Knowledge Organiser

Year 11

Cycle 2

OPTIONS SUBJECTS

Name:

Tutor Group:

What is a Knowledge Organiser and why are they important?

A knowledge organiser is designed to summarise the key information, concepts, and vocabulary for a specific topic or unit of work in each subject. Its purpose is to help students:

- o Understand what they are expected to learn.
- o Make connections between ideas.
- o Retain and recall essential knowledge more effectively.
- o Support independent study and revision

Your Knowledge Organiser contains the essential knowledge that we expect every student to know. Regular use of the Knowledge Organiser helps you to recap, revise and revisit what you have learnt in lessons. This can be part of your homework in some subjects or as independent revision The aim is to help remember this knowledge in the long term and to help strengthen your memory.

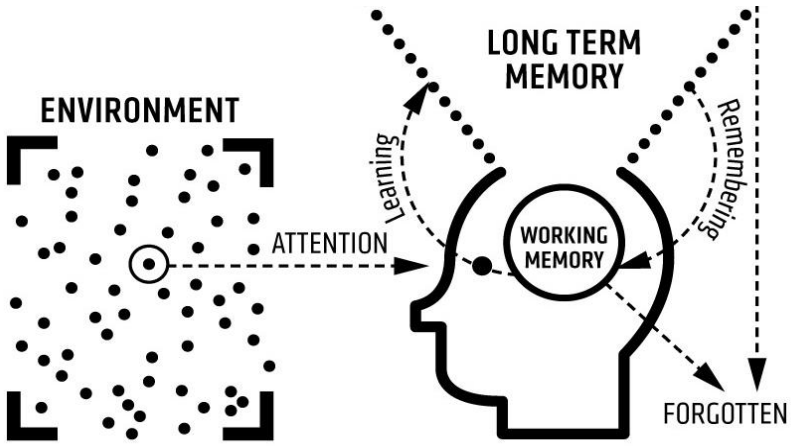
Each cycle there is an assessment in every subject and you will be assessed on the knowledge from your Knowledge Organiser; the more you revisit information the more likely it will be remembered for lessons, assessments and exams.

How we learn anything

We learn by focusing our attention on something. If we are distracted by other things in our environment (eg mobile phones, listening to music) it will affect how much/what we learn.

Information we pay attention to goes into our working memory, but our working memory is not very good and we quickly and easily forget things.

Learning happens when we think about, process or practise doing something so that it is stored in our long-term memory. Even then it can still be forgotten if we do not regularly think about it and go over it. *We remember what we think about*. Using your Knowledge Organiser outside of lessons helps you to remember things in the long-term.



Homework in Year 10-11

The purpose of homework

Homework plays a crucial role in reinforcing what you learn in the classroom, helping you to develop a deeper understanding of the material. It encourages independent learning, time management, and responsibility: skills that are essential for success both in school and in life.

Homework fosters a strong work ethic and a sense of discipline, preparing you for future academic and professional challenges. Homework is not just about completing tasks, it is about building lifelong learning habits. Learning is defined as a change in the long-term memory. You attend 5 hours of lessons per day, which is a lot of new information being taken in. Without additional opportunities to practise remembering, much of that information would be quickly forgotten.

Homework expectations

In Years 10-11 we expect every student to complete around 1 hour of homework a day, 5 days a week. English, Maths and Science will set around 1 per week each and the other GCSE subjects will be around 30 minutes each using the following timetable:

	Monday	Tuesday	Wednesday	Thursday	Friday
Subject 1	Science	Geog/History	Maths	Option Block F	Maths
Subject 2	English	Option Block E	English	Science	Option Block G

Maths and Science homework will be completed on Sparx. All other subjects may be a mixture of Seneca, Knowledge Organiser work and worksheets/tasks. Homework will be recorded on Class Charts to help students and parents keep track of what to do.

Year 11 Options Cycle 2 Knowledge Organiser Contents Page

CREATIVE ARTS
GCSE 3D DESIGN – YEAR 11 MOCK
SIGNWRITING

A. Visual Elements Keywords

Line	Line is the path left by a moving point. A line can be horizontal, diagonal or curved and can also change length.
Shape	A shape is an area enclosed by a line. Shapes can be geometric or irregular.
Form	Form is a three dimensional shape, such as a cube, sphere or cone.
Tone	This refers to the lightness or darkness of something. This could be a shade, or how dark or light a colour appears.
Texture	This is to do with the surface quality of something. There are two types of texture: Actual texture really exists, so you can feel it or touch it; Visual texture is created using marks to represent actual texture.
Pattern	A design that is created by repeating lines, shapes, tones or colours.
Colour	Red, yellow and blue are primary colours, which means they can't be mixed using any other colours.

B. Key Knowledge: Please tick off once you have shown evidence in your work

AO1 - Research

- Visual AND annotated mind map of Ideas / themes / **CONCEPTS**
- Critical Studies (minimum of 3) using the literacy guides
- Extra critical studies as your project develops
- **LINKS** between your work, ideas and the work of others

AO2 - Experimentation with techniques and processes

- A response to every critical study using a different process/ material
- Digital Experiments
- Handmade Experiments
- **LINKS** between your experiments and ideas

AO3 - Recording Ideas

- Your own image collection, idea / concept sketches, diagrams. Digital mock-ups
- Experiments with materials, techniques and processes
- All work annotated using the literacy guide in your booklet
- Written **LINKS** between yours and others work that explain the concept

AO4 - Outcomes

- A statement of intent for your final piece
- Experiments in the style of your final piece ideas
- A final piece that clearly **LINKS** to your research, ideas and experiments
- An evaluation of your final piece

C. Key Knowledge: CONCEPT

Definition – an abstract idea, a plan, intention or invention

To score highly you must have an original concept – an idea that is yours and means something personal to you. In your work you must include research into your concept e.g a project on human emotions may include research into psychology and human nature.

D. Key Knowledge: Expert Modelling

https://www.youtube.com/watch?v=rtZl4s7TSKo
Watch this videos on a students GCSE 3D Design sketchbook. There is lots of inspiration and great ideas on YouTube.
https://www.youtube.com/watch?v=82JpgH7aXD0
Watch this video on how to make 3D letters from acrylic

E. How to find your own DESIGNERS

https://www.sign-vision.co.uk/

Look at this local signwriting company and the range of ideas and processes they use to run a successful business.

https://modocreative.com/

Modo Creative create bespoke signs for their customers in a range of materials and styles

https://www.pinterest.co.uk

Create your own Pinterest account to research and have a daily feed of new and exciting creatives and their work. This will support you in your research and developing an original CONCEPT.

ART & DESIGN Project – YEAR 11. Groups, types and places.
Threshold Concept -#2 Art communicates, in every sense.
#5 Artists play – with ideas, materials and failures
#6 Art engages heads, hands and heart

A. Visual Elements Keywords

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B. Key Knowledge 1: AO1 – TICK OFF ONCE DONE

- ❑ I have created a double page mind map and mood board about my theme
- ❑ I have completed two critical studies with in depth annotation using my booklet for guidance
- ❑ I have completed some further research around my theme
- ❑ I have added in further critical studies as my ideas have developed and changed

AO2 – TICK OFF ONCE DONE

- ❑ I have completed one type of collage work
- ❑ I have experimented with drawing in monoprint
- ❑ I have experimented with colour
- ❑ I have experimented with printmaking, textiles or 3D work
- ❑ I have refined two of the above with a further experiment

AO3 – TICK OFF ONCE DONE

- ❑ I have completed a photoshoot
- ❑ I have drawn from life
- ❑ I have drawn from found images and my own photos
- ❑ I have drawn in pencil – tonal, Pen – mark making and tried continual and blind drawing.

AO4 – TICK OFF ONCE DONE

- ❑ I have written a statement of intent
- ❑ I have sketched and annotated thumbnails of final outcome ideas
- ❑ I have refined work and practiced elements of my final piece
- ❑ I have a final outcome that is meaningful, clearly relates to my developments and shows my best skills.

C. Expert Modelling:


Katie Scott


Kurt Jackson


David Hockney


Michael Wolf


Annette Messager


Alexandra Dillon

What Visual Elements can you see in this work?

E. IDENTIFYING SUCCESSES IN YOUR WORK

- Identify three formal elements in your work and explain why they are important
- Explain how you will refine a process further to develop your practical work
- Identify a gap or weakness you would like to improve.

D. Wider thinking, reading and doing:

- Create a conceptual page
- Do a large abstract experimental piece
- Contact an artist or organisation

A. Key Knowledge: Decorative Techniques

Appliqué	When one shape of fabric is sewn on top of another piece of fabric, it can be attached using hand stitching or zig-zag machine stitch.
Transfer print	An image from the computer is printed onto paper and then transferred to fabric using a heat press.
Tie dye	A resist dye technique-elastic bands are put around fabric and then placed in dye to create interesting patterns where the elastic bands have been.
Reverse appliqué	Fabric is layered and then a design or pattern is cut into the top layers to reveal the fabrics underneath
Hand embroidery	Using a needle and thread to create patterns or pictures or word with stitches
Batik	Another resist dye method, hot wax is used to draw onto fabric, then dye is painted onto the fabric. Where the wax is the dye will not soak in, and when the wax is removed, white lines remain.
Fabric pens/paints/crayons	Dye can be applied straight to fabric by pens, paints or crayons, often they need "fixing" (setting of the dye so it won't come out) this is done with heat.

B. Key Knowledge: Please tick off once you have shown evidence in your work

AO1 Research
- Visual mood board of Ideas
- Written mind map of ideas
- Critical Studies (minimum of 3)
- Extra critical studies as your project develops

AO2- Experimentation with materials
- A response to every critical study using a different process/ material
- Sewing machine skills
- Hand stitching skills
- Drawings in a range of media

AO3- Recording Ideas
- Drawings from life (where possible)
- A photo shoot
- All work annotated using your booklet
- Drawing using the sewing machine

AO4- Outcome
- A statement of intent for your final piece
- Sketches of your final piece ideas
- A final piece that clearly links to your research, ideas and experiments
- An evaluation of your final piece

D. Common key words used in annotation

Contrasting	Fastenings
Composition	Interesting
Details	Intricate
Developed	Manipulated
Embroidery	Piece
Experimented	Textures
Evaluation	Unusual

ART & DESIGN
Project – YEAR 11 TEXTURE & THE NATURAL ENVIRONMENT

C. Expert Modelling:

Jean Paul Gautier

E. Questions for Evaluation

- Which Textile artists have you researched?
- What aspect of their work inspired you?
- How have you responded to their style?
- What techniques have you used?
- Have your sample pieces been successful? What worked well? What could be improved?
- How have you developed your ideas as your project progressed?
- What is your final piece/s? What is the meaning? How does it relate to your starting point?

F. Wider thinking:

Create a page on concept- what is the message behind your work?

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C. Key Knowledge: Artists

Identity
Victoria Villasana
Leslie Gabrielse
Andrea Cryer
Joetta Maue
Pat Kumicich

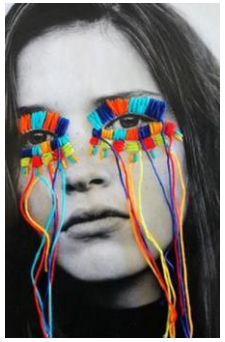
Landscapes
Ana Teresa Barboza
Karen Pleass
Cas Holmes
Bobbi Baugh Studio
Jenny Beasley
Carol Naylor

Transform
Jennifer Collier
Steam Punk
Kim Thittichai
Jacqueline Surdell

GCSE TEXTILES Project – YEAR 11 MOCK
IDENTITY
LANDSCAPES
TRANSFORM

D. Key Knowledge: Expert Modelling

Jennifer Collier



Victoria Villasana

Moy Mackay

E. Questions for Evaluation

Which Textile artists have you researched?

What aspect of their work inspired you?

How have you responded to their style?

What techniques have you used?

Have your sample pieces been successful? What worked well? What could be improved?

How have you developed your ideas as your project progressed?

What is your final piece/s? What is the meaning? How does it relate to your starting point?

Child Development

<table>
<tr><td colspan="3">Unit 1: Patterns of Development This unit aims to develop your knowledge and understanding of child development. You will learn about five different areas of development – physical, cognitive, communication and language, emotional and social – and how these areas are linked. In each of these five areas there are expected patterns of development based on the norms for different ages. These developmental norms are sometimes referred to as milestones. They are useful for several reasons. Early years professionals and health professionals monitor children's progress in achieving these milestones. While it is usual for children to have different rates of progress, it is important for professionals to know when children are showing unusual progress or patterns in their development. This sometimes means that a child needs additional support. Knowing the expected patterns of development and associated milestones for each area of development also helps adults to anticipate the next stage of a child's development in each area. You will investigate how adults in early years settings can support children's development. As part of your course, you will learn about the expected patterns of development, and if you choose to work with children this will help you plan activities and understand why children are doing certain things.</td></tr>
<tr><td>Week 1
(Learning Aim A1)
Growth and development</td><td>Growth
• Key aspects of children's growth are changes to physical size, the skeleton, muscles and the brain
• Children's height, weight and head circumference are measured to monitor growth, ensuring it is consistent with expected patterns, and to highlight potential issues at an early stage
• Children's growth is plotted on centile charts.
• Growth is determined by heredity, hormones, nutrition, sleep, illness and emotional influences.
Development
Child development is defined as the increasing acquisition of skills and knowledge gained by a child.
• Development should be viewed holistically as children acquire skills at varying rates in different areas of development.
• Developmental norms are sometimes called milestones. They have been determined by looking at the data of thousands of children and considering the average or 'typical' milestones. Using these norms or milestones helps to understand the patterns of development.
Development can be broken down into the following five areas:
• Gross motor and fine motor physical development is to do with movement – gross or large movement of limbs, developing locomotion, balance and coordination, and fine manipulative movement of fingers developing hand–eye coordination.
• Cognitive development is the way children develop thought processes, perception, memory, imagination and problem-solving, and are able to increase their knowledge and understanding of their environment
• Communication and language development is the way children communicate and develop speech, including reading and writing.
• Emotional and behavioural development is how children develop feelings and express their emotions through behaviour and includes the development of self-concept and self-esteem.
• Social development includes how children develop friendships with peers and cooperate with others and become aware of role models.</td><td>Key Words
Growth
Centile charts
Heredity
Hormones
Nutrition
Acquisition
Holistically
Developmental norms
Milestones
Gross motor skills
Fine motor skills
Cognitive development
Communication and language development
Emotional development
Self-concept
Self-esteem
Social Development
Role Models</td></tr>
</table>

Week 2 (Learning Aim A2) The links between areas of development and how each area may complement each other	Development should be viewed holistically as there are many ways in which areas of development relate to each other Language development helps children to understand new concepts and also to play with other children. Children with a language delay may become frustrated and this might affect their behaviour and also their ability to play with others. • Physical development helps children move to explore their surroundings, learn from new experiences and develop confidence in their abilities. • Cognitive and language development combine to help children express their thoughts and to develop reading and writing and problem-solving skills. • Emotional development helps children to develop secure attachments, enabling positive social relationships and friendships to evolve • Social development helps children to develop language through playing with others and interacting with adults.	**Key Words** Concepts Problem solving skills Secure attachments
Weeks 3 - 6 (Learning Aim B1) Characteristics of children's development	Knowledge of the usual sequence in physical (gross and fine motor skills), cognitive, communication and language, emotional and social development **Birth up to twelve months** Gross motor development: Newborns are born with reflexes – sucking, rooting, startling, grasping – which help them survive. Movements are uncontrolled and uncoordinated: • at three months able to lift up head and chest when on their stomachs and bring hands together over body • at six months can roll over from back to front • at nine months can sit unsupported and is usually mobile by crawling or rolling, may pull up to stand alone and walk by holding on to furniture • at twelve months pulls up to stand, stands alone, walks holding on to furniture. Fine motor development: • no coordinated movement but newborns will grasp things put into their hands as a reflex action • at three months can watch their hands and hold a rattle for a moment • at six months can reach for a toy and move a toy from one hand to the other • at nine months can use a pincer grasp (index finger and thumb) to grasp objects, can deliberately release objects by dropping them • at twelve months can use pincer grasp to pick up small objects, points using index finger. Cognitive development: • at one month 'freezes' if hears a sound played softly • at three months can recognise familiar routines, alert and follows movement with eyes if objects are close • at six months can explore objects by putting in mouth, recognises voices • at eight or nine months can look for dropped objects and objects that they see being hidden • at twelve months enjoys throwing toys to the ground and watching their descent, learns by trying things out and repeating if successful. This approach to learning is called 'trial and error'. Communication and language development: • at one month can turn head to adult voice, at six weeks begins to coo • at three months smiles when hears a familiar voice • at six months makes short babbling sounds, such as 'da' and 'ba • at nine months understands 'no', vocalises in long strings of babbling • at twelve months knows own name and understands simple instructions. Emotional and social development: • at one month can focus on human faces with interest • at six weeks can smile • at three months enjoys being held and forms indiscriminate attachments • at six months can recognise and respond to emotions in others • from seven to eight months can form specific attachments and show wariness of strangers • from eight months develops specific attachments and imitates actions of others, such as clapping • from eight months experiences separation anxiety from primary carer(s).	

	Twelve months up to three years Gross motor development: • at fifteen months can crawl upstairs and may walk hesitantly • at eighteen months can walk unaided, can walk upstairs with help and can squat to pick up toys • at two years can run, climb onto furniture and use sit-and-ride toys • at two and a half years can kick a large ball and can jump with two feet together from a low step • at three years able to run forwards and backwards, steer and pedal a tricycle, walk upstairs with alternate feet and throw a large ball. Fine motor development: • at fifteen months pincer grasp is precise, uses palmar grasp to hold crayons • at eighteen months can build a tower of three bricks, can feed self with a spoon and scribble using a crayon in palmar grasp • at two years can draw dots and circles, can put on shoes and fasten with Velcro® but not buckles and laces • at two and a half years starts to show a hand preference, can pull down items of clothing and starting to develop tripod grasp • at three years can use tripod grasp, draw a circle, hand preference is established for most tasks. Cognitive development: • at fifteen months explores objects by sight and sound • at eighteen months very curious to explore environment, remembers where things belong • at two years recognises self in mirror, can remember past experiences • at two and a half years recognises self in photographs, with help can complete simple puzzles • at three years understands the difference between past and present, can complete simple puzzles. Communication and language development: • at fifteen months communicates by pointing and vocalising, has up to six words • at eighteen months has around 15 words, able to communicate wishes, understands simple requests • at two years has up to 50 words, able to join words, enjoys looking at books • at two and a half years has around 200 words, starting to use simple sentences, asks questions, uses personal pronouns, plurals and negatives • at three years speech is clear to anyone unfamiliar with child, enjoys books and turns pages. Emotional and social development: • at eighteen months emotionally dependent on parents and key persons, plays alone but enjoys being near adults and siblings, insistent on immediate attention to needs and can copy adult actions • at two years unable to wait for needs to be met, may be distracted from tantrums, plays in parallel with other children but unable to share toys • at two and a half years plays alongside other children and engages in onlooker play, very dependent on adults and jealous of other children gaining attention, responds well to adult attention and praise and has tantrums when frustrated • at three years finds it easier to wait, starting to take turns and share, enjoys being with other children and will comfort another child. **Three years up to five years** Gross motor development: • from three to four years can hop on one foot, walk along a line, aim and throw a ball and kick it with force, ride a tricycle using pedals • from four to five years can run avoiding obstacles, skip with a rope, throw a large ball to partner and catch it. Fine motor development: • from three to four years can button and unbutton clothes, use scissors to cut out simple shapes, draw a person with head, trunk and legs, eat with a knife and fork, thread beads to make a necklace • from four to five years can form letters, write own name and colour in pictures. Cognitive development: • from three to four years can recognise and name primary colours, understands what is meant by 'more', can tell whether an object is heavy or light, arranges objects into categories, makes a connection between people and events • from four to five years can count accurately up to 10, can add two sets of objects together, can match equal sets, understands the need for rules, names the time of day associated with activities.

	Communication and language development: • from three to four years, speech can be easily understood, although some words may be incorrect, uses questions and by four years language is fluent, with some speech immaturities • from four to five years can count accurately up to 10, uses complex sentences with words such as 'because', can talk about what has happened and what might happen, uses language to argue and answer back. Emotional and social development: • from three to four years can cope with separation from primary carer with someone they know, is beginning to play cooperatively and show clear friendship preferences, and plays with others • from four to five years can work out what other people may be thinking, which helps them to negotiate with others, able to understand the need for rules, develops close friendships develop, behaviour mostly cooperative and separates more easily from parents. **Five years up to eight years** Gross motor development: • from five to eight years can hop, skip and jump confidently, can swerve and dodge when running, balance on a beam, ride a bicycle and use roller skates • coordination is more proficient, allowing for tasks that require coordinated movements including improved ball skills, swimming activities, hopscotch. Fine motor development: • from five to eight years can tie and untie shoelaces, and accurately cut out shapes • from six years able to thread a large-eyed needle and sew large stitches, has good control over pencils and paintbrushes, allowing for more detailed drawings and clear handwriting. Cognitive development: • from five to eight years can recognise numerals up to 100, do simple calculations, show simple reasoning and be reasoned with • from seven years can 'conserve' quantities and numbers, complete a simple maze, is starting to tell the time, understands the need for and uses rules. Communication and language development: • from five to eight years uses language to reason and explain ideas, understands and enjoys jokes and riddles • uses more complex sentence structures and asks what, when, who, where, how, why questions • from seven years has mastered the basics of reading and writing. Emotional and social development: • from five to six years starts to compare self with others and becomes more aware of the feelings and needs of others • confidence in self may be shaken by 'failure' • from five to seven years has strong friendships, often of the same gender, can understand that others have different viewpoints than them, can read facial expressions of others accurately and recognise what others might be feeling.

Week 7 (Learning Aim C1) Understand how adults in early years settings can support children's development	Gross motor and fine motor physical development: • meeting children's physical needs by providing a well-ventilated and relaxing sleep area for children to sleep at regular intervals • meeting diet and nutritional needs in accordance with policy and parental wishes • providing opportunities to be outdoors • providing age-appropriate resources and activities that encourage gross and fine motor skills both indoors and outdoors • providing resources and activities that encourage children to touch, feel and explore objects with their senses • providing opportunities for children to meet their physical needs. Cognitive development: • providing objects and games that encourage children to develop their memory and imaginative skills and helping them to think about others • providing age-and stage-appropriate activities and resources that encourage problem-solving skills • providing opportunities for children to visit different places and experience new things • encouraging children to ask questions, helping children to link new experiences to past ones (memory and recall). Communication and language development: • taking time to talk and smiling and maintaining eye contact to encourage listening skills • encouraging speaking and listening skills by using nursery rhymes, picture books, telling stories, reciting rhymes, 'show and tell', and by asking questions such as 'what' 'where' 'who' to encourage speaking • providing role play activities for pretend play • encouraging writing skills by copying their own name and familiar names and words • encouraging creative expression through stories, poetry, dance, drama and making music. Emotional and social development: • encouraging bonding through holding children close, maintaining eye contact, talking in appropriate tone • maintaining proximity as key person, responding to changing behaviour such as clinging, resistance, temper tantrums by helping children express their emotions positively without hurting others • supporting children through appropriate transitions such as moving home, new sibling, change of carer • encouraging confidence and self-esteem, encouraging children to express their feelings through activities and resources, and encouraging children to share and help other peers or other adults • maintaining appropriate proximity to children while allowing them to express themselves freely and safely • encouraging children to develop positive relationships and encouraging children to challenge negative comments and actions from others • helping children to understand their changing emotions and dealing with them positively through discussion or role play • introducing everyday routines to establish security • providing age appropriate play to encourage children to interact with other children, support others and learn to share and take turns • encouraging children to be thoughtful and cooperative with others by praising them and being a positive role model • encouraging children to develop a range of friendships.	**Key Words** Bonding Proximity Transitions

Algorithms

An **algorithm** is a sequence of ordered instructions that are followed step-by-step to solve a problem. This does *not* need to be on a computer.

Decomposition is the breaking down of a complex problem into smaller more manageable problems that are easier to solve.

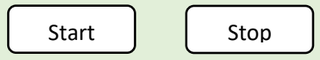
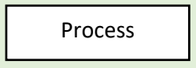
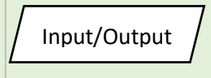
Abstraction allows us to remove unnecessary detail from a problem leaving us with only the relevant parts of a problem thereby making it easier to solve.

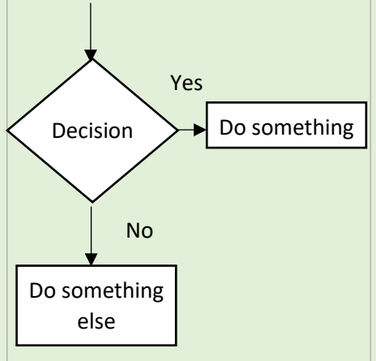
Algorithm Efficiency More than one algorithm can be used to solve the same problem. Normally we use the algorithm that solves the problem in the quickest time with the fewest operations or makes use of the least amount of memory.

Dry run testing is carried out using **trace tables**. The purpose of the trace tables is for the programmer to track the value of the variables and outputs at each step of the program and to track how they change throughout the running of the program.

Flowchart Symbols

We can represent algorithms using flowcharts

Start and Stop 	**Process – An operation that the algorithm performs** 
Connector – Links all the other symbols together 	**Input and Output of data that is read in and written out** 

Decision is the same as a selection (if then … else)
 
	`IF answer is "yes" THEN`
	`  do something`
	`ELSE IF answer is "no"`
	`  do something else`
	`ENDIF`

Pseudocode

We can represent algorithms using pseudocode

	Example	Python equivalent
Variable assignment	a ← 10	`a = 10`
Constant assignment	constant PI ← 3.142	`PI = 3.142`
Input	a ← USERINPUT	`a = input()`
Output	OUTPUT "Bye"	`print("Bye")`

Arithmetic Operators
Add
Multiply
Divide
Subtract
Integer division
Modulus (remainder)
	
	`+`
	`*`
	`/`
	`-`
	`a ← 7 DIV 2`
	`a ← 7 MOD 2`
		
		`+`
		`*`
		`/`
		`-`
		`a= 7 // 2`
		`a = 7 % 2`

Relational Operators
Less than
Greater than
Equal to
Not equal to
Less than or equal to
Greater than or equal to
	
	`<`
	`>`
	`=`
	`≠  or <>`
	`≤`
	`≥`
		
		`<`
		`>`
		`==`
		`!=`
		`<=`
		`>=`

Boolean Operators
AND
OR
NOT
	
	`AND`
	`OR`
	`NOT`
		
		`AND`
		`OR`
		`NOT`

Selection
if ..
	`IF i > 2 THEN`
	`  j ← 10`
	`ENDIF`
		`if i  > 2:`
		`  j=10`

if .. else …	`IF i > 2  THEN`
	`  j ← 10`
	`ELSE`
	`  j ← 3`
	`ENDIF`
		`if i > 2:`
		`  j=10`
		`else:`
		`  j=3`

if … else if … else	`IF i ==2 THEN`
	`  j ← 10`
	`ELSE IF i==3`
	`THEN`
	`  j ← 3`
	`ELSE`
	`  j ← 1`
	`ENDIF`
		`if i ==2:`
		`  j=10`
		`elif i==3:`
		`  j=3`
		`else:`
		`  j=1`

Iteration
While loops
	
	`a ← 1`
	`WHILE a < 4`
	`  OUTPUT a`
	`  a ← a + 1`
	`ENDWHILE`
		
		`while a<4:`
		`  print(a)`
		`  a=a+1`

For loops	`FOR a ← 0 TO 3`
	`  OUTPUT a`
	`ENDFOR`
	`a ← 1`
		`for a in`
		`range(3):`
		`  print(a)`

Repeat loops	`REPEAT`
	`  OUTPUT a`
	`  a ← a + 1`
	`UNTIL a←4`	

Subroutines
procedure
	
	`SUB hello()`
	`  OUTPUT "hello"`
	`ENDSUB`
		
		`def hello():`
		`  print("hello")`

Function (with paramerters and return)	`SUB add(n)`
	`  a ← 0`
	`  FOR a ← 0 TO n`
	`  a ← a + n`
	`  ENDFOR`
	`  RETURN a`
	`ENDSUB`
		`def add(n):`
		`  a=0`
		`  for a in`
		`range(n+1):`
		`  a=a+n`
		`  return a`

Built-in functions Length of array	 LEN(a)	 len(a)
Random integer	RANDOM_INT(0, 9)	import random random.randint(0,9)

Searching Algorithms

Linear Search Algorithm

- The purpose of the linear search algorithm is to find a target item within a list.
- Compares each list item one-by-one against the target until the match has been found and returns the position of the item in the list.
- If all items have been checked and the search item is not in the list then the program will run through to the end of the list and return a suitable message indicating that the item is not in the list.
- The algorithm runs in linear time. If *n* is the length of the list, then at worst the algorithm will make *n* comparisons. At best it will make 1 comparison and on average it will make (*n+1)*/2 comparisons.
- The performance of the algorithm will be improved if the target item is near the start of the list.

Example

Find the position of letter "Z" within the following list. Assume we do not have visibility of the list

Index	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
position								
Value	V	A	S	Z	X	R	T	G

We compare it with the value in index position 0. We find that the value is "V" so we need to move on to the next index position. At index position 1 and 2 we still have not found Z. However, we get to index position 3 and we compare the target with the value and we find that they match, so the algorithm returns the index position and stops.

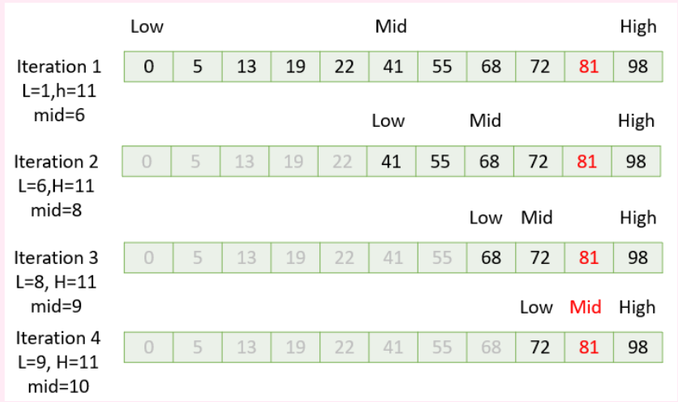
Pseudocode

```
i ← 0
x ← len(listOfItems)
pos ← -1
found ← False
WHILE i < x AND NOT found
 IF listOfItems[i] == itemSearch THEN
  found ← True
  pos ← i + 1
 ENDIF
 i=i+1
ENDWHILE
OUTPUT pos
```

Binary Search Algorithm

- The binary search algorithm works on a sorted list by identifying the middle value in the list and comparing it with the search item.
- If the search item is smaller the mid element becomes the new high value for the search area.
- If the search item is larger the mid element becomes the low value for the search area.
- The keeps repeating until the search item is found.
- When the search item is found the index position of the item is returned.
- At each iteration the search are halved in size consequently this is an efficient algorithm.

Example: Binary search in operation to find 81



Pseudocode

```
low ← 1
high ← LENGTH(arr)
mid ← (low + high) DIV 2
WHILE val ≠ arr[mid]
 IF  arr[mid] < val THEN
  low ← mid
 ELIF arr[mid] > val THEN
  high ← mid
 ENDIF
  mid ← (low + high) DIV 2
  ENDWHILE
OUTPUT mid
```

Linear search versus binary search

	Advantages	**Disadvantages**
Linear Search	• Very simple algorithm and easy to implement • No sorting required • Good for short lists	• slow because it searchers through the whole list • very inefficient for long lists
Binary Search	• much quicker than linear search, because it halves the search zone each step	• The list need to be ordered

Sorting Algorithms

Bubble Sort

- The purpose of sorting algorithms is to order an unordered list. Item can be ordered alphabetically or by number.
- Bubble sort steps through a list and compares pairs of adjacent numbers. The numbers are swapped if they are in the wrong order. For an ascending list if the left number is bigger than the right number the items are swapped otherwise the numbers are not swapped.
- The algorithm repeatedly passes through the list until no more swaps are needed.

Example

Sort the following sequence in ascending order using bubble sort: 5,3,4,1,2.

Pass 1	**5**	**3**	**4**	**1**	**2**	
	3	5	4	1	2	Compare 5 and 3 – swap
	3	4	5	1	2	Compare 5 and 4 – swap
	3	4	1	5	2	Compare 5 and 1 – swap
	3	4	1	2	5	Compare 5 and 2 – swap; end of pass 1
Pass 2	3	4	1	2	5	Compare 3 and 4 – no swap
	3	1	4	2	5	Compare 4 and 1 – swap
	3	1	2	4	5	Compare 4 and 2 – swap
	3	1	2	4	5	Compare 4 and 5 – no swap; end of pass 2
Pass 3	1	3	2	4	5	Compare 3 and 1 – swap
	1	2	3	4	5	Compare 3 and 2 – swap
	1	2	3	4	5	Compare 3 and 4 – no swap
	1	2	3	4	5	Compare 4 and 5 – no swap; end of pass 3
	1	**2**	**3**	**4**	**5**	

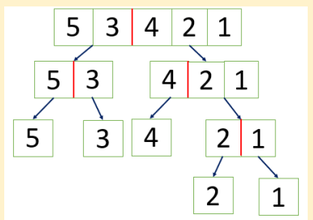
Bubble sort Pseudocode

```
A=[5,3,4,1,2]
sorted ← False
WHILE not sorted
 sorted ← True
 FOR I TO LEN(A)-1:
  IF A[i] > A[i+1]:
   temp ← A[i]
   A[i] ← A[i+1]
   A[i+1] ← temp
   sorted ← False
  ENDIF
 ENDFOR
ENDWHILE
OUTPUT A
```

Merge Sort

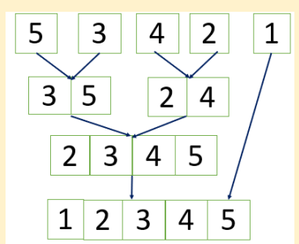
- Merge sort is a type of divide and conquer algorithm.
- There are two steps: divide and combine
- Merge sort works by dividing the unsorted list sublists. It keeps on doing this until there is 1 item in each list.
- Pairs of sublists are combined into an ordered list containing all items in the two sublists. The algorithm keeps going until there is only 1 ordered list remaining.
- Merge sort is a recursive function, that calls itself.

Step 1: Divide



Keep dividing until there is only 1 item in each list

Step2: Combine



1. The first items in the two sublists are compared, and the smallest value is copied to the parent list.
2. The copied item is then removed from the sublist.
3. When there are no items left in one of the sublists the remaining items in the other sublist are them copied in order to the parent list.

Merge sort Versus Bubble sort

	Advantages	**Disadvantages**
Bubble sort	Very simple and robust algorithm	Can be slow particularly for long lists. As the number of items increases the time taken for the algorithm to run increases dramatically.
Merge sort	Much faster than bubble sort especially when the number of elements is large	More complex to understand Step 1: Divide Step 2: Combine

‘DNA’ by Dennis Kelly Knowledge Organiser

CHARACTERS

PHIL	Menacing, Cold, Sinister
JOHN TATE	Controlling, Manipulative, Tyrannical
LEAH	Insecure, Loyal, Insightful
MARK	Cruel, Malicious, Ruthless
JAN	Bullying, Intimidating, Gullible
RICHARD	Insecure, Confident, Sycophant (flatterer)
CATHY	Volatile, Sadistic, Merciless
BRIAN	Nervous, Introverted, Vulnerable
LOU	Unsuspecting, Impressionable, Spineless
DANNY	Ambitious, Fearful, Sceptical
ADAM	Victim, Confused, Scared

Staging

Proxemics	Where a performer stands in relation to other performers & any objects.
Levels	Levels can be used to show status, power, perspective and variation.
Sight lines	Ensures the action is visible to the audience from all angles.
Entrances / Exits	It is important for the audience to understand where the actors have come from and where they are going. This can help put each scene into context.
Movement	Stillness, pace, direction, size, flow, weight, control, orientation of performers.

CONTEXT

Original performance

When?	16th February 2008
Where?	Cottesloe Theatre, National Theatre, London
Why?	Intended for schools and youth groups.
Director	Paul Miller
Designer	Simon Daw (Set, Costume and Video)
Designer	Paule Constable (Lighting)
Stage	‘End on,’ bare stage with back projection
Lights	Blue gels
Location	Contemporary Britain – Street, Field, Wood - anywhere
Sound	Drum & bass for transitions, distant aeroplane when Leah leaves Phil, sea gulls after Richard’s monologue.
Costume	Uniform (in different states) grey, blue, white

PERFORMANCE SKILLS

Vocal

Pitch	How high or low the voice is.
Pace	The rhythm and speed with which words are spoken.
Projection	(or volume) How loud or quiet the voice is.
Pause	Stopping to emphasise a point or provide contrast and variation.
Intonation	The rise and fall of the voice to provide variation and interest.
Tone	How lines are said to convey meaning.
Accent	Used to indicate where are character is from (location) or to show social class or status.
Inflection	The ups and downs of spoken language.
Emphasis (or stress)	Used to place importance on specifically chosen words.
Nuance	Subtle changes in voice to change meaning in a text.

PLOT

Act 1	Street Field Wood	Tension and mystery build as Mark tells Jan that someone is dead. Leah, talking to Phil, admits she is scared. The group meet, led by JT. Mark and Jan outline how they were bullying Adam, until they forced him to walk over a grille and, while having stones thrown at him, fell in. The group assume Adam has been killed. Phil concocts an elaborate plan involving a fictional postman to cover up what they have done. Later, Leah compares humans to bonobos.
Act 2	Street Field Wood	The group find out the police have arrested a postman matching the description of the fictional ‘fat postman with bad teeth.’ This is because Cathy, in an attempt to make the suspect as realistic as possible, found a postman who matched Phil’s description, and contrived to have him pick up Adam’s jumper when she dropped it. The plan has gone wrong and an innocent man has been framed. Brian has been asked to go to the police station to identify the man, but he is scared, so Phil threatens him to make him go.
Act 3	Street Field Wood	Cathy has discovered Adam alive and living in the woods. He has clearly been affected by what has happened to him. In a shocking twist, and to save themselves from having to reveal the truth of the gang’s plotting, Phil takes charge and demonstrates to Cathy how to kill Adam with a plastic bag.
Act 4	Street Field	Jan and Mark and then Richard and Phil in brief conversations about what has happened to the others.

Themes

Gangs / Belonging	The whole group belong to a gang – with different pairings, relationships and friendships. Some gang members leave. Gang leaders change and try to solve the issue of Adam to protect the gang. There is a sense of loyalty and cruelty. The gang are nihilistic – they have rejected all religious and moral principles.
Power/ Status/ Hierarchy	The power continually shifts within the group. There appears to be a clear hierarchical structure within the characters.
Bullying/ Cruelty	Psychological and physical abuse of Adam. Phil’s lack of communication towards Leah is emotional cruelty. John Tate is aggressive and threatening. Other characters are bystanders in the bullying – they allow the events to happen.
Identity	How many of the group members are really being themselves? Which group members are putting on an act to impress others? Which group members follow or copy others? Dennis Kelly states that the characters can be played by males or females – either gender is capable of carrying out the actions within the play.

Physical

Gesture	Used to show how a character feels or expresses their thoughts.
Facial Expression	Shows a character’s response to a situation or reveals their inner feelings & thoughts.
Body language	The way a performer communicates non-verbally.
Posture (or stance)	How a character stands. Could show their age, status or emotional state.
Gait	How the character walks.
Proxemics	How the performer uses stage space. Could show relationships or status.
Focus (eye contact)	Where a character is looking.
Levels	The height of a character/actor.
Movement	How a character moves.

Drama Design Knowledge Organiser

LIGHTING

Considerations: Mood/ Atmosphere, Location, Time, Symbolism, Colour, Effect, Angle, Position

Lantern Type and specials

PAR can	Lights a large area (with an edge). Can produce intense colours.
Profile Spot	Gives a hard-edged spot of light. Highlights a performer or area.
Fresnel	Gives a soft-edged spotlight which enables the lighting of precise areas. Easy to blend.
Barn Door	Four hinged flaps that are fitted in front of a lantern. Can be positioned to block light from reaching certain areas of the stage.
Floodlight	Provides lots of light to a wide area (no edge).
Moving heads	Automated lights that offer flexibility and variation.
Gels	Coloured plastic placed in front of the lantern to alter the colour.
Birdie	A miniature light that is useful for hiding in parts of set.
Gobo	A small metal disc with a pattern or shape cut into it to create a specific shape (when slotted into a Profile Spot lantern).
UV	Ultra violet light causes specially treated materials to look fluorescent on an otherwise blackened stage.
LED	LED stage lights use light-emitting diodes (LEDs) as a light source. LED instruments are an alternative to traditional stage lighting.

Lighting Angles (position / direction)

Backlight	The actors are lit from behind. Can be used to create shadows / silhouettes or obscure the audience's view.
Up-light	Lighting is angled upwards to create tension or suspense.
Down Light	Where the performers are lit from the front.
Side light	Lit from the side. Can indicate another location or give a feeling of mystery.
High Front	Performers are lit from above. Provides a clear and natural effect.

Lighting Techniques

Cross Fade	Similar to a fade, a cross fade occurs when one lighting state fades out whilst the other is gradually faded in.
Cue	The indicator of when the next lighting state should take place (usually a line from one of the performers).
Lighting State	A plan of which lights are being used at any one time.
Snap	Where the lighting changes abruptly from one state to the next.
Fade	Gradually takes in or takes out a lighting state. This could be done quickly or over a more prolonged time period.
Blackout	To remove all (or almost all) light on the performing area, usually done rapidly.
Wash	An even, overall illumination over a large area.
Focus	To aim and adjust a lens so that the light is concentrated at a focal point.
Intensity	A measure of strength of a light source in a particular direction.

SET

Considerations: Space, Materials, Colours, Location, Levels, Symbolism, Time, Entrances/exits

Style	Set design is hugely influenced by the style of the play (naturalistic/ realistic, expressionist, symbolic etc).
Period	The time on history when the play is set.
Colour	Reinforces mood, atmosphere, communicates meaning.
Texture	Support key themes and ideas (a metallic texture will have a different meaning from earthy textures).
Backdrop	A painted cloth hung at the back of a theatre stage as part of the scenery.
Projection	Used to create a set, or show film or images. Can have a distancing or dreamlike effect.
Entrances/ Exits	Position of entrances / exits, and how characters use them, can be significant.
Cyclorama	Curved, stretched cloth around the back of the stage which gives the impression of sky or extensive space.
Levels	Levels give a stage more visual interest, allowing different characters to communicate different status.

SOUND

Considerations: Mood/ Atmosphere, Location, Time, Symbolism, Volume, Tone, Sound effects

Live Music / Sound	Live music / sound is where the performers or musicians generate the music /sound on stage.
Recorded Sound	Sounds that have been pre-recorded and are then played through speakers/a PA system.
Pitch	This relates to whether a sound is high or low.
Volume	This relates to whether a sound is loud or quiet.
Sound Effects	Can be pre-recorded or played live. Can reflect what is happening on or off stage. Can be naturalistic or abstract depending on the style of the performance.
Direction	Speakers and musicians can be positioned anywhere within the space and create impact on an audience.

PROPS AND STAGE FURNITURE

Props	Any moveable items that the performer uses on stage - does not include costume or scenery.
Stage furniture	Parts of the set that performers can move during the performance. Can communicate location, time period or style, or the status of the characters.
Personal props	Props that are used for individual characters. Could help find nuances in the character.

COSTUME

Considerations: Age, Status, Personality, Economic Climate, Symbolism, Practical

Style	Concept of play and overall appearance.
Period	Time the play is set.
Naturalistic	Accurate to the period.
Symbolic	Item / colour signals to the audience.
Texture	The feel of the fabric.
Representational	Single item that indicates a particular character.
Breakdown	Make a costume appear shabby or dirty.
Material	Cotton, wool, velvet, leather, metal, lace.

Colour meanings	
Red	*Passion, desire, love, war, danger*
Yellow	*Joy, happiness, cowardice, caution*
Green	*Growth, harmony, fertility, jealousy*
Blue	*Depth, trust, truth, depression*
Black	*Power, elegance, formality, mystery, death, evil*
Purple	*Power, wisdom, luxury, arrogance*
White	*Purity, peace, cold, clinical.*

TYPES OF STAGING

Proscenium Arch	Most common type of staging in Western Theatre - the audience sits on one side only, also known as end-on staging.
In The Round	Positioned at the centre of the audience, who sit around the whole stage. Creates an intimate atmosphere, is good for audience involvement.
End-on-stage	Found in a studio theatre. Seats face the stage space at one end. No proscenium arch.
Thrust	Extends into the audience on three sides and is connected to the backstage area by its upstage end. Greater intimacy between performers.
Traverse	Like a catwalk, audience sit either side of stage. Brings audience closer to action & creates an intimate/ engaging atmosphere. Could be difficult to use without blocking sight lines.
Promenade	(Immersive) Audience members walk through the space to experience the performance.
Site specific theatre	These spaces are chosen as a key part of the production.
Amphi-theatre	He audience sit in a large and steep half bowl shape with a circular stage at the bottom. Originated from Ancient Greece.

GCSE Food preparation and nutrition

Week 13 Finishing techniques and garnishes	**Week 14** Different dietary needs
Adding a food on a finished dish can improve the aesthetic appearance. Decorations on savoury food dishes are called garnishes. Decorations on sweet foods are simply called decorations. Some examples of garnishes include: Fanning – a strawberry can be cut into slices with a knife leaving the top of the strawberry intact which creates a fan affect Waterlilly effect – using a knife, a V shape is cut around the middle to create a toothed affect. Tomatoes and melon can be prepared in this way Scoring with a fork – score down with a sharp knife or fork to give ridged effect. Cucumber and lemons can be prepared in this way. Twists – slice, then cut from the edge to just past the centre. Cucumber, oranges, lemons can be prepared in this way. Ribbons – courgettes or cucumbers can be peeled along their length to produce ribbons which can be arranged in different ways, e.g making a spiral, folding or wrapping around another food. Specific skills to improve the overall aesthetic: Pipping – piping mash, meringues and other things can make a big difference to the outcome of the dish. Creating sugar work: This can elevate a desert with good finishing techniques with sugar work. Melted chocolate: this can also help elevate a desert as melting and then creating shapes can help with decorations. For more inspiration: https://www.youtube.com/watch?v=1zrxJ5ySyok.	**Lactose intolerant** Intolerant to lactose. Those affected vary in the amount of lactose they can tolerate before symptoms develop. Symptoms may include abdominal pain, bloating, diarrhoea, gas, and nausea. **Coeliac** Intolerant to wheat - Classic symptoms include gastrointestinal problems such as chronic diarrhoea, abdominal distention, malabsorption, loss of appetite and among children failure to grow normally. **Lacto-ovo vegetarian** lacto-ovo vegetarian is a vegetarian who consumes some animal products, such as eggs and dairy. Unlike pescatarians, they do not consume fish or other seafood. **Lacto vegetarian** a person who does not eat meat and eggs. **Vegan** excludes meat, eggs, dairy products, and all other animal-derived ingredients **Vegetarian** Do not eat meat, poultry, fish, or any products derived from animals, including eggs, dairy products, and gelatine **Pescatarian** a person who does not eat meat but does eat fish**.** **Food allergy** Is an immune system reaction that occurs soon after eating a certain food. Even a tiny amount of the allergy-causing food can trigger signs and symptoms such as digestive problems, hives or swollen airways and this could be fatal.

Week 15
Diet related diseases

Obesity

Obesity, or being obese, means being very overweight.

How can it be measured?

You can use body mass index (BMI) to see if your weight falls into the normal range. It is measured by calculating weight (KG)/ height (M) squared.

Health problems linked to obesity include:

1. Type 2 diabetes
2. Coronary heart disease
3. Stroke
4. Cancers
5. Arthritis
6. Depression

Cardiovascular disease

When your heart beats it pumps blood around your body to give your body cells oxygen, energy and the nutrients it needs. The blood then takes away the waste products from your body.

The two main types of cardiovascular disease are:

1. Coronary heart disease
2. Stroke.

Tooth decay - What causes tooth decay?

Tooth decay begins with plaque forming on your teeth and gums that contains bacteria. Over time, this bacteria can interact with the sugars in the foods you eat to make acid. This acid attacks your tooth enamel and can cause tooth decay.

Type 2 diabetes

Diabetes is a condition when the sugar in a person's blood gets too high.

More likely to develop type 2 diabetes if:

- You are overweight/obese
- You are over 40 years old
- You eat fatty, salty and sugary foods often
- You have high blood pressure
- You do not exercise regularly.

Week 16
Energy needs

Your body needs energy for every function and movement that it performs

Energy we use is measured in kilocalories (kcal) or kilojoules (kj).

1g of each nutrient	Energy value in Kcal
Protein	4.0
Fat	9.0
Carbohydrate	3.75

The amount of energy you need changes throughout your life because of these main factors:

- Age – teenagers compared to babies or elderly.
- Activity- your energy needs will change from day to day depending on these activities
- Health – Your own health also affects the amount of energy needed.
- Gender – Whether you are male or female will affect your energy needs.

Basal metabolic Rate

Basal metabolic rate (BMR) is the number of kilocalories you need to stay alive for 24 hours.

Physical activity level

Physical activity level is a way of showing your daily physical activity as a number. Your PAL will vary depending on how you spend your time during the day.

$$\text{Physical activity level} = \frac{\text{Total energy expenditure [24 hours] /}}{\text{Basal metabolic rate [24 hours}}$$

Week 17
Raising agents

Raising agents are something added to sweet or savoury mixtures, such as cakes scones and breads to make them rise.

Chemical

chemical raising agents produce CARBON DIOXIDE

Biological

Yeast is a biological raising agent which during fermentation produces carbon dioxide gas.

Fermentation needs certain conditions for it to work:

1. **Time**
2. **Heat source**
3. **Moisture**
4. **Food source**

Mechanical

Mechanical raising agent are the things that you physically do to a product such as whisking, sieving, folding, mixing. They trap air throughout the mixture and this air turns to steam in the oven.

Week 18
Raising agents

Why is food cooked?

- To make food safe to eat
- To improve the flavours of food
- To improve appearance and smell-
- To improve the texture of food
- To improve the shelf life
- To give variety to the diet

Heat can change the appearance, colour, flavour, texture and smell of food. When food is prepared and cooked you may see one or more of the changes.

Methods of heat transfer

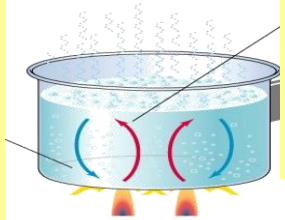
Conduction

Conduction is when the heat travels through solid materials like metal as well as food.

Convection

Convection is when heat travels through air or water. The movement of heat in water or in the air is called the convection current.

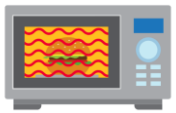
Water cools, becomes more dense and sinks



Hot, less dense water rises

Radiation

Radiation is when heat rays directly warm and cook food. Heat



Week 19
Cooking methods

The ways in which we cook food can be divided into the following groups:

1. Cooking with water
2. Cooking with 'dry heat'
3. Cooking with fat

Cooking with dry heat
- Grilling
- Dry frying
- Baking
- BBQ

Cooking with water
- Blanching
- Boiling
- Braising
- Poaching
- Simmering
- Steaming

Cooking with fat
- Shallow frying
- Stir-frying
- Roasting

Choosing the cooking method – Factors to consider

- Type of food – E.g. Yorkshire puddings require baking
- Skill of the cook – Poaching requires skill
- Time available- Stewing takes hours
- Dietary needs- Low fat diets require low fat
- Sensory requirements- crispy skin or soft vegetables
- Equipment available

Key cooking methods you must understand:

Baking – Poaching – BBQ – boiling – Braising – Dry frying – Grilling – Roasting – shallow frying – Simmering – steaming – stir frying

Week 20
Micro-organisms

Micro-organisms are tiny forms of life, both plants and animals. There are three groups:

1. Bacteria

Optimum conditions

- A suitable temperature and pH
- A supply of moisture and nutrients (particularly protein, fats, minerals and sugar)
- The right level of oxygen (aerobic bacteria need oxygen; anaerobic do not
- Sufficient time – shelf life of food

High risk foods: meat, poultry, fish, seafood, eggs, milk, cream and some cheeses

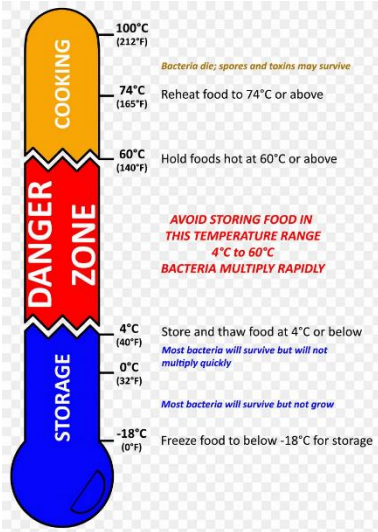
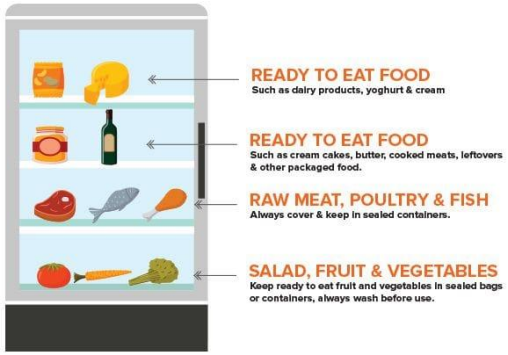
2. Yeast

- optimum conditions to grow and multiply:
- A suitable temperature: 25 – 30 degrees in optimum but they can still grow (slowly) in cooler temperatures.
- A suitable pH – pH of 4 – 4.5 is optimum for yeasts – Acidic
- A supply of moisture
- A supply of energy and nutrients: particularly carbohydrates
- The right level of oxygen – Aerobic and anaerobic
- Sufficient time

High risk foods: jam, honey, fruit, yoghurts and fruit juices

3. Moulds

- Suitable temperature – 20 degrees – 30 degrees, but they can still grow in fridges at lower temperatures.
- A suitable pH – ranging from 2.0 -9.0 – optimum seems 7.0
- A supply of moisture; moulds grow particularly well in humid conditions and on moist foods, but there are some that can grow on dry foods too.
- A supply of energy and nutrients

Week 21 Types of bacteria	Week 22 Principles of food safety	Week 23: List of Seneca for cycle 2
There are different from bacterial food poisoning, because only a few bacteria can cause the illness and the food is the vehicle by which they enter the body, rather than the place where they multiply. In other terms it's the food that is the cause, not the body. The bacteria can come from various different sources including dirty water, sewage, manure, wild animals bird and insects. We need to learn about various different foodborne diseases such as: **1. Campylobacter** **Foods found in:** **Raw and undercooked meats and poultry, raw milk** **2. Escherichia coli (E.coli)** **Foods found in:** **Undercooked meat products e.g burgers, raw milk, raw milk products, apple juice, some cooked meats** **3. Listeria monocytogenes** **Foods found in:** **Soft cheese, pates, cook-chill products, salads, fried rice** **4. Salmonella** **Foods found in: Meat, poultry, raw egg products e.g mayonnaise, milk, dairy products, sauces, salads dressings, coconut, beansprouts** **5. Staphylococcus aureus** **Foods found in:** **Poultry, cooked meats and meat products, egg and egg products, salads, milk and milk products, some dried foods. Found on/in the skin hair, nose, mouth and throats of people and animals.**	**Personal hygiene** people who handle food in a commercial or domestic kitchen must keep themselves clean and hygienic and follow the basic personal hygiene rules**.** **Cross contamination** Cross contamination is the transfer of bacteria from contaminated foods, liquid and solid substances, surfaces, materials or animals to other foods   **Food storage**  	**Week 13:** 1.1.4 – cooking methods 1.1.5- sauce making 1.1.6 – dough and pastry 1.1.7 – shaping and finishing dough **Week 14:** 2.3.2 – informed choices for balanced diet 2 2.3.5 - Diet modifications **Week 15**: 2.3.6 diet related diseases 2.3.7 diet related diseases 2 **Week 16:** 2.3.3- Energy needs 2.3.4 – nutritional analysis 2.3.8 – end of topic test – nutritional needs and health **Week 17:** 3.2.3 Raising agents 1.1.8 – Raising agents and setting mixtures **Week 18:** 3.1.1 – Reasons for cooking and heat transfer **Week 19:** 3.1.2- water based cooking methods 3.1.3- fat based cooking methods 3.1.4- dry cooking methods 3.1.5 – dry cooking methods **2** **Week 20:** 4.1.1 – micro-organisms and signs of food spoilage 4.1.5 – micro-organisms in food production **Week 21:** 4.1.2- enzymes and signs of food spoilage 4.1.3- Food poisoning 4.1.4 – bacterial contamination **Week 22:** 4.2.1 Temperature Control 4.2.2 Ambient Foods & Food Labels 4.2.3 Preparing, Cooking & Serving Food 4.2.4 End of Topic Test - Food Safety **Evaluation of Seneca – complete any outstanding Seneca in preparation for cycle 2**

Year 11 French Knowledge Organiser cycle 1

Complete your weekly assignment on Seneca

Extensions:

- Create revision cards for each of the main tenses studied to help you remember how to form them.
- Find a picture in a magazine/online and write a photo description
- Do 10 minutes of Duolingo every day to build your vocabulary
- Write a glossary of vocabulary we see in class – memorise it and test yourself at home.

GCSE LANGUAGES COURSE CONTENT

Subject content – split into three themes with different topics in each

3.1.1 Theme 1: Identity and culture

Theme 1: Identity and culture covers the following four topics with related sub-topics shown as bullet points:

Topic 1: Me, my family and friends
- Relationships with family and friends
- Marriage/partnership

Topic 2: Technology in everyday life
- Social media
- Mobile technology

Topic 3: Free-time activities
- Music
- Cinema and TV
- Food and eating out
- Sport

Topic 4: Customs and festivals in Spanish-speaking countries/communities

3.1.2 Theme 2: Local, national, international and global areas of interest

Theme 2: Local, national, international and global areas of interest covers the following four topics with related sub-topics shown as bullet points:

Topic 1: Home, town, neighbourhood and region

Topic 2: Social issues
- Charity/voluntary work
- Healthy/unhealthy living

Topic 3: Global issues
- The environment
- Poverty/homelessness

Topic 4: Travel and tourism

3.1.3 Theme 3: Current and future study and employment

Theme 3: Current and future study and employment covers the following four topics:

Topic 1: My studies

Topic 2: Life at school/college

Topic 3: Education post-16

Topic 4: Jobs, career choices and ambitions

Grammar

Communication strategies (for receptive and productive)

Cross-topic vocabulary e.g. rubrics / descriptions / opinions....

ASSESSMENTS = Students entered for either Foundation tier or Higher tier.
(Foundation tier = Grade 1-5 or Higher Tier = Grade 4-9)

AO1 = Listening (understand and respond to different types of spoken language)
AO2 = Speaking (communicate and interact effectively in speech)
AO3 = Reading (understand and respond to different types of written language)
AO4 = Writing (communicate in writing)

Paper 1: Listening

What's assessed

Understanding and responding to different types of spoken language

How it's assessed

- Written exam: 35 minutes (Foundation Tier), 45 minutes (Higher Tier)
- 40 marks (Foundation Tier), 50 marks (Higher Tier)
- 25% of GCSE

(Each exam includes 5 minutes' reading time of the question paper before the listening stimulus is played.)

Questions

Foundation Tier and Higher Tier

- Section A – questions in English, to be answered in English or non-verbally
- Section B – questions in Spanish, to be answered in Spanish or non-verbally

Paper 2: Speaking

What's assessed

Communicating and interacting effectively in speech for a variety of purposes

How it's assessed

- Non-exam assessment
- 7–9 minutes (Foundation Tier) + preparation time
- 10–12 minutes (Higher Tier) + preparation time
- 60 marks (for each of Foundation Tier and Higher Tier)
- 25% of GCSE

Questions

Foundation Tier and Higher Tier

The format is the same at Foundation Tier and Higher Tier, but with different stimulus questions for the Photo card and different stimulus materials for the Role-play. The timings are different too:

- Role-play – 15 marks (2 minutes at Foundation Tier; 2 minutes at Higher Tier)
- Photo card – 15 marks (2 minutes at Foundation Tier; 3 minutes at Higher Tier)
- General conversation – 30 marks (3–5 minutes at Foundation Tier; 5–7 minutes at Higher Tier)

Paper 3: Reading

What's assessed

Understanding and responding to different types of written language

How it's assessed

- Written exam: 45 minutes (Foundation Tier), 1 hour (Higher Tier)
- 60 marks (for each of Foundation Tier and Higher Tier)
- 25% of GCSE

Questions

Foundation Tier and Higher Tier

- Section A – questions in English, to be answered in English or non-verbally
- Section B – questions in Spanish, to be answered in Spanish or non-verbally
- Section C – translation from Spanish into English (a minimum of 35 words at Foundation Tier and 50 words at Higher Tier)

Paper 4: Writing

What's assessed

Communicating effectively in writing for a variety of purposes

How it's assessed

- Written exam: 1 hour (Foundation Tier), 1 hour 15 minutes (Higher Tier)
- 50 marks at Foundation Tier and 60 marks at Higher Tier
- 25% of GCSE

Questions

Foundation Tier

- Question 1 – message (student produces four sentences in response to a photo) – 8 marks
- Question 2 – short passage (student writes a piece of continuous text in response to four brief bullet points, approximately 40 words in total) – 16 marks
- Question 3 – translation from English into Spanish (minimum 35 words) – 10 marks
- Question 4 – structured writing task (student responds to four compulsory detailed bullet points, producing approximately 90 words in total) – there is a choice from two questions – 16 marks

Higher Tier

- Question 1 – structured writing task (student responds to four compulsory detailed bullet points, producing approximately 90 words in total) – there is a choice from two questions – 16 marks
- Question 2 – open-ended writing task (student responds to two compulsory detailed bullet points, producing approximately 150 words in total) – there is a choice from two questions – 32 marks
- Question 3 – translation from English into Spanish (minimum 50 words) – 12 marks

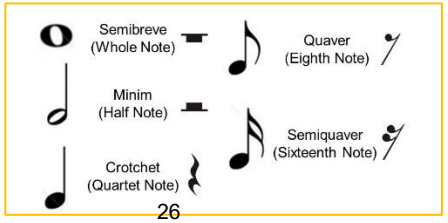
Music Composition Knowledge Organiser

Steps to create your own composition	
Be able to generate musical ideas from starting points	
Generating material	Pitches, rhythms, chords, harmonic systems, themes, texts, images.
Musical starting points	Hooks and riffs, melodic ideas, rhythmic pattern, chord progressions, sound pallets.
Working to a brief	Interpreting a brief and devising appropriate musical ideas.
Know how to extend, develop and manipulate musical material	
Extending and developing an idea	Repetition, decoration, variation, sequence and contrast.
Manipulating techniques	Transposition, transformations (inversion, retrograde, retrograde inversion) and processes (canon, phrasing, addition, subtraction, augmentation, diminution, displacement).
Working with layers	Instrumentation, textures, contrasts.
Be able to form musical material into completed compositions	
Form and structure	Binary, ternary, rondo, arch, ground bass, introductions, codas, song structures, 12-bar blues, effective use of repetition and contrast.
Pace	Maintaining momentum, contrasts, balancing repetition and change.
Be able to present compositions appropriately	
Appropriate presentation methods	Conventions of particular styles, genres and scores
Type of score	Full score, lead sheet, chord chart, relevant computer software.

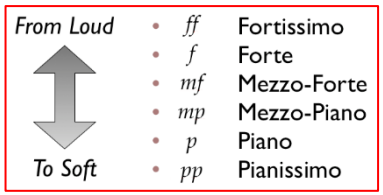
Musical Element	Definition	Examples
Dynamics	The volume of a piece of music.	piano, forte, crescendo and diminuendo.
Rhythm	The pattern of beats.	Semibreve, minim, crotchet, quaver, semiquaver, rests, broken chords, triplets.
Pitch	The intervals between different notes.	High, low, ascending, descending, stepwise
Structure	The sections that make up the music.	Binary, ternary, rondo, arch, ground bass, introduction, codas, 12-bar blues,
Melody	The main tune	Scalic, passing note, repetition, phrases, ostinato
Instrumentation	The different instruments used within the music.	Orchestra, pop band, chamber band, choir, duet, trio.
Texture	The different layers within the music.	Monophonic, homophonic, polyphonic, melody and accompaniment.
Tonality	The key the music is in	Major, minor, modal, chromatic.
Tempo	The speed of the music.	Allegro, Adagio, Andante, Largo, Presto
Timbre	The sound quality of each instrument.	Deep, light, clear, dark
Harmony	The way the notes sound together.	Chords, added note chords, inversions, transpositions.

Musical Symbols

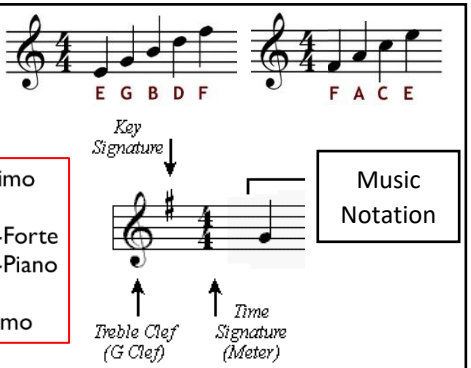
Rhythmic Notation



Dynamics



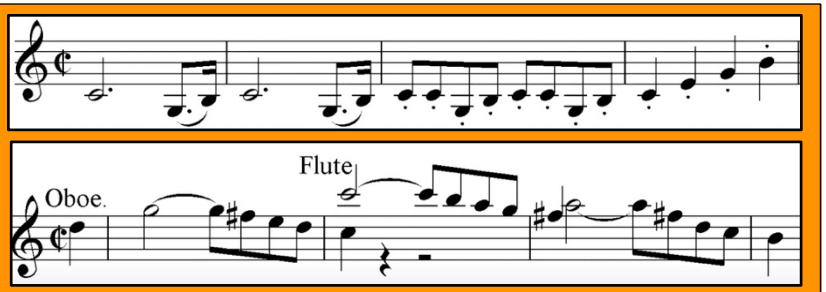
Music Notation



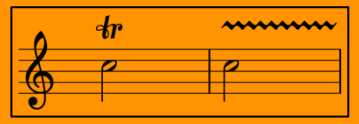
Knowledge Organiser

Beethoven's Symphony No.1 Movement 1: Adagio molto – Allegro con brio

MELODY



- 1st **subject** = **Rising triadic** shape, based off a C7 chord:
  - Quite **disjunct** as far as melodies go, it feels like it's dancing around!
  - 1ST subject is **sequenced** up a tone from C to D
  - 1st subject becomes increasingly 'shrunk'; it is halved and by bar 144, only the first 3 notes are used
- 2nd **subject** = **Falling scalic** shape, **shared** between the flute and oboe
  - Quite **conjunct** in terms of shape, but…
  - Because it's shared across instruments, it still ***feels*** jumpy
- There is heavy use of **diatonic major scales** but…
- There is also heavy use **chromatic** scales (e.g. bar 6-7) to add colour. In the recap, there is a rising chromatic **scale lasting for 8 bars**
- Melodies are often harmonised in **pleasing 3rds**, such as bars 8-10
- Use of ornamentation such as **trills and grace notes** to add tension (such as the 2-bar trill before the coda)
- **Tremolos**! LOTS of tremolos in the strings and timpani to add tension/drama
- **Descending sequence** at bar 82 of previous 3 bars
- Final coda features broken **triads spanning 3 octaves** to create drama and excitement



TEXTURE

- The intro is **homophonic**/chordal
- The exposition is **melody and accompaniment**
- Big finales to sections are usually **homorhythmic**
- There are moments of **monophony (b111)**, contrasted with full **chordal** textures at **112**
- There is **a lot** of imitation between families, such as bars 6-7
- **Unison** is used in the recapitulation; **all instruments** play the 1st subject in unison!

STRUCTURE

SONATA FORM (very typical of classical)

1. Intro = Bar 1
2. Exposition = Bar 12
3. Development = Bar 113
4. Recapitulation = Bar 178
5. Coda = Bar 271

Intro = Sets the scene/tone
Expo = Introduces 1st subject and 2nd subject
Dev = Evolves ideas through new keys
Recap = Literally recaps/returns ideas
Coda = 'Tail' or ending of the music

INSTRUMENTATION/SONORITY/TIMBRE

What is the role of?

1. The **woodwind**: Plays the 2nd subject, plays countermelodies, adds harmonic colour by playing harmonies of 3rds or chromatic notes
2. The **strings**: Use of pizzicato (plucking) and arco (bowed)
3. The **timpani**: emphasises the harmonic progressions, often plays basic tonic or dominant notes, plays tremolos at 'big' moments in the music
4. **Cello + bassoon**: plays the tonic, plays tonic pedals, reinforces the harmonic progressions

DYNAMICS

Sometimes taken for granted, but here they are everywhere and central to the story!

1. Use of **'fp'** adds further confusion to the opening 'joke' of the intro *fp*
2. Use of **'p'** on the 1st subject seems comedic as it's the main melody being timid or shy!
3. Use of **sfz** (sforzando/forced) on big musical moments *sfz*
4. Lots of **crescendos** to ff for drama
5. **Extreme** dynamic **contrasts**, such as bar 76 where it goes from ff to pp

HARMONY + TONALITY

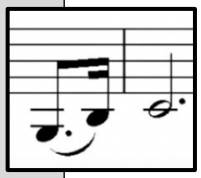
- Key of **C major** overall
- Opening 12 bars are confusing because we hear the following:
  1. Perfect cadence in F major (C7 to F)
  2. Interrupted cadence in C major (G to Am)
  3. Perfect cadence in G major (D7 to G)

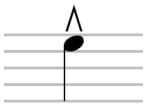
  These 3 progressions break the rules of C major and create a comedic 'joke'

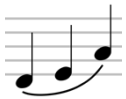
- Dominant 7th chords are <u>everywhere</u>: the 1st subject is even built on a C7 chord!
- Moves to keys such as G major (dominant), A minor (relative minor) and C minor (tonic AKA parallel minor)
- Perfect cadences are **regular and strong**, such as the I – IV – V7- I at bar 30
  - There are perfect cadences in C major as well as G major
  - The very last perfect cadence plays 'C' for **10 bars**! Perfect cadence is very strong!
- There are examples of tonic and dominant **pedals** that go on for ages… this means that the listener is usually very clear as to what the harmony is doing
- Unexpected and sudden **V – Ib at bar 69** which is unstable and unsatisfying
- The Development features several **diminished 7ths**, adding tension and intensity

RHYTHM

- ***Crotchet rests*** are often used to help add drama to big chords and musical climaxes
- The 1st subject is based off a ***dotted*** idea, which adds liveliness and reappears everywhere as a motif in itself (such as bar 144 when it is passed around). May also be a nod to Mozart!
- The 1st subject is a perfect example of ***rhythmic diminution*** (dotted quaver + minim to constant quavers)
- Heavy use of ***semiquaver and demisemiquaver*** scales to add momentum to the music
- Most of the time, the rhythms are ***simple crotchets and minims*** which allows the harmony to shine through







METRE

- Remains in 4/4 throughout

TEMPO

- Adagio molto (very slow) in Bars 1-12
- Tempo change to allegro con brio (fast and bright) for rest of the piece

ARTICULATION

Purposeful use of articulation throughout:

1. **Marcato** is used everywhere (stronger sound)
2. **Legato** (smooth) is used in more delicate moments
3. 2nd subject is **accented** on **Beat 2**, which makes the pulse weaker and shows Beethoven is teasing the listener

Year 11 GSCE PE Cycle Two

Week 1

Etiquette, Sportsmanship, Gamesmanship and Contract to Compete

Etiquette

A convention or unwritten rule in an activity. It is not an enforceable rule but it is usually observed.
An example would be kicking the ball out of play if a footballer is injured to stop the game and the player can receive treatment.

Sportsmanship

Conforming to the rules, spirit and etiquette of a sport.
An example will be shaking hands with the opposing team.

Gamesmanship

Attempting to gain an advantage by stretching the rules to their limit.
An example of this is time wasting in any sport event where there is a defined time limit.

Contract to compete

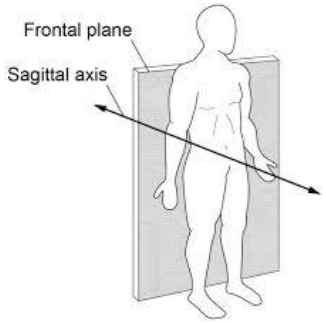
An unwritten agreement between opponents to follow and abide by the written and unwritten rules of the sport.
Examples would be not arguing with the officials and not taking performance enhancing drugs.

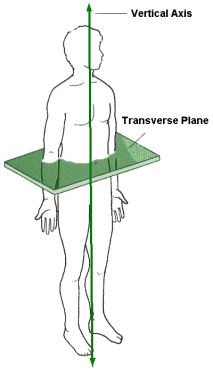
Week 2

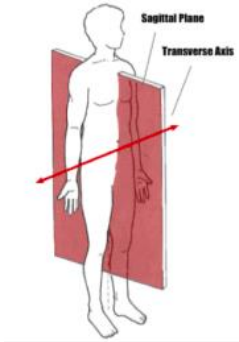
Planes and Axis

Plane = The line drawn through the body dividing into two parts. A movement will occur in the plane.

Axis = An imaginary straight line drawn, around which the body can rotate.







SOME TIMES
FRANK SINATRA
TWEETS LYRICS

SAGITTAL TRANSVERSE
FRONTAL SAGITTAL
TRANSVERSE LONGLITUDINAL

Week 3

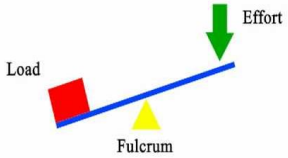
Levers

All movements are produced by a series of levers working together. A lever is a rigid bar that turns about an axis to create movement.

1 2 3
F L E

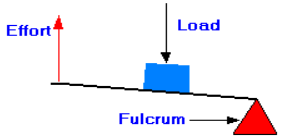
Fulcrum: The fixed point at which a lever turns.
Load: The weight or resistance that the lever must move.
Effort: The force required to move the load.

First Class Lever system:



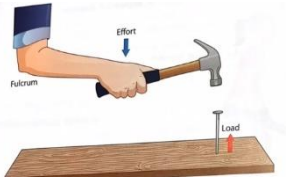
Example: Hooker performing a line out in rugby.

Second class Lever system:



Example: When you do a press up.

Third class Lever system:



Example: Paddling a Kayak.

Week 3 continued

Levers continued

Mechanical advantage: Measures the efficiency of the lever.

Mechanical Advantage = Effort arm / Load (resistance) arm

High mechanical advantage:
Always Second Class levers
This is because the load arm is longer than the effort arm.

Low mechanical advantage:
Always third class levers
This is because they produce a larger range of movement with relatively low effort.

High or low mechanical advantage:
First class levers
If the fulcrum is closer to the load it will have a high mechanical advantage.
If the fulcrum is closer to the effort it will have a low mechanical advantage.

Week 4	Week 4 continued		
Health and Nutrition Health is defined as – *A state of complete mental, physical and social well-being and not merely in the absence of disease or infirmity*  **Physical health:** Being physically healthy includes: enjoying being physically active. Having good balance, coordination and agility in everyday tasks as well as sport. Having the strength, stamina for daily life and work. Having fewer illnesses and injuries. **Emotional health:** Being emotionally healthy includes: Having good self-esteem. Being able to recognise and express feelings. Being able to manage emotions to suit the situation. Feeling positive about life. **Social health:** Being socially healthy includes: being able to interact with a range of people. Having respect, empathy and tolerance for other people. Being able to manage emotions to suit the situation.	**Health and Nutrition continued**  **A balanced diet contains the right quantity of food so that you consume only as many calories as you expend each day. It needs to be the right mix of different types of food so that the body receives the right nutrients, vitamins and minerals that it needs.** **Protein (15-20% of intake) –** Protein helps grow the bodies tissue and help repair muscles after exercise. **Meat, Fish, Lentils and Nuts.** **Carbohydrates (55-60% of intake) –** Main source of energy for the body. There are 2 types. Simple carbs and complex carbs. **Simple = Sugar and glucose. Complex = rice, bread and pasta.** **Fat (25-30% of intake) –** Another source of energy. Fats are stored under the skin and insulate the body. **Oil, nuts and diary.** **Vitamins** – Used for many things such as vision and metabolic rate. Needed in small amounts. **Oily fish, fruit and veg.** **Minerals –** Used for many things such as bone growth and strength, nervous system, and immune system. Needed in small amounts. **Milk, fish and broccoli.**		

A. Visual Elements Keywords

Line	Line is the path left by a moving point. A line can be horizontal, diagonal or curved and can also change length.
Shape	A shape is an area enclosed by a line. Shapes can be geometric or irregular.
Form	Form is a three dimensional shape, such as a cube, sphere or cone.
Tone	This refers to the lightness or darkness of something. This could be a shade, or how dark or light a colour appears.
Texture	This is to do with the surface quality of something. There are two types of texture: Actual texture really exists, so you can feel it or touch it; Visual texture is created using marks to represent actual texture.
Pattern	A design that is created by repeating lines, shapes, tones or colours.
Colour	Red, yellow and blue are primary colours, which means they can't be mixed using any other colours.

B. Key Knowledge: Please tick off once you have shown evidence in your work

AO1 - Research

- Visual AND annotated mind map of Ideas / themes / **CONCEPTS**
- Critical Studies (minimum of 3) using the literacy guides
- Extra critical studies as your project develops
- **LINKS** between your work, ideas and the work of others

AO2 - Experimentation with techniques and processes

- A response to every critical study using a different process/ material
- Photoshops Experiments
- Handmade Experiments
- **LINKS** between your experiments and ideas

AO3 - Recording Ideas

- Your own photoshoots (outside of school)
-
- All work annotated using the literacy guide in your booklet
- Written **LINKS** between yours and others work that explain the concept

AO4 - Outcomes

- A statement of intent for your final piece
- Experiments in the style of your final piece ideas
- A final piece that clearly **LINKS** to your research, ideas and experiments
- An evaluation of your final piece

C. Key Knowledge: CONCEPT

Definition – an abstract idea, a plan, intention or invention

To score highly you must have an original concept – an idea that is yours and means something personal to you. In your work you must include research into your concept e.g a project on human emotions may include research into psychology and human nature.

GCSE PHOTOGRAPHY – YEAR 11 MOCK
CHOOSE 1 of the 3 titles
(In your exam you will have 7 choices)

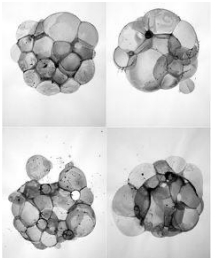
D. Key Knowledge: Expert Modelling

https://www.youtube.com/watch?v=SUSRl3PwGE4

https://www.youtube.com/watch?v=pOCK42gq_Jw

Watch these two videos on students GCSE Photography sketchbooks. There is lots of inspiration and great ideas on YouTube.

E. How to find your own Artists / Photographers



https://www.art2day.co.uk/photography2.html

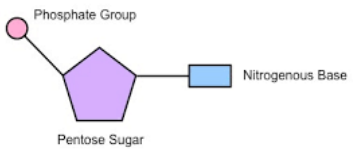
https://www.lensculture.com

https://www.photopedagogy.com

https://www.pinterest.co.uk

Create your own Pinterest account to research and have a daily feed of new and exciting creatives and their work. This will support you in your research and developing an original CONCEPT.

Y11 Triple Biology
Triple content: Inheritance

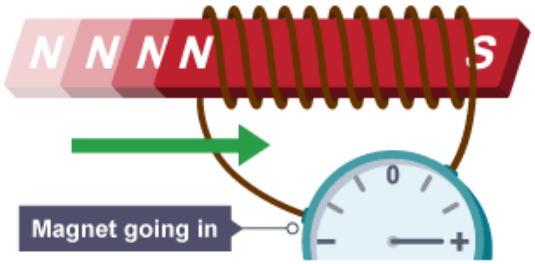
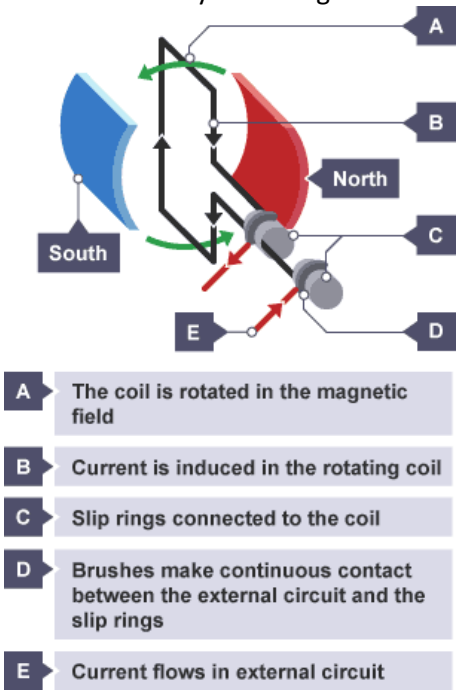
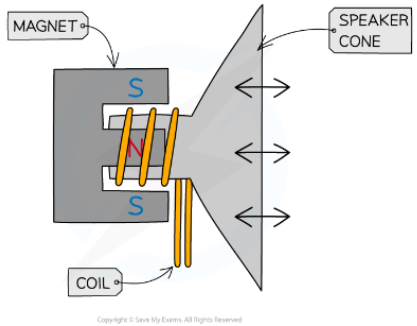
Lessons 1 Reproduction +/- sexual vs asexual	Lesson 2 DNA structure	Lesson 3 Protein synthesis
Advantages of sexual reproduction • Produces variation in the offspring, the offspring are different to the parent • If the environment changes, variation can give a survival advantage by natural selection • Natural selection can be speeded up by humans in selective breeding Examples of selective breeding: To increase food production Advantages of asexual reproduction • Only one parent is needed • More energy efficient, do not need to find a mate • More time efficient, do not need to find a mate • Faster than sexual reproduction • Many identical offspring can be produced when conditions are favourable. Organisms: fungi, bacteria and strawberries. Using both types of reproduction: Some organisms use both asexual and sexual reproduction. Fungi- most commonly uses asexual producing spores by mitosis. If conditions are unfavourable uses sexual reproduction. Using meiosis to make haploid spores.	DNA is a polymer made from 4 different nucleotides. Each nucleotide consists of a sugar, a phosphate group and 1 of 4 different bases. Bases: A, C, G and T Bases are read in 3s. Each 3 bases will be a code for a particular amino acid. The order of the bases in the DNA controls the order that the amino acid are assembled to produce a particular protein. This is a DNA nucleotide:  The base could be A, C, G or T. C is paired to a G T is always paired with an A.	Protein synthesis in the cell in controlled by the DNA in the nucleus. Genes in the DNA produce a template for protein. The template reflects the sequence of bases in the DNA, it is small and leaves the nucleus. The template travels to the ribosome. In the cytoplasm there are carrier molecules with amino acids attached. The carrier molecules attach themselves to the template in the order given by the DNA. The amino acids are joined together to form a specific protein. The carrier molecules keep bringing specific amino acid to add to the growing protein chain in the correct order until the template is completed. The protein detaches from the carrier molecules and the carrier molecules detach from the template and return to the cytoplasm to pick up more amino acids. Once the protein chain is complete it will fold up to a specific shape to enable it to carry out its specific function in the cell. Enzymes, hormones or forming structures in the body such as collagen.

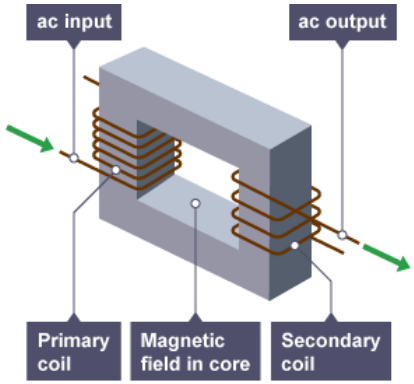
Lesson 4 Mutation	Lesson 5 Gene expression	Lesson 6 Cloning
Mutation: A change in the DNA sequence Mutations occur continuously. Most mutations do not alter the protein or only alter it slightly so that the appearance or function is not changed. If the DNA sequence changes, this can change the amino acid that is added to the protein chain. If the DNA codes for an altered protein, this can this can lead to a different shape. A change to the shape for an enzyme could mean that the active site is different enough that the substrate will not longer fit. Not all parts of the DNA code for proteins. Non coding parts of DNA can switch genes on and off, so variables in these areas of DNA may affects how genes are expressed.	Genes are switched on and off as we grow and develop. The environment may affect how genes are switched on and off and which genes are switched on and off. When a gene codes for a protein that is synthesised by a cell, the gene is said to be expressed. Non coding DNA holds the answer for how the body can synthesis so many chemicals wit so few genes. Each gene can synthesis lots of different chemicals depending how much of each gene is turned on or off or which other genes are switched on or off at the same time. Variations in the non-coding DNA sequence is responsible for how genes are expressed. New genes exist as a result of DNA mutations. Mutations occur all the time as a result of mistakes during copying DNA to make new cells. Mutations in the non-coding DNA sequence can affect which genes are switched on or off.	A clone is an individual that has been produced asexually and is genetically identical to the parent. **Cloning plants** Tissue culture: using small groups of cells from part of a plant to grow identical new plants. This is important for preserving rare plant species or commercially in nurseries. Cuttings: older, simpler method used by gardeners to produce many identical plants from a parent plant. **Cloning Animals** Embryo transplants: Splitting apart cells from a developing animal embryo before they become specialised, then transplanting the identical embryos in to host mothers. Adult cell cloning: -Nucleus is removed from an unfertilised egg ell -nucleus is removed from a body cell, such as a kin cell, it is inserted in to the empty egg cell -An electric shock stimulates the egg cell to divide to form an embryo -These embryo cells contain the small genetic information as the body cell (adult skin cell) -When the embryo has developed in to a ball of cells, it is inserted in to the womb of an adult female to continue its development.

Lesson 7 Theory of evolution	Lesson 8 Lamarck's Theory of evolution	Lesson 9 Accepting Darwin's ideas
Charles Darwin, as a result of expeditions around the world, backed by years of experimentation and discussion and linked to developing knowledge of geology and fossils proposed the theory of evolution by natural selection. -Individual organisms within a particular species show a wide range of variations for a characteristic -Individuals with characteristics most suited to the environment are more likely to survive to breed successfully. The characteristics that have enabled these individuals to survive are then passed on to the next generation. Darwin published his ideas in On the Origin of Species (1859). There was lots of controversy surrounding these revolutionary ideas. Theory of evolution by natural selection was only gradually accepted because: The theory challenged the idea that God made all animals and plants that live on Earth. There was insufficient evidence at the time the theory was published to convince many scientists. The mechanism of inheritance and variation was not known until 50 years after the theory was published.	Other theories of evolution include that of John Baptist Lamarck. Idea is based on the idea that changes that occur in an organism during its lifetime can be inherited. We know that in the vast majority of case this type of inheritance cannot occur. Lamarck's ideas influenced the way that Darwin thought. There were several problems with Lamarck's ideas: No evidence for the fountain of life People didn't like the idea of being descended from worms People could quite clearly see that changes in their bodies during their lifetime (like big muscles) was not passed on to their children.	Darwin realised that he would need lots of evidence to support his ideas. He used the amazing animals and plants that he saw on his journeys as part of the evidence. He notes that organisms on different islands had adapted to their environments by natural selection. They evolved to be different from each other. Darwin carried out breeding projects on pigeons at home. He wanted to show how features could be artificially selected. <u>Alfred Russel Wallace</u> Independently proposed the theory of evolution by natural selection. He published joint writing with Darwin in 1858. Prompting Darwin to publish On the origin of Species (1859). Wallace is best known for work on warning colouration in animals and his theory o speciation. Theory of speciation: New species arise as a result of isolation where 2 populations are separated from each other. There is genetic variation between the populations. Natural selection that operates differently on the two populations. Populations become so different to each other that successful interbreeding is no longer possible.

Y11 Triple Biology
Triple content: Inheritance

Lesson 10 **The history of genetics**	**Lesson 11** **The role of biotechnology**	
Mid-19th century Gregor Mendel carried out breeding experiments on plants. Observed that the inheritance of each characteristic is determined by separated units of inherited material that are passed on to decedents unchanged. He realised that some characteristics were dominant other others and that they never mixed together. Chromosomes had not yet been discovered, it was only after his death that his discovery was recognised, the late 19th century. In the mid 20th century the structure of DNA was determined and the mechanism of the gene function worked out.	Biotechnical and agriculture solutions, including genetic modification to meet the demands of the growing human population. Genetically modified crops are being developed to give bigger yields, or improved nutrition. -Golden rice contains extra vitamin A. Modern biotechnology techniques enable large quantities of microorganisms to be cultured in industrially controlled vats for food. Fusarium is useful for producing mycoproteins, a protein rich food suitable for vegetarians. Fungus is grown on glucose syrup in aerobic conditions, the biomass is harvested and purified. Genetically modified bacteria is used to produce human insulin. Which is used to treat diabetes.	

Lessons 1 & 2 Generators	Lesson 3 The Alternator	Lesson 4 Uses of the motor & generator effect
If an electrical conductor moves relative to a magnetic field or if there is a change in the magnetic field around a conductor, a potential difference is induced across the ends of the conductor.  If the conductor is part of a complete circuit, a current is induced in the conductor. This is called **the generator effect**. An induced current generates a magnetic field that opposes the original change, either the movement of the conductor or the change in magnetic field An induced potential difference or induced current will increase if: • the speed of movement is increased • the magnetic field strength is increased • the number of turns on the coil is increased	The generator effect is used in an alternator to generate ac and in a dynamo to generate dc.  The maximum potential difference or current can be increased by: • increasing the rate of rotation • increasing the strength of the magnetic field • increasing the number of turns on the coil	Microphones use the generator effect to convert the pressure variations in sound waves into variations in current in electrical circuits. In a moving-coil microphone: 1. Pressure variations in sound waves cause the flexible diaphragm to vibrate 2. The vibrations of the diaphragm cause vibrations in the coil 3. The coil moves relative to a permanent magnet, so a potential difference is induced in the coil 4. The coil is part of a complete circuit, so the induced potential difference causes a current to flow around the circuit 5. The changing size and direction of the induced current matches the vibrations of the coil 6. The electrical signals generated match the pressure variations in the sound waves Loudspeakers use the motor effect to convert variations in current in electrical circuits to sound waves. 

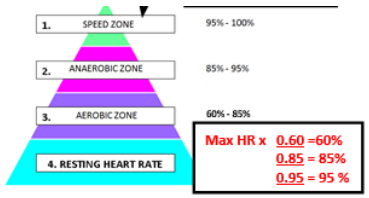
Lesson 5 Transformers	Lesson 6 Transformer Calculations	
A basic transformer consists of a primary coil and a secondary coil wound on an iron core. Iron is used as it is easily magnetised.  When a transformer is working: 1. A primary voltage drives an alternating current through the primary coil 2. The primary coil current produces a magnetic field, which changes as the current changes 3. The iron core increases the strength of the magnetic field 4. The changing magnetic field induces a changing potential difference in the secondary coil 5. The induced potential difference produces an alternating current in the external circuit	The ratio of the potential differences across the primary and secondary coils of a transformer V_p and V_s depends on the ratio of the number of turns on each coil, n_p and n_s $$\frac{primary\ voltage}{secondary\ voltage} = \frac{number\ of\ turns\ on\ primary\ coil}{number\ of\ turns\ on\ secondary\ coil}$$ $$\frac{V_p}{V_s} = \frac{n_p}{n_s}$$ • Potential difference, Vp and Vs in volts, V • In a step-up transformer Vs > Vp • In a step-down transformer Vs < Vp • If transformers were 100% efficient, the electrical power output would equal the electrical power input. Assuming that a transformer is 100 per cent efficient, the following equation can be used to calculate the power output from the transformer: potential difference across primary coil × current in primary coil = potential difference across secondary coil × current in secondary coil $V_p \times I_p = V_s \times I_s$	

Year 11 Spanish Knowledge Organiser cycle 1

Complete your weekly assignment on Seneca

Extensions:

- Create revision cards for each of the main tenses studied to help you remember how to form them.
- Find a picture in a magazine/online and write a photo description
- Do 10 minutes of Duolingo every day to build your vocabulary
- Write a glossary of vocabulary we see in class – memorise it and test yourself at home.

	Week 1	Week 2	Week 3	Week 4	Week 5
BTEC SPORT UNIT 1	**Components of Fitness Learning aim A** **Physical Fitness** 1. Body Composition 2. Aerobic Endurance 3. Strength (Muscular) 4. Speed 5. Flexibility 6. Muscular Endurance **Skill - related Fitness** 1. Co-ordination 2. Reaction time 3. Agility 4. Balance 5. Power Can you link these components to different sports?	**Exercise Intensity Learning aim A** 220-Age=Max HR Training Pyramid  BORG Scale – Rating of Perceived Exertion (RPE)  RPE x 10 = Heart rate bpm E.g Level 13 x 10 =130bpm	**Principles of Training Learning aim A** **FITT Principle** Frequency – How often do you train? (How many times a week) Intensity – How hard do you train? (Heart rate/pyramid, BPM, BORG scale RPE) Time – How long you train for? (min. 30mins) Type – What type of training method (e.g. weight, circuit, interval…?) **SPARRV Principle** Specificity – training specific to the individual needs of athlete (Sport, Position, Component of fitness, Age, Gender) Progressive Overload – Make training gradually harder so body gradually improves and adapts (increase *FREQUENCY/INTENSITY/TIME)* Adaptation – Body adapts in response to training (gets stronger because of strength training etc.) Rest and Recovery –Allows adaptation to take place and to avoid injuries due to fatigue/tiredness (have rest days) Reversibility – Body will reverse back if training is stopped for a prolonged time (illness, injury, and motivation) Variation – Training must be varied to avoid boredom (use different *TYPEs* of training methods)	MID CYCLE ASSESSMENT OF LEARNING AIM A List 3 areas you need to improve on from Learning aim A 1 2 3 **Learning aim B** **Warm up** - Pulse raiser, stretches, joint mobilisation **Cool down** – Pulse lowering, Static stretches, Developmental stretches (PNF)	**Flexibility training** **1. Static Stretching – Active (you), Passive (someone/thing else)** **2. Ballistic Stretching – bouncing, actions** **3. PNF Stretching – stretch, hold, tension, stretch further** **Strength, muscular endurance and power training** **1. Free weights – Sets, reps, barbell, dumbbell** **2. Circuit Training – stations** **3. Plyometric – bouncing, throwing, jumping**

	Week 6	Week 7	Week 8	Week 9	Week 10
BTEC SPORT UNIT 1	**Aerobic Endurance Training** **1. Continuous training – non-stop 30 mins** **2. Fartlek Training – 'Speed play', slow, medium, fast/different terrain** **3. Interval Training – work, rest, work, rest** **Speed Training** **1. Hollow Sprint - broken up by 'hollow' lower level work** **2. Acceleration Sprints - jogging to striding and finally to sprinting at maximum speed.** **3. Interval Training -– work, rest, work, rest**	MID CYCLE ASSESSMENT OF LEARNING AIM A List 3 areas you need to improve on from Learning aim A 1 2 3 **Learning aim C** Why are tests important? Pre-test procedures: • Consent • Calibration of equipment Accurate measurements and recording results Reliability, validity and practicality	**Muscular Endurance** **Sit up and press up tests** Count how many sit ups or press-ups completed in 1 minute ✓ Quick and easy ✓ Little equipment ✓ Large groups at once ➢ Arguments of correct technique can affect results **Power** **Vertical Jump test** Stand side on to wall reach up and mark/set the measure. Standing jump as high as possible touching wall. Measure between two marks/measures ✓ Quick and easy ➢ Technique can affect result as need to jump and mark wall **Strength** **Grip dynamometer** 3 attempts, squeeze grip dynamometer measure result in Kg or KgW. ✓ Simple and easy test ✓ Lots of normative data ➢ Must be adjusted for hand size which may affect results **Flexibility** **Sit and Reach test** Both feet against the **sit and reach box**, reach forward and measure result in centimetres ✓ Well known test ✓ Quick and easy to perform ➢ measures lower back & hamstrings only ➢ length of arms and legs affect results	**Agility** **Illinois Agility test** Cones set up as in the image, lie face down on the floor at the start, measure time to complete course in seconds ✓ Cheap and easy to conduct ➢ Human error with timing can affect results ➢ Weather or surface conditions can affect results **Speed** **35m sprint test** Sprint from one line/cone to another in a straight line over 35m. Record time and compare to normative data ✓ Little equipment so cheap to run ➢ Human error when timing can affect results **Aerobic Endurance** **Multi Stage Fitness Test (MST/Bleep test)** Cones/Lines **20m apart**, run in-between to the sound of a beep. **Gradually gets faster**. Longer you can keep up the higher the level ✓ Can test a large group at once ✓ Tests to maximum effort ➢ Practice can affect score ➢ If outside environment may affect ➢ Scores can be subjective **Forestry Step Test** Step/ bench- 33cm for females and 40cm for males. Step up and down for 5 minutes to a metronome. **(90bpm/22.5steps a min)**. Record pulse and compare to table ✓ Low cost ✓ Can be performed inside or outside ✓ Can test on your own ➢ People may struggle to keep with the stepping pace on metronome	**Body Composition** **Body Mass Index (BMI)** $BMI = \frac{\text{Weight (kg)}}{\text{Height (m)} \times \text{Height (m)}}$ ➢ Easy to carry out ➢ Results can be misleading as muscles weighs more than fat **Bioelectrical Impedance Analysis (BIA)** BIA = electricity passed through body from **WRIST** to **ANKLE.** Measures the resistance from muscle and fat ✓ Quick and gives instant results ✓ Can be repeated over time with no bad effects ➢ Needs expensive equipment **Sum of Skinfolds** Use **CALLIPERS** to measure skin on the **BICEP, TRICEP, SHOULDER BLADE** and **HIP.** Add measurements together and use to the **JACKSON-POLLOCK** nomogram (4 lines) • Provides accurate percentages of body fat ➢ Needs specialist equipment ➢ Problems with people revealing bare skin