food preparation and serving to a minimum ٠
- Offer a consistent portion to customers .
- Minimise waste eg leftovers
- To make a profit which is constant

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

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Subject Contents

Lower

food/product
Hospitality & Catering - LO2.1

0

荁

100

Kitchen workflow

Workflow in the kitchen should follow a logical process by using different areas so that the clean stages in food production never come into contact with the "dirty" stages

- Delivery 2. Storage
- Food preparation
- Cooking
- Holding
- Food service area
- 7. Wash up
- Waste disposal

Workflow



Organising the kitchen into separate areas for separate jobs is the heart of hygienic kitchen design. The e layout will depend upon the size of the kitchen as well as on the type of meals it prepares.



LO2 Understand how hospitality and catering provisions operate

Goods vehicles should have adequate access to premises, providing direct deliveries to catering areas. This limits the length of time chilled foods may be in the danger zone. Have adequate space to check orders before they enter

the catering area. Check temperature of van and visually examine goods.

Storage

Storage should be near to the delivery area to limit delivery staff entering the catering area. This also reduces the need to move heavy items of stock that may cause injury to staff. Make sure adequate room is available for stock.

Food Service Area

In an à la carte restaurant adequate space needs to be considered to allow plating up.

ste Disposal

Food Service Area In a buffet of canteen system, multiple food collection points can limit. queuing. Large service areas may need stock replenished frequently, such as all you can eat buffets, therefore the food service area should be located near the kitchen area

Importance of documentation

Why must they be completed?

- Maintaining organisational procedures Safety of staff and customers
 - Legal requirements
 - Complying with food safety legislation
- 5
- Ensuring accurate payment of bills Ensuring profitability of kitchen
- Chef's uniform
- Chef's jacket
- Chef's pants
- Hat
- Neckerchief
- Apron
- Hand towel
- Slip-resistant shoes



YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

Protective clothing as part of a uniform must be paid for by the employer.





An integral part of the kitchen. If the dish washing area does not function, neither does the kitchen. Ample space should be given to both the size of dish washing area needed for The sumber of dishes, pols, pars etc. are used one night as well as adequate space to shore

d sort washing up. As hot water produces ram, adequate ventilation is required.

Dirty plates and wanta food needs to be kept. separate from food prop and storage areas to prevent cress contamination, ideally a separate refuse bay should be made available well away from the sitchen entrance (so customers do not see this side of the businessi! Adequate changing rooms 'facilities should also be provided for stat to change at the start and end of shifts and also easily accessible staff toilets nearby

Documentation and Administration

od Preo

Cooking

Separate hand wash, pot wash and food

wash areas/sinks need to be provided as

premises are small, systems should be in

lace to ensure utensils are kept separate.

the menu being produced and the ability of the

water baths, programmable Rational ovens and

owever, if they are not necessary they are a

avout should be safe and manageable to work

Work surfaces

cleaning

Floor

Vibilis

ound to prevent accidents.

staff using it. State-of-the-art equipment such as

omputerised deep-fat fryers would be desirable,

vaste of money. Host importantly, the equipment

Hygienic kitchen design

Must be strong, hard wearing and easily

cleaned. Stainless steel with wheels that

can be moved out of the way while

Hard wearing, easy to clean , non

food particles from accumulating

smooth, can be tiled or lined with

Coving with the walls prevents dirt and

tainless steel as splashback light colou

absorbent and non slip

show dirt easily

well as separate areas for potential

allergen containing food prep. Where

Types of Kitchen Documents

- Temperature charts fridge, freezer, display, point of sale. Taken at least twice per day.
- Time sheets logging staff working hours
- Complying with accounting and taxation practices * Accident report forms used to report any accidents and near misses
 - Food safety information blast chill records, food related incidents and cleaning rotas
 - Equipment fault reports What was the issue and how was it dealt with,
 - Stock usage reports- order books, stock control sheets, requisition books, invoice, delivery notes

Documentation and Administration

Complete kitchen documents:

- They must be legible (readable)
- At correct interval (daily, hourly)
- Completed accurately
- They must be signed and date.

Where do you get kitchen documentation from?:

- Purchased from stationers
- Designed in-house

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Central purchasing



food. In FIFO, the food that has been in storage longest ("first in") should be the next food used ("first out"). This method elps restaurants and homes keep their food storage organized and use food before it goes bad. First In, First Out is an effective system that should be standard operating procedure for every food service establishment

First In, First Out (FIFO) is a system for storing and rotating.

A 900mm contidor should be allowed for around the front of cooking equipment, ideally \$200mm. You

may be limited by the energy supply available, gas may not be permissible in the building or the incoming electrical supply may be limited. Large scate equipment, whilst can be energy efficient and have energy saving features such as thermostats and auto switch-off, often requires a targe electrical supply to run in the first place.





The food holding area should be near the foo service area in order to keep the food at the right temperature (above 63'c). Some kitchen may require separate refrigerator areas to keep desserts chilled and away from raw foods



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Subject Contents

Ventilation Effective ventilation system to remove the heat, steam and condensation from the kitchen. Bacterial growth in moist conditions Sinks For washing food and utensils. Hot and cold water, stainless sinks are the best Waste disposal

Waste disposal unit or separate waste bin with a lid that can be foot opened

Hygienic kitchen design

- Effective work flow systems, both in the <u>kitchen</u> and <u>frant of house staffing</u>, will lead to: Good communication between section
- Hore efficient working (time/'about saving)
- ingroved quality of the finished product Reduce the risk of accidents
- Waintain high standards of hygiene and food safety

All of the above will lead to better customer service and therefore satisfied customers.

- When planning a kitchen you must consider The type of customers you wish to attract
- The type of menu (à la carte, table d'hôte, seasonal, ethiwic, children's, rotating ...)
- The type of service (self service, plated, buffet, fast food, carteen ...)
- The kitchen brigade structure and number of staff required to make your menu Compliance with legislatio

Stock control

Staple foods and supplies that are canned, bottled, dried or frozen These have a longer shelf life and so do not

need to be purchased as frequently. Larger amounts can be bought to get cheaper prices and can be stored.

- Condiments. Canned vegetables
- Frozen foods including meat, fish and
- closerts Sauces
- Flour, sugar, fat.oil
- FIRST IN FIRST OUT stock rotation

Only buy enough to last a few days

FIRST IN FIRST OUT- stock rotation

Perishable food and products that do not stay fresh for very long

Fresh fruit, vegetables

because they will not last

- Dairy products
- Meat and fish

STAPLES

Hospitality & Catering - LO2.2

Large Powered Equipment

For cooking large joints and

whole animals, such as

chickens.

Specialist Hand Equipment

Identify the name and use of each item.

Food Service Equipment

Food service equipment is equipment used to serve food in the catering industry

Service equipment can be anything which is used by customers or to serve food to the customers.

Hand Held Equipment

Hand equipment is non-powered equipment which is used to serve or consume food and drink.

Tableware:

Equipment usually used to 'set' a table Includes crockery, glasses, cutlery etc

Serving equipment:

Equipment for serving food. This includes utensils for placing food onto tableware such as tongs and ladies. It also includes items such as wine coolers, champagne buckets and bottle openers.

Care, Use and Maintenance of Hand Equipment

- 1. Equipment used by customers must be cleaned at least once a day.
- 2. Equipment must be cleaned according to the manufacturer's instructions.
- з. Powered equipment must be serviced regularly. 4. Powered equipment should be switched off
- when not in use. 5. Equipment which requires training to use must

A jug for boiling water

not be available to customers. 6.

Powered Equipment





For defrosting, reheating and cooking







nd blending food



smooth texture

Equipment must not be situated where it could create a fire hazard.

Safety notices should be placed on all large pieces of equipment.

Staff allocation

The restaurant manager coordinates all activities at the restaurant.

staff must perform Consider

- The size of the restaurant, Flow of customers, type of clientele and
- Menu offerings
- Different skills and personnel requirements related to changes of volume and customer preferences.

Customer trends

Customers are influenced by

- TV Magazines Health Travel abroad · The right to be informed labout quality, quantity, allerges etc. Technology Ratings and reviews 働 The right to receive satisfactory product that match their product Safety and security Looking 1.4
- 14 doon and index. whites Sec. Ann nation 1000 lean Rephotor Sales for inchú6 many 10-p · Use strict stock control procedures, have a checking system in place. 54 00% Insisting Security **April**s

Monitor stock levels for re-ordering Decide frequency of stock check Stock level checks could be for Wines Solds Coffoo Order pads ficks. nables

Food service

Food can be served in many ways. The type of The restaurant manager must define the tasks that service depends on the following factors:

- . The type of establishment or where it is
- The type of food or menu being served
- The cost of the meal or food
- . The time available for the meal
- The type of customer
- The number of customers expected
- The availability of skilled serving staff

Documentation

Peret

A senior staff member such as the head chef or kitchen manager is responsible for carrying out administrative tasks that ensure the efficient working of all equipment and machinery.

Other documentation such as HACCP checks and accident records are kept up to date to comply with legislation.

Temperature control charts Reading temperature of refrigerators,

freezers and store cupboards

Hygiene information

Hazard Analysis Critical Control Points (HACCP)

Time sheets Staff shifts, rotas

Accident forms

It is the law to report all accidents that occur on the premises

Equipment faults

First in First out for lans with a shall. Any equipment not working properly must be recorded and reported to the appropriate person. Where equipment is under warranty it must be reported to the manufacturer for repair.

Bookings and reservations

- · Electronic booking system
- Electronic reservations system
- Diary with bookings and reservations
- Feedback forms

The EPOS system is a computerised piece of technology that records data. In the hospitality industry it is used when customers purchase services or food. It can be set up to record bookings, therefore preventing double bookings as well as updating food stock levels as menu items are purchased.

It can be used for -

- Recording sales
- Updating stock levels
- Providing accurate pricing information
- Enable fast and efficient customer service
 - Keeping track of sales and taxes



Subject Contents









face standing rd

whishing large

cales or owners

for lowading, mixing or

Customer rights.

New year way reduce the risks

take responsibility for money

Security mark all equipment

Imp all areas well-bt.

Use CCTV cameras

Use security passes; add visitors to sign in.

The right to be protected (against hexandrus gooth)

· The right to have their complaints be heard

The right to seek redressel (compensation.)

Reduce cash handling by staff, have specific staff

Train staff to identify suspicious packages and individuals

Restrict conference or exitting associate to contain second

· Check guest identification on check in with photo LD.

All equipment should be cleaned in het water using detergent.

Hand Equipment: Knives

0+1-0

Deep-fat byon For deep-fat bying

faod in very hot ail

Powered Equipment: Care, Safe Use and Cleaning

Should be serviced regularly by an electrician. Usually at least once a year.

Should be cleaned according to a regular routine and a record kept. of maintenance.

Staff must be trained in safe operation of larger equipment.

Manufacturers instructions for cleaning and use must be read, followed, and kept safely.

Equipment should be switched off at the wall while not in use.

	Chorden a popula	Claminhos
۰.	Food hydiene checks	Cutlery
	Alexandream	Cauckary
	Cleaning checks	Deinks in ber
	East aid months	Nuts, breads
	FIRE BUILDING	Other consur

Fire certificate Staff training records Accident book

lealth and safety, hygiene



Hospitality & Catering - LO2.3

Types of customer

Leisure	Local residents	Business / corporate
Customers who visit the establishments in their leisure	Customers who live in the local area who visit the	e.g. business lunches. Use business facilities in
time e.g. a meal with friends, a family day out, tourists,	establishment often eg regular Sunday lunch, or get togethers	establishment for meetings or presentations. Courses and conferences

Leisure customers requirements

Value for money

Good facilities

Families want child menus, play area, child friendly Tourists want local food, easy to communicate Older people may want more formal service Good customer service

Varied choice of menu

Dietary needs eg allergies, intolerances, vegetarian catered for without having to ask for special foods

Facilities for physically impaired customers Local customers requirements

Value for money

good standard of customer service so they retu Catering for local needs (culture, religion) Consistent dishes served Loyalty schemes Recognised by staff- feel welcome Menu specials Theme nights OAP discount day Child friendly Entertainment Mailing list or email for special offers

Business customers requirements

Dedicated corporate (business) contact at
establishment
Discounted rates
Meeting rooms
Water, juice on tables
Presentation equipment, projector, tv,
Office facilities- printer, phone, fax, internet, stationer
Tea and coffee for breaks
Lunch or other meals- buffet or restaurant
Accommodation if attendees are from a long distance
Quick service for lunch meetings

What is good customer service?

Problems dealt with efficiently	Respect & polite	Sincere staff
Patient -	Good customer service	Helpful & attentive
welcome and want to return Friendly	Smart & professional	Knowledgeable about products and services

Types of Bedroom Accommodation

Youth hostel (YHA)

Accommodation is usually in comfortable bunk bedded rooms, sharing with people of the same sex.

Showers and toilets are shared. Bed linen pillows, duvet and blankets are provided free of charge for you to make up your bed.

A full meal service is usually provided. Some locations also have self-catering kitchens. Most locations will have a sitting area, drying room and cycle store.

Hotel deluxe suite (Hilton)

Stylish suite with separate living room and large bathroom with free soap, shampoos and creams. A toweling bath robe and slippers are also provided.

Desk with high-speed Internet connection. Also provided: Safe, iron, ironing board, clock, radio and radio alarm, hair-dryer, sofa bed, trouser press, TV with teletext, satellite channels and on-demand films, tea- and

coffee-making facilities, bottled water and biscuits.

Cabin room at airports (Yotel)

Book from just a few hours, day or night, to 24 hours or more. Large single bed 2m x 1m (large enough for one or two people at a push) with full sitting height.

Bathroom with shower, revitalising all-in-one body wash, heated mirror and soft towels. Fold-out work desk and stool (doubles for unpacking), overhead hand-luggage stowage, suft-bag hanging and storage areas for small pieces.

Complete range of power and connectivity including free Internet access and local lighting. 20-inch flat-screen TV with choice of films, radio, games and Internet, 'Cabin'-service menu on screen, and 24-hour 'galley' café service.

If you provide any sort of accommodation, serviced or self-catering, the Equality Act

2010 applies to you.

quality Act

- The Act protects anyone who is disabled, is thought to be disabled
- or is associated with someone who is disabled.
- · The Act gives these people rights of access to goods, facilities and services

(including tourist accommodation) and ensures that they are treated no less

favourably than other customers.

they will spend more money and also tell other people about the business

You are also required to make reasonable adjustments to the way you deliver your

services and to the physical features of your premises to make it easier for disabled guests to use them.

		Why is customer service so important in the hospitality industry?	Instruction	Guidelines	Ser
	Сі ВМ	ustomer service is what an establishment does in order to meet the expectations of eir customers and generate customer satisfaction. So customers return People will not return to a place where they were not satisfied	Stop	Prohibition Sign Round shape. Back pictogram. White background.	\bigotimes
ive		with the service. Repeat business means a successful business. Exceeding expectations. This makes repeat business more likely	Danger	Red edging. Warning Sign	\sim
ble cts		Growth of the business- If customers receive a high standard of service and return.		 Inangular shape. Black pictogram. 	

Risk and Security

Workers can be at risk from security hazards in the same way they are

Security risks include

- Disagreements between customers.

 - Customers who have used drugs
 - Verbal abuse Physical assaults







- Handling large amounts of money in open areas
- Face to face contact with customers .
- Opening late in the evening or early in the morning •
- Dealing with customer complaints or disputes .
- Selling high value items such as alcohol •
- Establishment in an isolated area eg country pub
- . Poor lighting
- Establishment in a high crime area

Staff (and customers) may feel threatened by physical assaults, threats and intimidation and verbal abuse People at risk includes

- Young workers who have less experience
- Night shift workers where there are less people
- Lone workers e.g. people working early or late
- Customers in the establishment

Prevention

- Brightly lit areas
- CCTV
- Easy escape routes
- Area for handling larger sums of money
- Appoint more senior staff to deal with problems and complaints
- Train staff to diffuse angry customers
- Contact local police if necessary
- Make sure lone workers are aware of risks
- Keeping doors and windows secure and locked

	Instruction	Guidelines	Sign	Obey	Mandatory Sign Round shape.		
	Stop	Prohibition Sign Round shape. 			White pictogram. Blue background.		
fed		Black pictogram. White background. Red edging.	\bigotimes	Safety	Emergency Escape or First Aid Sign	-	
	Danger	Warning Sign	-				
m,		 Triangular shape. Black pictogram. Yellow background. Black edging. 	A	Fire	Fire Fighting Sign. Rectangular or square. White picture. Red background.	an dear	

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

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Boutique hotel

beverage facility.

control.

ICC011

licensed bar

window.

Designed with a sophisticated and

modern slant on the Moroccan theme.

New luxury Italian tiled en-suite shower

and toilet. CD player (with shower-room

speakers), flat screen TV with Free view, fridge, hair-dryer and hot

Motel (Premier/Travel Inn)

bathrooms with shower gel.

Comfortable king-sized beds. Good

quality duvets and pillows. En-suite

Remote control TVs. Tea- and coffee-

making facilities, Hairdryers, Heater

Spacious desk area with Internet

amily rooms, with cots on request.

24-hour reception. Restaurant and

nearby. Hot breakfast available.

Subject Contents

Funky leather bed and "bellydancing" ornate bottles. Luxury room featuring a from safety hazards. chameleon-floor seating area in the bay







Hospitality & Catering - LO3.1

The Health and Safety at Work Act (HASAWA) 1974, regulates health and safety issues.

The act aims to:

- secure the health, safety and welfare of persons at work
- protect other people from health and safety risks caused by work activities
- control the use and storage of explosive and dangerous substances.

Under the Health and Safety at Work Act, employers have responsibilities to:

- 1. ensure the health, safety and welfare of employees
- provide and maintain safe equipment and systems of work 2.
- make arrangements for safe use, handling, storage and transport of articles and . The H.S.E will investigate any complaints and safety з. substances
- provide information, instruction, training and supervision 4.
- 5. provide a safe place of work, safe entrance, exit, and work environment
- provide adequate toilet, washing and changing facilities. 6.

Under the Health and Safety at Work Act. employees have responsibilities to:

- 1. follow safety instructions and training received
- co-operate with their employer
- not to misuse or tamper with anything provided in the interests of health and safety
- 4. take reasonable care of their own and other people's health and safety
- tell someone if you think the work or inadequate precautions are putting anyone's health and safety at serious risk.

PPER - Personal Protective Equipment

Employers have duties concerning the provision and use of personal protective equipment (PPE) at work.

PPE is equipment that will protect the user against health or safety risks at work. It can include items such as safety helmets, gloves, eye protection, high-visibility clothing, safety footwear and safety harnesses. It also includes respiratory protective equipment (RPE).

These prevent injuries to:

- the lungs, eg from breathing in contaminated air
- the head and feet, eg from falling materials
- the eyes, eg from flying particles or splashes of corrosive liquids
- the skin, eg from contact with corrosive materials
- the body, eg from extremes of heat or cold
- PPE is needed in these cases to reduce the risk.

LO3 Understand how hospitality and catering provision meets health and safety requirements

HSE

lealth 5. Safet

RIDDOR - Reporting of Injuries, Diseases and

Carcinogens, mutagens and biological agents

H.S.E Health and Safety Executive.

H.S.E stands for the Health and Safety Executive.

The H.S.E employ Health and Safety Enforcement

Officers who will inspect safety procedures being

They have the power to serve notice and/or issue

It is compulsory to contact the H.S.E if an operative

legal proceedings over safety incidents.

COSHH - Control of Substances Hazardous to Health Regulations 2002

Dangerous Occurrences Regulations 2013.

What to report?

Deaths and injuries

Occupational Diseases

Dangerous Occurrences

Gas Incidents

incidents.

accident at work.

Substances can take many forms and include:

products containing chemicals

classed as a hazandous substance.

disease and germs used in laboratories.

COSHH covers substances that are hazardous to health

gases and asphysiating gases and biological agents (germs).

perms that cause diseases such as leptospirosis or legionnaires

PPE in catering situations

If the packaging has any of the hazard symbols then it is

used.

chemicais

fumes

Vapours

nanotechnology

dusts

mists

Specified Injuries to Workers

Who should report it?

If you are an employer, you must report any work-related deaths, and certain work-related injuries, cases of disease, and near misses involving your employees wherever they are working. If you are in control of premises If you are in control of premises, you must report any work-related deaths, certain injuries to members of the public and self-

employed people on your premises, and dangerous occurrences (some near miss incidents) that occur on your premises

Agency Workers/Casual Staff

Agencies should ensure that responsibility for reporting under RIDDOR is clearly assigned to the appropriate person based on the particular facts of the employment relationship. Agencies should ensure that reporting responsibilities are clearly understood by host businesses and the workers.

First Aid

· Employers have to provide first aid facilities at work

- As a minimum, there should be a fully stocked green first aid box and a person appointed to take charge in an emergency
- · Some workplaces have qualified first aiders and first aid rooms
- Green and white notices should inform you where the first aid box is kept and who the first aider(s) or appointed person(s) is/are has an absence of more than three days following an



Every substance that is a hazard 5. Removing PPE that could cause contamination before has a COSHH safety sheet

Bag opening, tipping and dough mixing

- and it Regimenting made
- You must wear the p.p.e. if it has been provided for you. You could be held personally liable if you had an accident which could have been prevented by you wearing your p.p.e.

 You must care for it, store it and clean it as necessary;

You must report any defects.







Record other accidents resulting in injuries where a worker is absent from work or is incapacitated for more than 3 days.

Fire safety

- · Employers must have arrangements in place
 - · to prevent fires Fire exit To raise the alarm
 - () See a
 - To fight fires (fire extinguishers)
 - Emergency evacuation (including a pre-arranged) meeting place for staff to assemble following evacuation)
- · Notices showing the safe evacuation routes from buildings should be green and white

Employees responsibilities under COSHH

- 1. Use control measures and facilities provided by the employer
- Ensure equipment is returned and stored properly
- Report defects in control measures 3.
- Wear and store personal protective equipment (PPE)
- eating or drinking
- 6. Proper use of washing, showering facilities when required
- Maintaining a high level of personal hygiene
- Complying with any information, instruction or training that is provided

What Is Manual Handling?

- · Any transporting or supporting of a load by hand or bodily force
- · Lifting, putting down, pushing, pulling, carrying or moving



Subject Contents

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM









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Hospitality & Catering - LO3.2

The top 4 injury types in Hospitality and catering

- Cuts
- Burns
- Sprains & strains
- Slips, trips and falls

How Can Cuts Be Prevented?

· To prevent knife cuts:

Cut properly, using the bridge and claw grips



- Carry knives with point down and backwards
- Wear gloves that protect your hands from cuts.
- To prevent machine cuts:
 - · Be sure moving parts are covered by guards.



- Turn off power and unplug to Meat Slicer clean.
- · Keep your hands, face and hair away from moving parts.

Teens under the age of 16 are prohibited from operating food slicers.

- Not wearing clothing or jewelry that could get caught in machines.
- · Not using equipment that you have not been trained to use.



- Ask for training in safe lifting methods.
- Push loads rather than pull them.
- Don't lift and then twist.
- Don't lean out drive-through windows.

Customer safety

- Warning signs when cleaning is taking place
- Do not allow customers in areas where maintenance work is happening
- Signs "mind your head" "watch the step" "hot water"



WATCH

YOUR STEP

Causes of fires

- Equipment that is not serviced regularly can cause over heating and cause fires.
- Human Error many fires that happen in catering. Such as fat frvers.
- Electrical smouldering wires can develop unseer overnight and be the cause of major incidents,
- Arson rare occurrence. grudge between employee and employer, or insurance fraud.
- Chemical not very common now due to the COSHH regulations.

Action on Discovering a Fire.

- Raise the alarm. Break the glass of the nearest alarm point.
- Call the fire services.



How Can Slips, Trips & Falls be Prevented?

- To prevent trips, slips and falls:
- Make sure your path is clear, clean and dry before carrying a load.
- Move boxes and carts out of the way.
- Watch for mop and broom handles
- Use non-slip floor pads.

Use ladders correctly



- Don't lean out
- Move it closer



- Keep hair and clothes away from flames.
- Keep flammable materials away from flames.
- To prevent steam burns:
- · Watch out for steam cloud when you open dishwasher, steam table or other places where steam occurs.
- · Wear protective gloves whenever you open something filled with steam.
- If safe to do so tackle the fire, if in doubt get out.
- Leave the building via the nearest exit calmly. DO NOT run or use lifts.
- Evacuate the premises and report to your designated assembly point.



Slip-resistant shoes

How Can Burns Be Prevented?

To prevent other oil and grease

Watch out for spatters and

To prevent burns from open flames:

burns:

spills.

happen.

Use protective apron and mitt.









Mind your

head

Very hot water



Hospitality & Catering - LO4

BACTERIA What do bacteria need to multiply? LO4 Know how food can cause ill health Bacteria are microscopic Warmth moisture MICROBES (or BACTERIA) organisms which are are found in: commonly referred to as Soil and Water 'GERMS'. They found Plant and Plant Products Metals like lead and mercury stay in our Air and Dust everywhere Including on body for a long time and make us ill. Animal Fur Foods may taste or smell funny. and in people, on food, Gut of animals and humans Mercury is a naturally occurring element found in air, Time Food Food handlers in water, soil and air. Food prep and serving utensils water and soil. A highly toxic form (methylmercury) SIGNS AND SYMPTOMS Some are good for us, builds up in fish, shellfish and animals that eat fish. Fish AT RISK GROUPS Impairment of peripheral vision and some are bad! and shellfish are the main sources of methylmercury Disturbances in sensations 'pins and exposure to humans. Fish that typically have higher needles' levels of mercury include king mackerel, marlin, shark, Lack of coordination swordfish, tilefish, and tuna. Impairment of speech, hearing, walking . Many of these types of fish are used in sushi, Muscle weakness Intolerance Allergy Poisoning Food intolerance Hours to days to see Can occur within minutes From 30 min for toxine Mouth ,may be sore, bad breath Sec. 1 of exposure to food 12-48 hours bacterial COMMON CAUSES OF FOOD SPOILAGE Digestive system cant Immune response to Bacteria poison or disrupt WHAT FOOD SPOILAGE LOOKS LIKE process the food Skin rash, redness, itching swelling eczema allengen digestive system Inadequate temperature storage Toxina- few bacteria Possible to eat a small Body reacts to tiny Large amounts colonise gut mount without effect amounts of food Prolonged storage times Gut abdominal pain, bloating, heartburn, Stop eating the food and May need advanative or Runs its course of illness cramping, vomiting, diarrhoea or constipation Inadequate ventilation it goes away anti histamines then ends dour - break down of Cross contamination . Lungs chronic cough, wheezing Easier to detect the food Allergens may be small No smell, no taste, no amount in ingredients sion Delays between delivery and storage Symptoms if you eat a lot Symptoms if the food is Head headache, brain fogginess, migraines Symptoms every time Delays between preparation and cooking or frequently even tiny amounts contaminated . even/blue mobil Moderate to serious Can be fatal Serious illness to fatal Perception irritable, moody, panic, depression CHEMICALS liness MOULDS PESTICIDES AND HERBICIDES Tiny fungi which grow from spores found in Remnants of cleaning chemicals ALLERGENS the air Some of the chemicals used in farming may remain on or in the food Pesticides Some people may develop an allergy to peanuts or we eat. These may cause us harm. to the gluten in wheat. If they eat foods Settle on food products Insecticides containing these, they may become very ill, and Farmers spray pesticides on crops to kill the insects that may reduce crop and multiply Paint (wall surfaces) possibly die. yield. They also spray herbicides to kill weeds that may compete with The 8 most common food allergies include: When visible, food is described as 'mouldy' the crops. Some of these chemicals may remain on the surface of, for PHYSICAL example, fruit. Others may be absorbed by the plant and therefore be Cow's milk Symptoms can occur anywhere from a few Causes food spoilage present in the crop. Eggs minutes after exposure to a few hours later,

PARASITES



Parasites are organisms that derive nourishment and protection from other living organisms known as hosts. The most common foodborne parasites are protozoa, roundworms, and tapeworms.

Causes food poisoning when humans ingest undercooked meat products in which the parasite has often survived.

Physical Contaminants Include: Hair



- Finger nails
- Broken utensils
- Pests POISONOUS PLANTS

Some plants naturally produce poisonous chemicals. If these are eaten they may cause death. Other foods may contain chemicals that give rise to allergies in some people.

Other poisonous plants: some fungi, rhubarb leaves, parts of potatoes which are exposed to the sun while growing.

The European Union has strict laws that determine how much of these chemical residues are permitted in foods.

If you suspect someone of going into anaphylaxis you must:

- Call an ambulance
- Check for the casualty's Epi-Pen and help them use it. You may have to do this for them, all pens have instructions on the side.
- Lie the casualty down with their legs elevated to treat for shock
- Stay with the casualty and reassure them while you wait for the ambulance

In more severe cases, a food allergy can cause anaphylaxis. Symptoms, which can come on very guickly, include an itchy rash, swelling of the throat or tongue, shortness of breath and low blood pressure. Some cases can be fatal.



SHELLFISH

Shrimp, Prawns, Crayfish, Lobster, Squid, Scallops



and they may include some of the following:

Swelling of the tongue, mouth or face

Difficulty breathing

Diarrhea



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- Tree Nuts ٠ Peanuts

Fish

- Shellfish .
- Wheat Soy
 - Low blood pressure Vomiting
- COW'S MILK
 - Hives
- Milk, Milk powder, Cheese, Butter, Margarine, Yogurt, Cream, Ice cream

Hospitality & Catering - LO4.2



Gluten can be found in wheat and other grains.

What food products cannot be eaten by coellac disease sufferers?

Environmental Health Officers (EHO) who regularly check all food premises.

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The Environmental Health Officer's (EHO) role is to inspect premises in order to ensure the food a establishment produces is safe to eat.



At the end of their visit, in England, Wales, and Northern Ireland, they will present the establishment with a score from the

Food Hygiene Rating scheme of 0 - 5. The scheme is standardised across England and Wales to maintain a consistent assessment of safety standards. Any business should be able to achieve a "5 - very good" rating.

These regulations cover three main areas:

- Food premises
- Personal hygiene of staff
- Hygienic practices

- Have equipment that is clean and in good working order.
- Be free from pets, pests, etc.

Food handlers must:

- Have a certificate/regular training in food safety.
- Be dressed in clean 'whites' or other uniform.
- Have hair tied back (and ideally wear a hat or hair/beard net).
- Have short, clean nails no nail varnish or jewellery.
- Be in good health (they cannot work with upset stomachs).
- Have 'good' habits, e.g. no coughing or sneezing over food.
- Wash their hands after handling raw meat, after blowing nose. after going to the toilet, etc.
- Cuts should be covered with coloured waterproof plasters.

Examples of good hygiene practices include:

- Food deliveries should be checked thoroughly.
- Food should be labelled and stored correctly (in freezers, chillers, fridges and dry stores).
- Food should be 'rotated' (first in, first out).
- Care should be taken with temperature control in the kitchen (i.e. food kept out of the danger zone of 5°-63°C).
- Food should be prepared quickly and as close to cooking time as possible.
- Mot food should be maintained at above 63°C.
- The core temperature of cooked food needs to be at least 75°C.
- Chilled food should be stored below 5°C
- Washing up should be done in hot soapy water if there is no dishwasher available.
- Waste should be disposed of safely.

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

Subject Contents



Be well maintained.

Be regularly cleaned.

- Have lockers for employees.
- Have hand-wash facilities provided.

Have clean cloakroom and toilet facilities.







Hospitality & Catering - LO4.3

HACCP (2006)



Hazard



The Consumer Protection Act 1987

prohibiting the manufacture and supply of

a defective product responsible for damage it

allowing local councils to seize unsafe goods

and suspend the sale of suspected unsafe

prohibiting misleading price indications

making the manufacturer or seller of

This protects the public by:

Critical

- ontrol Ρ oints

unsafe goods

causes

goods



What does it mean?

- Legal requirement
- Identify the most critical (dangerous in terms of bacteria) areas of their business to make

- sure they are under control

Review the system when operations change The Trade Descriptions Act 1968

The Trade Descriptions Act makes it an offence for a trader to make false or misleading statements about goods or services.

controls

HACCP System

Food companies need to:

Analyse the hazards to food safety

Implement appropriate controls

Establish a monitoring system

(corrective action)

· Assess the level of risk from each hazard Decide the most critical points that require

Set up procedures to correct problems

It carries criminal penalties and is enforced by Trading Standards Officers, making it an offence for a trader to:

- apply a false trade description to any goods supply or offer to supply any goods to which a
- false trade description has been applied
- make certain kinds of false statement about the provision of any services, facilities or accommodation

The Food Hygiene regulations 2006

- · Applies to high-risk foods
- Cold foods- store below 8°C
- Hot foods store above 63°C

During service :-

- Cold food max 4hrs at room temperature then discard or refrigerate
- Hot food maximum 2 hrs
- Buffet food 90mins at room temperature

Influence of temperature



Dead!. Destroys most pathogens Too hot (start to die 63°C)

Multiply rapidly

Spoilage slow growth, most pathogens no growth (<5°C) Dormant (no growth – spoilage or pathogens).

Defence of Due Diligence

The principal of defence under The Food Safety Act 1990

REEN PE

- · A business must be able to demonstrate that it has done everything within its power to safeguard consumer health
- Accurate records are useful in proving this defence; these may include:
- Temperature control records delivery/storage/cooking
- Microbiological records
- Hygiene training for staff
- Use of HACCP system
- Pest control records
- Hygiene manuals, cleaning schedules
- Hygiene policy

Food poisoning

Mouth increase in saliva

Head headache

Skin fever, shivering

Gut abdominal pain, nausea vomiting, diarrhoea

Circulation, low blood pressure, weak pulse, fatigue laws.

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Example

in food

later and

Salmonella in chicken

materials e.g. bleach

Contamination from cleaning

Damaged packaging, glass found

Type of hazard

Biological

Chemical

Physical

Food Labelling Regulations (1996)

A hazard is something that has the potential to cause harm



A critical control point is a Control step which eliminates or reduces the hazard

Points

Control is essential to reduce the risk of food poisoning.

If a caterer gets it wrong they could be breaking the law

all stages from purchasing through to preparation and serving is controlled.

Examples of CCP's (Critical Control Points) are:

- Inspection of goods on delivery
- Storage & handling of ingredients & finished product.
- Temperature of fridges, freezers & ovens
- Cleaning procedures for equipment
- Cross-contamination
- Personal hygiene & health standards
- Proficiency of use and cleaning of equipment

Record Keeping

Legal requirement that certain records are kept as part of the HACCP-based food safety management system, eg:

- Fridge/freezer records
- Cooking/hot-holding temperatures
- Cleaning records
- Training records
- · Pest control checks

The Food Safety Act 1990

Country automation

Contraction of the

Food businesses:

- · Must ensure that the food served or sold is of the nature, substance or quality which consumers would expect, e.g. :
 - Nature pollock rather than cod;
 - Substance contains foreign material including glass or packaging;
 - Quality mouldy bread or stale cake.
- · Ensure that the food is labelled, advertised and presented in a way that is not false or misleading. e.g. photos on menus that do not look like the dishes served to customers.

Hospitality and Catering Businesses can be fined up to £20.000 or owners can face up to 2 vears in prison for failing to comply with food

- Keep yourself clean. Keep the workplace clean.
- Wear suitable clothing.
- Protect food from
- contamination. Store, prepare & serve food at
- the correct temperature
- Inform a manager if you are ill.
- Do not work with food if you have symptoms of food poisoning.

PREVENTION: Personal Hygiene

- Tie hair back b.
- Remove jewellery
- Roll up sleeves
- Wear an apron
- WASH HANDS THOROUGHLY

Subject Contents

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM



Hospitality & Catering - LO4.4



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Maths Foundation - Graphs



YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

Maths Foundation - Perimeter, Area & Volume





YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

Maths Foundation - Plan, Elevation & Nets



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Maths Foundation - Ratio & Proportion





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Maths Foundation - Similarity & Congruence





YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

Maths Higher - Bias & Sampling



Year 9 Higher Half term 5, Topic 3 Bias and Sampling

Population and Sampling

A population is a set of items or people that you want to study in connection with the "question".

e.g. If you wanted to know the opinion of Harrow Way students about the canteen, the population would be students at Harrow Way school.

A census is a survey of the entire population.

This is expensive and time consuming.

A sample is a smaller group that is taken from the population – it assumed that it is representative of the population and should be at least 10% (small populations) or 1000+ (big populations).

Capture Recapture V391



Select a samp

from the

population

Generalia

and usions from

he sample to the

population

Bias Is introduced when a sample selection or guestionnaire favours one choice over another.

Biased data is inaccurate

Sample - a selection of data is made. It is said to be biased when a certain item, person, group or idea is favoured or chosen in an unfair way.

e.g. the opinion is sought about supermarkets in a town and a survey is carried out by sampling visitors to one supermarket on a Saturday morning.



Questionnaires can introduce bias by having questions which are too vague or restrictive. having non-exhaustive options for answers or by being written in such a way as to suggest a particular answer (a leading question).

Sampling Techniques

Random sampling is where each member of a population is equally likely to be selected.

(Learn this definition!) V282

Possible methods include using a random number generator from a computer programme, using the random number button on a scientific calculator or using a random number table.

Each member of the population is assigned a number. The correct number of random numbers are generated and those members of the population are selected for the sample.

Stratified random sampling V281

The number selected from each group or strata is proportional to the size of the group.

 $\frac{Number \ in \ group}{total \ number} \ x \ sample \ size$

e.g. there are 105 y7s in a school of 850 students. The number of y7 in a sample of 50 is 105 x 50 = 6.17... therefore 6 y7 students 850

Maths Higher - Histograms & Frequency Density





Key Information

A histogram is used to represent grouped data. This is plotted on the x axis.

Frequency density is plotted on the y axis

The area of the bar represents the frequency.

 $Frequency \ Denisty = \frac{Frequency}{Class \ Width}$





<u>Drawing V 157</u> – work out the frequency density for each bar.

 $FD = F \div CW$

Interpreting V 158 – work out the frequency for each bar or part of bar,

 $F = FD \times CW$

 $\begin{array}{ll} 120 \leq h < 130 & 0.1 \ x \ 10 = 1 \\ 130 \leq h < 140 & 0.5 \ x \ 10 = 5 \\ 140 \leq h < 145 & 0.8 \ x \ 5 = 4 \\ & & & \\ Total & = 10 \end{array}$

Remember <u>V159</u> Median is half the total frequency 3 + 5 + 8 + 10 + 6 = 32 $32 \div 2 = 16$ So median for this data is 150 cm.



Height, h, cm	100≤h<130	130≤ h<140	140≤h<150	150≤h<160	160≤h<180
Frequency	0.1 x 30 = 3	0.5 x 10 = 5	0.8 x 10 = 8	$1.0 \times 10 = 10$	0.3 x 20 = 6



Maths Higher - Multiplicative Reasoning



Year 9 Higher Half term 5, Topic 1: Multiplicative Reasoning

Multiplicative means involving multiplication or division

<u>**Rates</u>** - where something changes over time such as speed (distance per unit of time), temperature change per hour or other compound measures such as density (mass per unit of volume) and pressure (force per unit of area).</u>



Lines A and B show a constant rate of change. The rate is the gradient of the graph. Graph A shows direct proportion as it is a straight line through (0,0). The cost is £0.25/min Graph B has a fixed cost but then the rate (cost per minute) plus a cost of £0.20/min Graph C has a fixed cost for 56 minutes and then a cost per minute of £0.05/min

If *y* is directly proportional to *x*, $y \propto x$ and y = kx, where *k* is a number, called the **constant of proportionality**. $\sqrt{254}$

x	у	$\frac{y}{x} = k$
3	6	$\frac{6}{3} = 2$
5	10	$\frac{10}{5} = 2$
7	14	$\frac{14}{7} = 2$
9	18	$\frac{18}{9} = 2$

Decimal Multipliers are used in percentage calculations V239

Percentage of ---- change percentage to decimal and multiply **Percentage increase** ---- add percentage increase to 100, change to decimal and multiply

Percentage decrease ----subtract percentage decrease from 100, change to decimal and multiply

Successive percentage increases/decreases ---- change to decimal multipliers e.g. £500 is increased by 3% and then decreased by 2%

500 x 1.03 x 0.98 = £504.70

Percentage change ---- such as calculating profit or loss. New amount divided by old amount, multiply decimal by 100 and subtract 100. Positive answer is percentage increase and negative answer is percentage decrease. e.g. Cost has gone up from £50 to £80 $80/50 = 1.6, 1.6 \times 100 = 160, 160 - 100 = 60$ Therefore 60% increase **Reverse Percentage** <u>V240</u>---- calculate the new percentage (as in increase or decrease) and divide e.g. After a 4% increase the cost is £80. What was it before the increase? 80/1.04 = 76.923... £76.92

Compound Interest <u>V236</u>-----Find the new percentage as a decimal. Raise to the power of the number of years and multiply. e.g. $\pounds500$ is invested at a rate of 2% for 3 years. $500 \times 1.02^3 = 530.604$ $\pounds530.60$

Where k is the constant of proportionality:

- if y is proportional to the square of x then $y \propto x^2$ and $y = kx^2$
- if y is proportional to the cube of x then $y \propto x^3$ and $y = kx^3$
- if *y* is proportional to the square root of *x* then $y \propto \sqrt{x}$ and $y = k\sqrt{x}$

Maths Higher - Pythagoras in 2D & 3D





YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

Maths Higher - Sequences



Year 9 Higher Half term 5, Topic 2: Sequences V286, V287



Types

Arithmetic – the term to term rule is + or – a number. If this common difference is a, then the nth term rule in the form an + b



<u>288</u>	<u>V289</u>)			
omr	non c	liffe	erenc	e is	+3
		-	-		

Key words

sequence

Ascending - going up

Nth term - the rule to generate any term

Descending - going down Finite - has a final point

Geometric – the term to term rule is x or \div by the same number. If the common ratio is r, then the nth term is ar^{n-1} . Here r is 3 so the nth term is 2 x 3^{n-1} V375

2, 6, 18, 54, 162, 486, ...

This sequence also has a common ratio of 3, but it starts with 2.



Quadratic – the first difference isn't constant so the second difference is worked out. The nth term is $an^2 + bn + c$ and a is always $\frac{1}{2}$ the second difference.

5, 1	8, 35	5, 56	, 8 :	1, 11	0,
\cup	$\mathbf{\bigcirc}$	\cup	\cup	\mathbf{O}	
13	17	21	25	29	
				1	
				•••	

a = 2	Subtract the sequence	of $2n^2$ to work out the remaining linear part.
- 2n ²	5 , 18, 35, 56, 81, 110 2, 8 , 18, 32, 50, 72	
	3, 10, 17, 24, 31, 38 +7	7n – 4
	2n² + 7n - 4	

Other types

Square numbers	1, 4, 9, 16, 25,	n ²
Cube numbers	1, 8, 27, 64, 125	n ³
Triangular Numbers	1, 3, 6, 10, 15, 21	½n² - ½n

Fibonnacci V287a

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, ... is found by adding the two numbers before it together. The 2 is found by adding the two numbers before it (1+1) The 21 is found by adding the two numbers before it (8+13) The next number in the sequence above would be 55 (21+34)

Maths Higher - Upper & Lower Bounds



Year 9 Higher Half term 6 Topic 1 Upper and Lower Bounds $\underline{V183}$, $\underline{V184}$

A rounded number is an approximate value. The actual value could be higher or lower than the rounded number.

Working out the upper and lower bounds of a rounded number gives the range of possible values for the number before it was rounded.

The upper and lower bounds are always ± half the unit of rounding

e.g. The length of a book was measured as 27.3 cm to one decimal place. $\sim 27.30 + 0.05 = 27.35$

27.3 0.1÷ 2 = 0.05





This can be written as an error interval $27.25 \le \text{length of book} \le 27.35$

Generally the **error interval** is $LB \le x \le UB$

Bounds		
Error interval	The range of values that a number could have taken before being rounded or truncated.	
Upper bound	Is the highest limit above which there can be no higher values.	
Lower bound	Is the lowest limit below which there can be no lower values.	
Truncate	To cut a number short.	

Truncation is when a number is effectively always rounded down – a part of the number is just chopped off.

e.g. Truncate 35.7289 to 1dp = 35.7

To lower bound of a truncated number is the number and the upper bound is that plus the unit of truncation. $25 \ Q$



This can be written as an <mark>error interval</mark> 35.7 ≤ x < 35.8

Calculations with Upper and Lower Bounds

Select the correct bounds to use in the calculation to give the correct bound of the answer.

Calculation	Biggest possible	Smallest possible
	answer	answer
a+b	UB + UB	LB + LB
a-b	UB – LB	LB - UB
axb	UB X UB	LB x LB
a÷b	UB ÷ LB	LB ÷ UB

Appropriate degree of accuracy

The accuracy when both the upper bound and lower bound are rounded by the same amount and give the same value. If UB = 12.3512 and LB = 12.3475 Rounded to 1dp: UB = 12.4, LB = 12.3 Rounded to 2dp: UB = 12.35, LB = 12.35 Rounded to 3dp: UB = 12.351, LB = 12.348 So the appropriate accuracy is 2dp.

Media





Music Theory



	WLEDGE ORGANISER – Year 9 – Live Performance
LOOK COVER WRITE CHECK Planning a performance	Performance Skills
 How to write a Personal Aim: Vocal/instrumental target - what would you like to show the audience you can do with your voice/instrument? What skills/experience do you have that will allow you to achieve this? How do you want the audience to react/feel during your performance? How would you like to look on stage? (Clothing, hair, make-up, movement) Overall what would you like to achieve with your performance? How will you know if you have achieved this? (audience, teacher, peer, self-feedback). 	 <u>Practise makes perfect</u> - You must rehearse your performance beforehand <u>Always warm up</u> - this will enable you to sing/play confidently <u>Balance of sound</u> - check all the instruments can be heard <u>Intonation</u> - make sure your movement between notes is accurate <u>Learn your music from memory</u> - it allows you to communicate more <u>Don't stop the music</u> - no long pauses between songs <u>Timing</u> - make sure you are in time with other musicians Communicate - without talking on stage with eye contact or hand signals
 Create a set list - 3 or 4 songs that relate to the theme of the brief in some way. Note down the timings of each song. Plan the stage - where will you put each instrument and why? What equipment and instruments will you need? Think about visual resources - will you need a backdrop, projection, confetti canon, etc.? Write down a lighting plan - what would you like the technicians to do with the lighting? Why have you chosen those particular colours/lights? Who will be in your performance and what will they be playing/doing? 	 Engage with your audience - eye contact, talking between songs, movement. Be confident - sing/play/dance like no one's watching Evaluating Your Performance What makes a great live performance2
 How to create a Health and Safety video: List any potential health and safety hazards relating to your instrument. List any potential health and safety issues relating to the performance space. Note down how these hazards could cause harm. Ask your teacher or site staff about how to address these potential hazards. Do a short video tutorial on any health safety issues you have researched and how to solve them so that you have a safe performance space for the musicians and audience members. 	 7) WHAT is the skill? 8) HOW do you know you if this skill was a strength or weakness? 9) WHY is this skill important from a musician's parametrize? Watch the following videos and note down five things that make it a great live performance for each: John Legend - All Of Me (John Letterman): https://www.youtube.com/watch?v=s18cJqrBIOk Eoo Eighters Timor Like These Wembley
 How to create a Rehearsal Diary: 6) Date, time and location of rehearsal. 7) Who was there? 8) What were you supposed to rehearse? 9) What did you actually rehearse? 10) Was it a successful rehearsal? Why? Could it have been more successful? How? 11) What changes/improvements did you make to the set? E.g. change key, timing of the song, lyrics, etc. 	10) IMPACT that this skill has on the audience? https://www.youtube.com/watch?v=cvCUXXsP5WE 11) IMPROVEMENT - strategy for improvement. Rihanna - Umbrella - Live in Manchester

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

PE - Skeletal System



Skeletal System

The Skeletal System

<u>Structure</u> – The skeleton is divided into two sections and you should be able to locate the bones listed below:

- Axial cranium, sternum, ribs and vertebrae
- **Appendicular** clavicle, scapula, humerus, radius, ulna, carpals, tarsals, pelvis, femur, tibia, fibula and phalanges



- Four Different Types of Bone
- Long bones, such as the femur (your thigh bone) and the humerus (in your upper arm). These bones are usually connected with large movements of the body.
- **Short bones**, such as the carpals and tarsals (found in your hands and feet). These bones are linked to smaller movements of the body.
- Flat (or plate) bones. These bones protect the internal organs for example, the skull, the ribs, the sternum and the scapula.
- Irregular bones. These bones are irregular in shape, such as the vertebrae (in your spine)

<u>Joints</u>

The skeletal system is made up of bones that join together to form **joints.** The skeletal system allows **movement** to happen when it is joined up with the muscular system. **Connective tissue** called **tendons** link the bones to the muscles and **ligaments** join up bones at the joints.

Three Types of Joints

- **Fixed joints** There is no movement in these joints. Examples are the skull and the pelvis.
- Slightly moveable joints These joints are linked by cartilage, which means that there is some movement but it is very slight/limited. Examples of these joints can be found in the spine, ribs and sternum.
- **Synovial joints** These are the joints that provide a great range of movement within the body

Types of Synovial Joints

Pivot joint – this type of joint is found in the neck/; it allows rotation of the head.
Condyloid joint – these joints are found in the wrist and ankle.
Saddle joint – this type of joint is found at the base of the thumb.
Gliding joint – this type of joint is found in the wrist and the clavicle.
Ball and socket joint – these joints are found in the shoulder and hip; this type of joint allows the greatest range of movement.
Hinge joint – these joints are found in the elbow and knee; they allow movement that is limited to one plane (similar to a door swinging on its hinge).

Joint Actions

- Abduction: this is movement away from the mid-line of the bod
- Adduction: this is movement towards the mid-line of the body.
- Extension: this is when we straighten the limbs (arms/legs) at a joint.
- Flexion: this is when we bend the limbs (arms/legs) at a joint
- Rotation: this is a circular movement around a fixed point, either inward or outward

The Main Functions of the Skeletal System

- · Working with muscles to allow movement in joints
- Giving support to our muscles and organs
- Protecting vital organs (for example, our skull protects our brain)
- Maintaining our basic body shape
- Producing red and white blood cells (this is done in the bone marrow)
- Storing minerals, such as calcium

PE - Muscular System



Muscular System

The Muscular System

Location and Movement Functions of Key Skeletal Muscles

- Biceps Found in Upper front Arm and allow flexion of the elbow
- Triceps Found in upper rear arm and allow extension of the elbow
- Hip Flexor- Found in hip and allow flexion of the hip
- Gluteus Maximus Found in rear of lower torso and allow extension of legs at hip
- Abdominals Found in lower front torso and allow flexion of the spine
- **Quadriceps** Found in upper front leg and allow extension of the knee
- Hamstring Found in upper rear leg and allow flexion of the knee
- **Pectorals** Found in upper torso and allow adduction of the arm
- **Deltoids** Found in the neck and allow abduction of the deltoid



Antagonist Pairs

Each pair of muscles has an **agonist** (*the muscles that pull, produce the movement and shorten*) and **antagonist** (*the muscle that relaxes and lengthens*). An example of an **Antagonist Pair** is the biceps and triceps. When the elbow flexes the bicep is the **agonist** and triceps is the **antagonist**.



Types of Muscle

Cardiac:

- Found in the heart
- Oxygen dependent, involuntary
- Aids blood flow through the heart

Smooth

- Found in multiple locations including digestive tract, blood vessels and lungs; contracts in all directions
- Can work without oxygen, involuntary
- Aids digestion, helps the distribution of blood

Skeletal:

- Found around the body
- Can work with or without oxygen, works voluntarily
- Aids with movement

PE - Cardiovascular System



Cardiovascular System

ulmonary ver

Left strive

Left ventrick

The Cardiovascular (CV) System

- The main functions of the CV system during exercise are -
- 1. Transport oxygen and nutrients to fuel vital organs and muscles in the body.
- 2. Transport carbon dioxide and waste products away from organs & muscles.
- 3. Regulate body temperature.
- 4. Redistribution of Blood during Exercise (Vascular Shunt) during exercise .
- The cardiovascular system comprises the heart, blood and blood vessels.

Cardiac Cycle

Deoxygenated Blood Pathway -

- from the body
- to vena cava,
- to right atrium,
- to right ventricle,
- to pulmonary artery,
- to the lungs to pick up oxygen and nutrients

Oxygenated Blood Pathway

- from the lungs to
- the pulmonary vein,
- to left atrium,
- to left ventricle,
- to aorta,
- to the body to drop off O2 and nutrients
- Also here the blood picks up waste products (CO2) and becomes deoxygenated

Right ventric

Vena cave

<u>The Heart</u>

This is a muscle which is continually contracting and relaxing, in order to pump blood through the blood vessels. Every time the heart contracts and relaxes is called a 'heartbeat'.

- The heart is made up of four chambers
- The **top two** are called the **atria**
- The **bottom two** are called the **ventricles**
- The heart also has valves, which stop the blood from flowing backwards



Blood Vessels

Veins

- Thin walls, contain valves to ensure blood flows in one direction
- Carry deoxygenated blood to the heart,
- carry blood under low pressure

Arteries

- Thick, muscular walls
- carry blood under high pressure
- Carry oxygenated blood away from the heart to the body

Capillaries

- The smallest blood vessels,
- with very thin walls
- Assist with gaseous exchange at the lungs

<u>Vascular shunt</u> – This is blood redistribution to the muscles with greater demand, while diverting away from areas of lower demand, through: *The widening of blood vessels (vasodilation). The narrowing is called (vasoconstriction)*



PE - Respiratory System



Respiratory System

Pathway of Air Through the Respiratory System

- 1. Nose / Mouth The nose is the primary opening in the body's airway the mouth the secondary. Air is drawn into these and then passes to the -
- 1. Pharynx This also known as the Throat . The air passes through this into the -
- 1. Larynx This is also known as the Voice Box. The air passes through this into the 2. -
- **3.** Trachea This also known as the Windpipe and is the 'main trunk of the tree' At this point there is the –
- Epiglottis 'a small flap of cartilage that acts as a switch between the trachea and the oesophagus (the tube connecting the pharynx to the stomach). When breathing this covers the oesophagus and when eating it covers the trachea to stop choking.'
- 6. Bronchi Air then travels into either the left or right bronchi (the two main branches of the tree) and then into smaller Bronchi. Then air passes into the –
- 7. Bronchioles These spread like *small* branches into the lungs
- 8. Alveoli Finally air passes into the Alveoli and you can think of these as leaves of a tree. Here oxygen is diffused into the blood. There are thousands upon thousands of these.



Mechanics of Breathing

1. Inspiration (Breathing In).

- The **external intercostal muscles** contract and lift up the ribcage (expanding it outwards and upwards).
- The **diaphragm** flattens, pulling downwards and contracting to **increase the volume** of the chest/lungs.
- **Pressure** inside the chest is **lowered** and air is taken into the lungs through the nose/mouth. (*remember gases move from a high to low pressure*)

2. Exhalation (Breathing Out)

- The internal intercostal muscles contract, lowering the ribcage (it drops inwards and outwards).
- The diaphragm becomes dome-shaped, relaxing and moving up
- The volume of the chest/lungs decreases,
- Pressure inside the chest increases and air is forced out of the lungs



PE - Effects of Exercise on the Body



<u>Short Term Effects</u>' The immediate responses that your body makes when exercising'

1. <u>Breathing rate</u> - During exercise, our muscles need more oxygen to provide fuel for the increased work they are doing . This increases the **rate and depth of breathing**

2. <u>Heart rate, stroke volume and cardiac output</u> - As your rate of exercise increases, your muscles need more oxygen for fuel. This causes an

•Increase in your **heart rate** and the force/frequency of its contractions, in order to pump enough oxygenated blood to the muscles that need it most.

•Your body may also **release adrenaline** before exercise begins, and this can also cause the heart rate to rise.

The wall of the left ventricle expands to allow it to fill up with more blood. This increases the stroke volume and so pumps more blood out into the body.
Increase in cardiac output .As cardiac output is determined by heart rate and stroke volume (CO = HR x SV), an increase in these increases cardiac output.

<u>3. Blood Pressure</u> - during and immediately after exercise your blood pressure. will increase. This is because the force of your heart's contractions has increased.

<u>4. Body temperature (sweating)</u> During exercise, the body's temperature will rise. When this happens-

•Messages are sent from the brain to the skin to make it sweat. Sweating is our way of losing heat from our body by the evaporation of sweat.

•Blood vessels near the surface of the skin open up, so that heat can be released.

5. <u>Hydration levels</u> As our body temperature increases during exercise, the skin produces sweat. The body can lose a lot of water and become dehydrated.

6 <u>Muscle fatigue</u> At some point during exercise, our muscles will experience a decline in their ability to generate force or power (this is known as muscle fatigue). This is because the muscles are contracting more often , therefore using up more energy.

7. **Delayed onset of muscular soreness (DOMS)** - This is when we experience sore muscles after exercise/fitness activities, and occurs 1 or 2 days after exercising. DOMS will usually occur when your muscles work harder than they are used to – for example, if you start a new exercise programme/training method, change exercise or increase intensity. This causes damage to the muscle fibres which results in muscles feeling sore

8. <u>Vascular shunt</u> – This will start. Remember this is the process of redirecting blood away from inactive organs to areas of the body that need more blood.</u>

Long Term Effects .'The changes to your body due to exercise over a period of time' 1Cardiovascular endurance increases

- The ventricle walls get larger/thicken and become able to contract more powerfully, pumping out more blood (which increases stroke volume). This increase in size and volume is known as cardiac hypertrophy. Examples of exercise that would produce this include any endurance sport, such as long-distance running, swimming or cycling.
- The **respiratory muscles** (diaphragm, intercostal muscles and lungs) **become stronger**. They are then able to make the chest cavity expand more which allows more oxygen to be inhaled and so more is able to be supplied to the muscles.

2. Efficiency to use oxygen(VO2 Max) increases.

VO2 max is 'maximum amount of oxygen that the body is able to use during exercise').

- Long-term exercise leads to an **increase in vital capacity.** This means more oxygen is able to enter the body and go to the working muscles so they can work harder and more diffusion can occur so there are less waste products such as carbon dioxide.
- The **number and diameter of the capillaries around the alveoli will increase** due to long-term exercise this leads to an increased efficiency in gaseous exchange.

3. <u>Blood pressure decreases</u> - Regular exercise can result in a decrease of approximately 6 to 10mmHg in both resting systolic and resting diastolic BP.

4. <u>Resting heart rate deceases</u>. This is because the size of the left ventricle (stroke volume) increases due to regular exercise and gas exchange becomes more efficient.

<u>5. Muscular endurance increases</u> - Through regular training, our body can become more efficient at tolerating the lactic acid and getting rid of it. This will mean the muscles will not fatigue (get tired) as quickly

6<u>. Muscle hypertrophy and strength increases</u> The term '*hypertrophy' means an increase in size,* **so muscle hypertrophy means that muscles get bigger.**

• Muscle hypertrophy occurs when the muscle cells increase in size. When you overload the muscle, small tears in the muscle fibres occur. When these tears repair themselves, the muscle will increase in size. This means that the muscle becomes stronger and it can contract with greater force.

<u>8 -Red blood cells increase</u>. This increase means that the body becomes more efficient at transporting oxygen in the blood to the muscles that need it during exercise.

<u>9. Flexibility increases</u>. This is due to the ligaments and tendons being stretched and becoming stronger and more when we exercise.

PE - Diet



Diet

Balanced Diet

It is important that you take into account that a Diet should contain-

<u>Carbohydrate (50-60%)</u> Most energy that your body needs comes from these. They are either **Simple** Sugars (sweets, biscuits, fruit) or **Complex** Starch (Pasta, rice, bread, potatoes).

<u>Protein – (15-20%)</u> This is broken down to **amino acids** by the body. These help the body with growth and repair. They are very important for building muscle in your client. Eg chicken, fish, eggs, meat, nuts, milk, tofu/ Quorn.

Fat – (15-20%) – Your need fat in your diet to help maintain skin, protection for vital organs, give body warmth and help absorb vitamins. Fats are either saturated (meat, butter, milk, cream and cheese), or unsaturated (oily fish, such as salmon and mackerel, nuts and seeds).

<u>Fibre</u> - This helps to keep the digestive system healthy, lower cholesterol levels and reduce the risk of bowel cancer eg Wholemeal bread rice , potato , nuts, baked beans , carrot

<u>Water – (6-8 cups per day)</u> – can also be fruit juices and other drinks. Your client will need this to cool their body, carry nutrients in the blood.

The Eatwell plate

This_is one way to analyse a persons diet. It recommends

- five portions of a variety of fruit and vegetables a day
- Meals based on starchy foods, such as bread, rice, pasta and potatoes
- Some dairy foods (or alternatives), such as milk, cheese and yoghurt
- Sources of protein, such as fish, eggs, meat and pulses
- At least two portions of fish every week (one of which should be oily, such as salmon or mackerel)
- Only small amounts of foods that are high in fat, salt and sugar



Energy balance – If your client eats more than the recommended 2000 kcal per day and does limited/ no exercise they will gain weight. If your client is eating less than 2000kcal per day and or completing a lot of exercise they will lose weight and struggle to build muscle / repair the body after exercise. Remember exercise uses Kcal's.

PE - Practical - Training



Principles of Training

• Principles of Training (SPORT)

Specificity - This is all about making sure that training needs are relevant to an individual's sport, activity or fitness goals. For example, a marathon runner would make sure that their training helped to increase levels of cardiovascular endurance, while a weightlifter is more likely to will

• Applying specificity to your training ensures that the appropriate muscles and energy systems are used in the most effective way to achieve adaptations, and that these adaptations help to achieve the individual's specific fitness goals.

Progression- This principle can be closely linked to overload and it is all about gradually increasing the level of overload that you include in a fitness programme. This avoids 'plateaus' where performance stays the same.

 When you are training, it is important to progress and increase your efforts gradually – this gives your body a chance to adjust to the demands you are putting on it. It's also important to get the balance right – if you don't change your training levels at all or you do it too slowly, then progression will not happen; however, you must also make sure you don't push your body too hard or too quickly, as this can lead to injury or illness.

Overload - This is when you challenge your body beyond its current limit when training. This is gained by increasing (FITT). When this happens, the body must adapt in response to this and increase performance

 If a person continually performs the same exercise, at the same level of intensity for the same length of time/frequency, then this will not result in any improvements/adaptations. If the person begins to increase the intensity, frequency or duration of their exercise, overload is introduced to challenge the body and it will then adapt to become fitter in order to meet the challenge.

Reversibility- This is the opposite to progression. Basically, if you reduce training levels too much or stop training altogether, then all of the positive effects that you have achieved can be lost. This is sometimes referred to as 'detraining'.

• Fitness adaptations can reverse very quickly – for example, after just a couple of weeks of detraining, you may start to notice reduced fitness levels!

Tedium - Tedium means boredom and the focus of this principle is to incorporate a variety of training methods to prevent boredom and lack of motivation in training.

• Adding variety to the training programme can also help to avoid overworking certain muscles, allowing them to rest and recover while other parts of the body are exercised.

• Principles of Overload (FITT)

Frequency – How often you train over a set period of time

• For example, the number of training sessions that are carried out per week).

Intensity – How hard you work during a training session. It's important to get the level of intensity right –



 If you don't work hard enough, no significant adaptations will occur; however, if you train too hard, then you may not be able to exercise for as long (duration) or as often (frequency) as you want to, and it can also lead to a risk of injury.

Time –How long you train for/the duration of each training session. This principle is closely linked to intensity –

• *if you are working at high intensity levels, then the length of time spent exercising may be shorter; however, low intensity exercise will need to be performed for longer durations for any benefits to be gained.*

Type -This is all about using the right method of training to achieve the desired fitness goals. The chosen method should also suit individual needs – for example, high impact/high intensity exercise would not be suitable for overweight individuals who are new to exercise.

• When choosing methods of training, the specificity principle should be considered – by establishing the specific component of fitness/sports performance that needs to be improved, it becomes easier to identify the most suitable training method(s).

PE - Practical - Health & Fitness



Health has been defined by the World Health Organisation as:

"A state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity."

Physical Fitness means having the ability to perform an activity to the required level (this could be a sport, occupation, etc).

There is a clear link between health and fitness, it is also important to remember that a person can be healthy and unfit, and also fit and unhealthy eg

- You can be fit, but not physically healthy a person could have a cold, but still be fit enough to play a football match
- You can be fit, but not mentally healthy a person may suffer from depression, but goes to the gym regularly
- You can be healthy, but not fit a person could be free from illness, but not be fit enough to take part in fitness activities

Health Related Components of Fitness

<u>Cardiovascular Endurance</u> – "being able to exercise the whole body for long periods of time". Eg, in sports such as long distance running and cycling, triathlon events and football. The heart and lungs need to be able to keep supplying oxygen to the body (through the bloodstream) in order to give the body the energy it needs throughout the exercise activity

<u>Muscular Strength</u> "the amount of force that can be generated by a muscle or muscle group" Muscular strength is divided into three areas:

- 1. **Explosive strength** this is the force that can be generated with one quick and powerful movement, as the muscle contracts at high speed (eg throwing a ball)
- 2. Dynamic strength this is the force that can be repeatedly generated by a muscle, as it moves and contracts (eg when performing weight lifting repetitions).
- **3. Static strength** this is when the muscles contract and hold one position without changing length (eg when holding a heavy object or performing a statics plank).

<u>Muscular Endurance</u> "A muscle or muscle group being able to continue performing/contracting over a set period of time and against resistance, without becoming tired" eg, a swimmer needs muscular endurance in the upper body so that they are able to constantly use their arms and shoulders for the duration of a race. <u>Body Composition</u> " the percentage of fat, muscle and bone that makes up your body weight". Having the right body composition is important for eg, a rugby player will need to have a very different body composition to a marathon runner. **Flexibility** " the amount of movement that can be achieved in all joints of the body".

- **1. Static flexibility** involves holding part of the body still, at its full range of movement (a gymnast holding a balance on the beam).
- **2. Dynamic** uses the full range of movement across a joint, and a fast action is performed but not held (a high jumper arching their back over the bar)

Skill Related Components of Fitness

<u>Agility</u> " the ability to quickly move/change the direction or position of your body, in a controlled way". To move and change direction quickly is important in sports such as football, tennis and basketball.

Balance " the ability to maintain your centre of mass over a base of support". This is demonstrated when a person is still (static balance) or when they are moving (dynamic balance). Eg, a gymnast performing a handstand would require static balance, while a footballer running while dribbling the ball would require dynamic balance **Coordination** "is the ability to control two or more body parts at the same time particularly during physical activity" Eg:, having good hand-eye coordination means that you are able to coordinate eye movement with hand movement in a controlled way – this skill is used when catching a ball, using a racket, etc.

<u>**Power**</u>" is the ability to use strength at speed, usually in an explosive movement" (for example, jumping, sprinting, throwing, etc). This is done by combining maximum speed with maximum strength.

<u>Reaction time</u> "the time it takes for the body, or part of the body, to respond to a stimulus". The speed of response can be affected by the situation

- Simple situations here, there is only one response so it should not take a long time to react. Eg a sprinter reacting to the starter's gun
- Complex situations here there is a choice to be made so more time is needed in order to evaluate the situation and choose a response. For example, a tennis player deciding which shot to play in a match.

Speed "the ability to perform a movement or cover a distance as quickly as possible.

- Accelerative Speed (used in sprints up to 30 metres)
- Pure Speed (this is used in sprints up to 60 metres)
- **Speed Endurance** (this is used when sprinting with short recovery periods in-between such as in team games and racket sports).



PE - Practical - Fitness Testing



Fitness Testing

Introduction

•When you are preparing and planning for health and fitness, it is useful to be able to test and measure various components of fitness. By measuring fitness at the start of an exercise programme, it enables you to set meaningful goals for improvements.

•You always gain a score for the test completed that you can then relate to normative tables to see if you are average / good./ Excellent etc for your age group and gender. Health Related Components of Fitness tests

Cardiovascular Endurance -

Multistage, This test involves carrying out a series of 20-metre shuttle runs in time with an electronic bleep that speeds up every minute (each minute represents one level of the test)

Muscular Strength -

Hand dynamometer. this test involves squeezing a handheld dynamometer as hard as possible for 5 seconds at a time – it is used to test grip strength. The test can be repeated three times, with a minute of rest allowed between each attemp

Muscular Endurance -

- **Press ups**, This test requires the performer to do as many press ups as possible in 60 seconds.
- **sit ups,** This test requires the performer to do as many sit-ups as possible in 30 seconds.

Body Composition -

• BMI Test (body mass index)

1. Measure the weight of the person in kilograms (kg).

2. Measure the height of the person in metres (m).

- 3. Multiply the height by itself and then divide the weight by that total
- 4. This figure is then compared against the normative tables.
- **Hip to waist ratio test** This ratio is calculated as waist measurement divided by hip measurement. For example, a person with a 64cm waist and 97cm hips will have a waist-to-hip ratio of approximately 0.66.

<u>Flexibility</u> –

Sit and reach,

Here he performer removes their shoes and sits on the floor with their legs straight out in front of them. Their feet are placed flat against a box, with both knees flat against the floor. The performer puts one hand on top of the other and slowly reaches forward

Skill Related Components of Fitness tests

<u>Agility</u>

Illinois agility run. This test uses a course of cones set out in a particular layout. At the beginning of the test, the performer lies face down on the ground at the starting line with their hands by their shoulders. When the start command is given, the performer must get up onto their feet as quickly as possible and run around the course of cones to the finishing line.

<u>Speed</u>

. 30m sprint. The performer will get into a sprint start position. The performer then sprints for 30 metres and the time it takes them is recorded.

Coordination -

Wall toss test. The performer will stand 2 metres away from a smooth wall. When the test starts, the stopwatch is started. The performer then begins to throw the tennis ball against the wall – first, throwing it with their right hand and catching it with their left, then throwing the ball with their left hand and catching it in their right. This carries on for 30 seconds

Power –

Vertical jump test

- the performer holds a piece of chalk and stands by a wall.
- Keeping both feet on the ground, the performer reaches up as high as possible and marks the wall with the chalk. This reach distance is recorded.
- Then, the performer jumps up as high as possible and marks the wall again with chalk
- Finally, the difference between the standing reach distance and the jump distance is recorded.

<u>Balance –</u>

Stork Stand. It is carried out as follows:

- The performer begins by standing comfortably on both feet and hands on their hips.
- Raise right leg and place the sole of the right foot against the side of the left kneecap.
- When the test begins, the performer will stand on tiptoes. At this point, the stopwatch is started. The performer holds their position for as long as they can
- The test is then repeated raising the left leg this time.

<u>Reaction Time – Ruler drop test</u> The performer will stand with their dominant arm stretched out in front of them with the assistant will hold the ruler between the performer's index finger and thumb on their outstretched arm. The assistant drops the rule and the performer must catch it in between their index finger and thumb as quickly as possible. The distance between the bottom of the rule (0cm) and the top of the performer's thumb where the ruler has been caught is measured

Photography - Photoshop





Photography - Key Words



1. Pholography Vocabulary

Mood

Calm

Fearful

Jovful

Sad

Connectives However Although On the other hand Whereas Similarly Furthermore In addition Additionally It seems

Technique Collaged Emotive Digital Edited Exciting Lavers Mixed media Humorous Stop frame Peaceful Sewn Provoking Transfer

Colour Light Bright Balanced Bright Contrasting Dull Dark Dull Harsh Limited Highlight Muted Natural Rich Soft Saturation Strong Shadow Subtle Vibrant Black & White

Composition Background

Balanced Blurred Centred Depth /of field Foreground Horizon Juxtaposed Rule of Thirds Perspective Strong

3. How to evaluate your work

- 1. How did you take your photograph? How did you set up your shot/ control your background/lighting? Why?
- 2. Technical comments- depth of field? Rule of thirds? What can you tell me?
- 3. How did you edit your photograph? Why?
- 4. How does your work link to the photographer / theme?
- 5. What are your opinions of your work? Is your end result successful? Why?
- 6. How could you improve your work? Bonusdo this!
- 7. Did you enjoy your shoot? Why?



Artist research and how the artist fits the theme, explore, annotate, opinions.



Linking techniques to artists and themes, experimenting with a range of media and processes.



Your ideas, plans, explanations, annotations, photographs linking together and to a theme and artists.



Personal response, final pieces & body of work, presentation, technical ability.

2. Pholography key Words

- 1. Exposure: How light or dark an image is. Can be described hen too much or too little light is in your photo
- 2. Highlight/ shadow: Light and shadow in your photo can be created and controlled with artificial light (lamps or flash) or natural light (sun)
- 3. Contrast: the difference between the darkest and lightest area in your photograph (high contrast = strong colours- punchy, Low contrast = grey/foggy)
- Focal Point: The part of the photograph that the eye is immediately drawn to 4.
- 5. Composition: To arrangement of the subject matter and how they relate to one another within the photograph
- 6. Portraiture: a photograph of a person or group of people that captures the personality of the subject by using effective lighting, backdrops, and poses
- 7. Landscape: shows spaces within the world. Landscape photographs typically capture nature but can also focus on the man-made features of the land
- 8. Still Life: focuses on inanimate objects; manmade (clothing, technology...) and natural (food, shells...) Flay lay photography is a modern take on still life
- 9. Close up: a photograph that shows a lot of detail because it is taken very near to the subject. Macro is where small items are photographed larger than life
- 10. Crop: To select an area of an image and remove surrounding area
- 11. Perspective: The position or angle of the shot in relation to object being photographed- this is usually done looking through the viewfinder before you take your photo but can also be adjusted after using the crop feature of Photoshop
- 12. Forced Perspective: A technique that employs optical illusion to make an object appear bigger/smaller/closer/further away than it actually is
- 13. Focus: Areas of an image may be in focus (clear and sharp) and some areas may be out of focus (blurry and difficult to see or make out)
- 14. Depth of field: How much of the image is in focus. It can be described using a scale of two terms- shallow/small and deep/large
- 15. Rule of thirds: A technique used to create a successful composition. The rule states that the focal point should not be dead centre in the image but either one third from the top, bottom or from one side of the image ie, in one of the intersecting points. In landscapes, the horizon line should fall on one of the horizontal grid lines

Photography - Research



1. Tien Min Liao

Tien-Min Liao was born and raised in Taipei, Taiwan. After graduating from National Chengchi University in Taiwan with a BA degree in advertising. In this experiment she drew shapes with ink onto her hands, manipulating her gestures into the corresponding shapes to signify the letters of the alphabet.



2. John Hilliard

John Hilliard is an English conceptual artist. Hilliard's ongoing body of work addresses the quality of photography: its uncertainty as a representational device and its status within the arts. Hilliard demonstrates how the way we understand a photographic image may be influenced and changed by the way it has been technically created, edited by the artist, and presented in the gallery.



3. Glinhachu

Slinkachu is a London-based street installation and photographic artist. His work involves remodelling and painting of miniature model train set characters, which are then placed on the street. The titles given aim to reflect the loneliness and melancholy of living in a big city but along side this there is always some humour in the work.



4. Zev Hoover

Zev Hoover (born 1999), from Natick, Massachusetts. Hoover creates work about a 'miniature world'. In his fantastical photos people (usually himself) are digitally shrunken. The process involves capturing the background image first, shrinking photos of people in similar lighting, manipulating the images in Photoshop and editing the colour scheme so that it all matches.



5. Gandy Choglund

Sandy Skoglund is an American photographer and installation artist. Skoglund creates surrealist images by building elaborate sets, furnishing them with carefully selected coloured furniture and other objects. The works are characterized by an overwhelming amount of one object and either bright, contrasting colours or a monochromatic colour scheme.



6. Yulia Yahushova

Yulia Yakushova is a Russian creative director living and working in New York. 'Face your pockets' is a body of work featuring a scanned image of part of the owners face alongside the objects from their pockets or handbags. The odds and ends that people possess often show what is important to them as a person.



7. Tom Hussey

Tom Hussey is an American photographer specialising in commercial advertising and lifestyle photography. 'Reflections of the Past' was used by a healthcare company in a marketing campaign for the treatment of Alzheimer's disease. The work features elderly models staring at reflections of their former selves.



8. Research prompls

- 1. Brief background (who, what, whereno Google copy and paste)
- 2. Describe the composition of the photo
- 3. Describe the lighting
- What technical elements can you tell me?
- (rule of thirds / depth of field)
- 5. How do you think the photograph was taken? Make some guesses
- 6. What do you like most about the photo? Why?
- 7. How does the work fit with your current topic?
- 8. What ideas does the work give you?

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM



Year 9 Knowledge Organizer Summer Term

<u>What is Morality?</u> Moral issues are those which people often feel they can't agree on and often have strong views about. We looked at corporal punishment, slavery and the Charlie Gard case.

It is assumed that slavery is wrong now but in the past people didn't believe that. This is completely wrong. Slavery has always been wrong because it breaks fundamental religious laws (agape and 'love thy neighbour'). Many abolitionists in the early days were very devout Christians who recognized this.

It isn't possible to look at a picture like this and not realize how wrong it is. People in the past ignored how wrong it was or they were uneducated.





Essentially morality is based around the Parable of the Good Samaritan when JC is asked by someone '<u>who is my neighbour</u>'. The parable gives a perfect example because it shows two feuding tribes and how the man from one tribe helped another. Two religious men who refused to stop and help the man were not religious in the true sense. This shows that your neighbour is all human beings. It doesn't matter if you know them or have never met, if you are the same religion, ethnicity, colour etc. it all comes down to being a human being and not allowing another human being to suffer. Therefore slavery was always wrong.



The Golden Rule also is applicable here. 'do unto others as you would have them do to you' exemplifies why certain moral ideas are acceptable or unacceptable. Slavery is morally unacceptable because nobody would want to be treated in that way themselves. If you don't want it to happen to you, you shouldn't do it to anyone else.



What is agape? How does it apply to slavery? If it's the highest form of love according to the Bible, what does this say about how human beings should behave?

The Charlie Gard case is a different. Whilst it is a moral issue and there are a number of factors to consider; financial implications of keeping him alive, what the parents want contrasted with the doctors as well as what you imagine Charlie to want. It is different to slavery in that some would want him to die and some wouldn't. Ultimately this is one of those cases where nobody will agree.



Catholics would want Charlie to be kept alive although they would allow switching off life support



Protestants would be similar.

C OF ENGLAND

Muslims are likely to agree to an extent although some might argue that only Allah can end life.



Year 9 Knowledge Organizer Summer Term First murder was that involving Cain and Abel (the children of Adam and Eve). Cain gave grain to God as an offering and Abel gave the finest lamb. Cain became jealous and killed Abel in a fit of rage. God told him 'But if you do not do what is right, anger is sin crouching at your door; it desires to have you, but you must rule over it.". These are instructions for how to live a good life and avoid falling into the trap of terrific anger (wrath) which can take you over and cause you to murder.

Murder is <u>'a deliberate and unlawful killing of a</u> human being'. The deliberate rules out manslaughter and the unlawful allows room for capital punishment or war.



- People murder for the same reasons in every country, in virtually every case;
- 1. <u>Jealousy</u>; somebody has something you don't want them to have. Often to do with broken relationships when one partner can't accept the other has moved on.
- <u>Opportunity</u>: a person realizes they have a chance to get away with murder while obtaining something else (often monetary gain)
- 3. <u>Anger</u>; wrath, when you are unable to control your temper. Men more prone to this than women.
- 4. <u>Loss of control</u>; linked heavily with the previous although allows for drug/alcohol influence.
- 5. <u>Revenge</u>: somebody has done something to me so I will do something back to them.





The Mary Bell and 'let him have it' case were shocking at the time but when you look at them perhaps they aren't. Mary Bell had a traumatic upbringing with abuse at every turn. Derek Bentley was a vulnerable adult who was taken advantage of. Each case displays psychology of crime and how much parents have an influence over what we are and what we become.


RE - Part 3



Year 9 Knowledge Organizer Summer Term

Knife crime is on the rise in Britain and there are lots of headlines stating this. However, if you look closely at the stats they're not quite as horrific as you think. The population of Britain has increased a lot which allows for this supposed increase.

Explanations for the increase in knife crime in London;



9. Permanent exclusions from school.

Death Penalty is when the state kills you for a crime you have committed in that country. Some countries have very strict rules; technically atheism is punishable by death in Iran. Generally the death penalty is there for murder and the most serious types of crime.

Before allowing death penalty the state will generally look for it to meet the following criteria;

<u>It shouldn't inflict pain</u> <u>It should be reasonably priced</u> <u>It should be easy to instigate</u>







<u>Method of</u> <u>execution</u>	<u>ls it cheap?</u>	Is it easy to use?	<u>Is it humane?</u>
Hanging	Relatively, hangman's salary is the most expensive part.	No. Many years training to be a good hangman; weight/height etc. all to be calculated.	It's quick but it is seen as barbaric today. If done properly it is 'good' if not it's an awful death being strangled.
Firing Squad	Not particularly as you have to pay all the members of the forces.	Yes, as long as one person hits the target.	Relatively. Technically no one knows who the 'killer' is as the live bullet isn't revealed and the others have blanks. Stressful for the person being shot
Lethal Injection	No, the injections cost a lot of money.	No, doctors should administer injections but they often refuse to do capital punishment so prison warden does it.	Possibly. It is supposed to hurt although it's supposed to be quick.
Electric Chair	No, very expensive to build and maintain.	Possibly. Sponge soaked in water should be on the head	No, doesn't always work quickly, sometimes the sponge is 'forgotten'

Science - Biology - Ecosystems



Section 1 – Communities							
organism	single organism						
population	all members of the same species 🧊						
community	2 or more populations in the same habitat						
ecosystem	interaction of community with non-living part of environment						
habitat	where an organism lives						
interdependence	each species depends on others for food, shelter, pollination and seed dispersal. Removal of a species affects the whole community						
stable community all species and environmental factors are in balance s population sizes remain fairly constant							

Competition:

Plants	Animals
light, space, water and minerals from soil	food, mates and territory

Section 2 – Biotic and abiotic factors

Biotic (living) factors	Abiotic (non-living) factors
availability of food	light intensity
new predators 🗸 🗸 🗸	temperature
new pathogens	moisture levels
one species outcompeting another	soil pH and mineral content
	wind intensity and direction
	carbon dioxide levels (plants)
	oxygen levels (aquatic animals)

Section 3 – Ad Plants and ani	146	
structural	physical feature	771
behavioural behaviour that gives an advantage		1. m
functional	process that allows the organism to compete	

Extremophiles are organisms that live in very extreme conditions such as high temperature, high pressure or high salt concentrations conditions. Bacteria that live in deep sea vents are known as extremophiles.

Section 4 – Ecosystems

Photosynthetic organisms (normally green plant or alga) are the producers of all biomass on Earth.

Feeding relationships are shown by food chains. Food chains can be linked to form food webs. The arrow shows the direction of energy flow.

- Producers are plants/alga
- Primary consumers eat producers
- Secondary consumers eat primary consumers
- Tertiary consumers eat secondary consumers

Animals that are eaten by other animals are called *prey* and the animals that kill and eat other animals are called *predators*.

In a stable community the numbers of prey and predators rise and fall in cycles.







Science - Chemistry - Chemical Reactions



Products

Catalysed reaction

Reactants

Introduction to rate of chemical reaction

Section 1 – Calculating rate

The rate of a chemical reaction can be found by measuring the quantity of a reactant used or a product formed over a given time:

mean rate= quantity of reactant used OR product formed

time taken

Units: reactant or product can be measured in g for mass and volume is measured in cm^3 . Units for rate may be given as g/s or cm^3/s .



Section 2 – Factors affecting rate of reaction

Collision Theory states that chemical reactions can only occur when particles collide with sufficient energy. The minimum energy needed for a reaction to occur is called the activation energy.

Increasing concentration, pressure and surface area of reactants increases the number of collisions that can occur and so the rate increases.

Increasing temperature increases number of collisions and the energy of the collisions. This increases the rate.

Adding a catalyst also increases the rate of reaction.



Section 3 – Catalysts

Catalysts speed up a chemical reaction without being used up itself. Catalysts are not included in the chemical equation. They provide a different pathway with a lower activation biological Enzymes eneray. are catalysts.

Reaction profiles can be drawn to show this.

 $8x24 = 192 \text{ cm}^2$



Low temperature

YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

Science - Physics - Electricity Circuits





Section 2 – Definitions

Current – the flow of charge per second in a circuit, measured in Amps, A by an ammeter, represented by I. To measure current, ammeters must be placed in a circuit (in series)

Potential Difference – Energy per unit charge. Measured in volts, V by a voltmeter, represented by V. To measure potential difference, voltmeters must be placed across a component (in parallel)

Resistance – the measure of how difficult it is for current to flow. Measured in ohms, Ω , represented by R. Can be worked out from the current and potential difference.

Section 8 – Required Practical



Aim: to find out the effect on resistance in a circuit when changing the length of wire.

- 1. Set up equipment as shown
- 2. Record potential difference and current when wire is 10cm, 20cm, 30cm, 40cm and 50cm long.
- 3. Work out resistance by R=V/I
- 4. Plot graph of results

Science - Physics - Forces



Y9 Forces

Section 1 – Scalar and Vector **Ouantities**

A scalar quantity only has a magnitude. E.g. mass, speed, distance

A vector quantity has a magnitude and a direction. E.g. velocity, acceleration, displacement

Section 2 - Contact and Noncontact forces

Contact forces are forces that act between two objects that are physically touching each other.

Examples:

Reaction force, tension, air resistance and friction



Non-contact forces are forces that act between two objects that are not physically touching each other.

Examples: Magnetic, electrostatic and gravtiational



Mass: The amount of 'stuff' in an object measured in kilograms. Weight: The force acting on an object due to gravity, measured in newton's.

Section 5 – Work Done

Section 3 – Resultant forces

Work is done when a force causes an object to move. Work done is a type of energy and is measured in joules or newton metres. One joule of work is done when a force of one newton causes a displacement of one metre, so 1J =1Nm

Section 7 – Hooke's Law

Extension happens when an object increases in length, and compression happens when it decreases in length. The extension of an elastic object, such as a spring, is described by Hooke's law: force = spring constant × extension



2 forces acting in the opposite direction - take the smaller force away from the larger force. 5N right – 3N left = 2N right

Section 6 – Free body diagrams (HT only)

5 N

A free body diagram models the forces acting on an object. The object or 'body' is usually shown as a box or a dot. The forces are shown as thin arrows pointing away from the centre of the box or dot.



Section 8 – Hooke's Law Required Practical

Press No.

1.Secure a clamp stand to the bench using a Gclamp or a large mass on the base.

2.Use bosses to attach two clamps to the clamp stand.

3.Attach the spring to the top clamp, and a ruler to the bottom clamp.

4. Adjust the ruler so that it is vertical, and with its zero level with the top of the spring. 5. Measure and record the unloaded length of

the spring.

6.Hang a 100 g slotted mass carrier - weight 0.98 newtons (N) - from the spring. Measure and record the new length of the spring. 7.Add a 100 g slotted mass to the carrier. Measure and record the new length of the spring.

8.Repeat step 7 until you have added a total of 1,000 g.

Weight = mass x gravity. WooFeD

G



The resultant force is a single force that has the same effect as two or more forces acting together. Arrows represent size and direction of force.

Weight (NE)

late (ba)

Previty (74/Kg)

Work done = force x distance



When the limit of proportionality is passed in an elastic object it becomes permanently deformed. This is called inelastic deformation

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Spanish Beginner - Mi Gente 1



Spanish Y9 - Mi gente (1)				¿Qué te gusta leer?		What do you like to read?	
¿Qué aplicaciones usas?		What apps do you use?		Los blogs	Blogs	Cada día	Every day
	Luca for	Varyidaas	To watch videos	Los tebeos	Comics	Todos los días	Every day
USO para	Tuse for	vervideos	io watch videos	Los periódicos	Newspapers	A menudo	Often
Ver mis series favoritas	To watch my favourite series	Es/no es	It is/ it is not	Las revistas	Magazines	Generalmente	Generally
Organizar las	To organise days	Los redes sociales	Social media	Las poesías	Poems	De vez en cuando	From time to time
salidas con amigos	out with friends			Las novelas de	Science fiction	Una vez a la	Once a week
Controlar mi	To control my	Peligroso	Dangerous	ciencia ficción	novels	semana	
actividad física	physial activity			Las novelas de	Romace novels	Dos veces al mes	Twice a month
Contactar con mi	To be in contact	Rápido	Fast	dilioi	Diagraphias		Ones a vest
Tamilia	with my family			Las Diografias	Biographies	Un vez al ano	Once a year
Chatear con mis	To chat with my	Un canal de	A way of	Leo	l read	Nunca	Never
	fuicuada						
amigos	friends	comunicación	communication	La fa	amilia	Fa	mily
amigos Es buena para	friends It is good for	comunicación Útil	communication Useful	La fa El padre	amilia Dad	Fa El tío	mily Uncle
amigos Es buena para Es mala para	friends It is good for It is bad for	comunicación Útil Gratis	communication Useful Free	La fa El padre La madre	Dad Mum	Fa El tío La tía	mily Uncle Aunt
amigos Es buena para Es mala para Buscar música	friends It is good for It is bad for To find music	comunicación Útil Gratis Fácil de usar	communication Useful Free Easy to use	La fa El padre La madre El padrastro	Dad Dad Mum Step-dad	Fa El tío La tía El primo	mily Uncle Aunt Cousin (boy)
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amigos Es buena para Es mala para Buscar música Descargar música	friends It is good for It is bad for To find music To download music	comunicación Útil Gratis Fácil de usar Una pérdida de tiempo	communication Useful Free Easy to use A waste of time	La fa El padre La madre El padrastro La madrastra El hermano	Dad Dad Mum Step-dad Step-mum Brother	Fa El tío La tía El primo La prima El sobrino	mily Uncle Aunt Cousin (boy) Cousin (girl) Nephew
amigos Es buena para Es mala para Buscar música Descargar música Pasar el tiempo	friends It is good for It is bad for To find music To download music To pass time	comunicación Útil Gratis Fácil de usar Una pérdida de tiempo Soy adicto a	communication Useful Free Easy to use A waste of time I am addicted to	La fa El padre La madre El padrastro La madrastra El hermano La hermana	Dad Dad Mum Step-dad Step-mum Brother Sister	Fa El tío La tía El primo La prima El sobrino La sobrina	mily Uncle Aunt Cousin (boy) Cousin (girl) Nephew Neice
amigos Es buena para Es mala para Buscar música Descargar música Pasar el tiempo Sacar fotos	friends It is good for It is bad for To find music To download music To pass time To take photos	comunicación Útil Gratis Fácil de usar Una pérdida de tiempo Soy adicto a Es adicto a	communication Useful Free Easy to use A waste of time I am addicted to He/she is addicted	La fa El padre La madre El padrastro La madrastra El hermano La hermana El hermanastro	milia Dad Mum Step-dad Step-mum Brother Sister Step-brother	Fa El tío La tía El primo La prima El sobrino La sobrina El marido	mily Uncle Aunt Cousin (boy) Cousin (girl) Nephew Neice Husband
amigos Es buena para Es mala para Buscar música Descargar música Pasar el tiempo Sacar fotos Editar fotos	friends It is good for It is bad for To find music To download music To pass time To take photos To edit photos	comunicación Útil Gratis Fácil de usar Una pérdida de tiempo Soy adicto a Es adicto a Estoy enganchado	communication Useful Free Easy to use A waste of time I am addicted to He/she is addicted I am hooked on	La fa El padre La madre El padrastro La madrastra El hermano La hermana El hermanastro La hermanastra	amilia Dad Dad Mum Step-dad Step-mum Brother Sister Step-brother Step-sister	Fa El tío La tía El primo La prima El sobrino La sobrina El marido La mujer	mily Uncle Aunt Cousin (boy) Cousin (girl) Nephew Neice Husband Wife
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YEAR 9 KNOWLEDGE ORGANISER - SUMMER TERM

Spanish - Mi Gente 2



Spanish V9 - Mi gente (2)				¿Cómo es de carácter?		What is he/she like as a person?	
Spanish 77 Mi geni				Es	He/she is	Alegre	Cheerful
¿Cómo es?		What are they like?		Optimista	Optimistic	Molesto	Annoying
Tiene los ojos	He/she has eyes	Barba	Beard	Pesimista	Pessimistic	Ambicioso	Ambitious
Azules	Blue	Bigote	Moustache	Simpático	Kind	Te ayuda	He/she helps you
Verdes	Green	Lleva	He/she wears	Antipático	Mean	Te acepta	He/she accepts you
Marrones	Brown	Gafas	Glasses	Trabajador	Hard working	Te hace reír	Makes you laugh
Grises	Grev	Es	He/she is	Perezoso	Lazy	No te critica	Doesn't critise you
Tiene el nelo	he/she has hair	Alto	Tall	Hablador	Chatty	Te da consejos	Gives you advice
Marana	Dark	Raio	Short	Callado	Quiet	Te escucha	Listens to you
woreno	Dark	Бајо	SHOLL	Feliz	Нарру	Te quiere mucho	He/she loves you
Rubio	Blonde	Delgado	Thin	Triste	Sad	Un buen amigo/a	A good friend
Castaño	Brown	Gordito	Chubby	¿Te llevas bien con tu familia?		Do you get on well with your family?	
Rojo	Red	Gordo	Fat	Me llevo bien	l get on well	Me peleo con	I argue with
Corto	Short	Calvo	Bald	Ме ароуа	He/she helps me	Porque	Because
Largo	Long	No es ni alto ni bajo	Neither tall or short	Me acepta como soy	He/she accepts me as I am	Nos llevamos superbién	We get on superwell
Rizado	Curly	la piel blanca	Fair skin	Nunca me	He/she never	Nos divertimos	We have a good
Liso	Straight	la piel morena	Dark skin	critica	criticises me		time
Ondulado	Wavy	La cara redonda	Round face	Tenemos mucho en	We have a lot in common	Nos peleamos	We argue
Tiene	He/she has	La cara alargada	Oval face	común			
Pecas	Freckles	Los dientes prominentes	Big teeth	Me divierto con	I have a good time with	Me molesta	He/she annoys me



Harrow Way Community School | Harrow Way | Andover | Hampshire | SP10 3RH