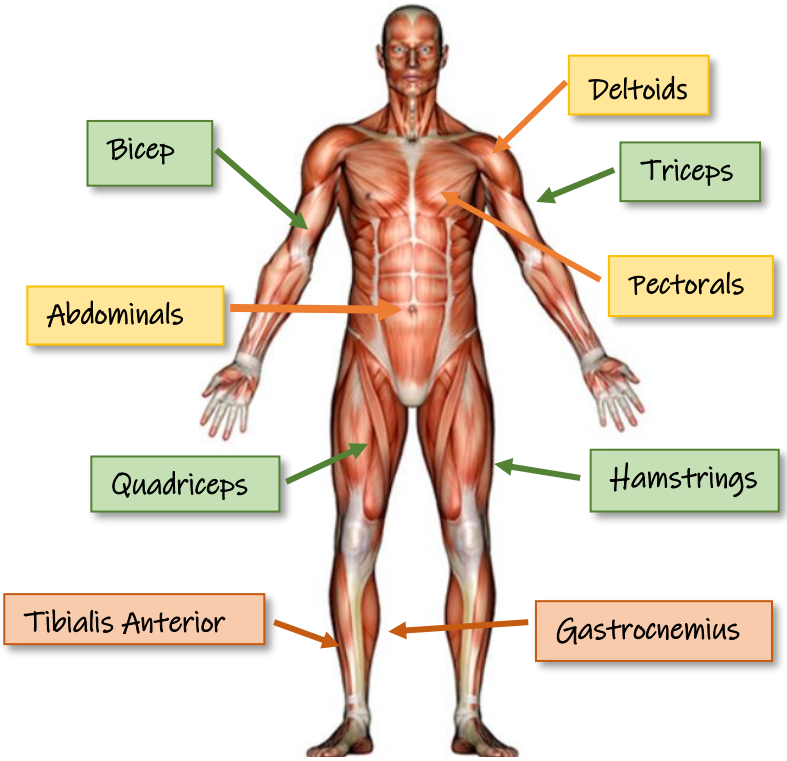
Year 7 knowledge Organiser



Key	
	Advanced
	Secure
	Developing

		Examples
Flexion	Decreasing the angle at a joint	Preparation phase when kicking a football (Knee bending)
Extension	Increasing the angle at a joint	Execution phase when kicking a football (Knee straightening)
Planta-flexion	Increasing the angle at the ankle joint	Pointing your toes when performing an arabesque
Dorsi-flexion	Decreasing the angle at the ankle joint	Preparation phase during a jump shot in basketball
Abduction	Moving limbs away from the centreline of the body	Abducting the shoulder when preparing to bat in rounders
Adduction	Moving limbs towards the centreline of the body	Adducting the shoulder during the executing phase when batting in rounders
Muscular Endurance	Ability of a muscle or to contract over a sustained period.	Middle-distance running, rowing or swimming
Cardiovascular Endurance	The ability of the heart and lungs to supply oxygen to the working muscles	long-distance runners, team sports performers, endurance cyclists and rowers
Agility	The ability to move and change direction quickly (at speed) whilst maintaining control	A footballer needs agility to change direction quickly whilst dribbling the ball to outwit the defender
Power	Strength x speed	A basketballer needs power in the quadriceps when jumping to perform a lay-up.
Reaction Time	The time taken to initiate a response to a stimulus	A sprinter needs good reaction time to respond to the starting gun.
Flexibility	The range of movements possible at a joint	A gymnast needs good flexibility to be able to perform movements such as, the splits
Coordination	The ability to use different (two or more) parts of the body together, smoothly and efficiently	A cricket player needs coordination when hitting a cricket ball with a bat

Short term-effects

Warm-up

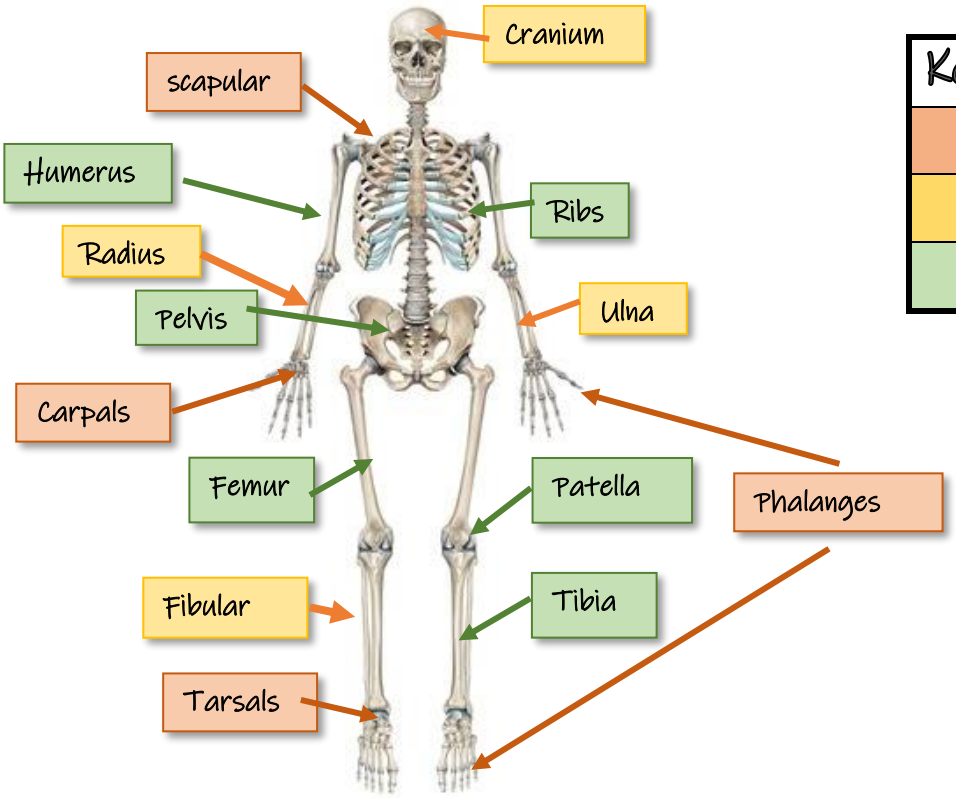
Cardiovascular warm-up
e.g. jogging

- Increases heart rate
- Increases breathing rate
- Increases temperature

Dynamic stretches
E.g. high knees, heel flicks

- Increases flexibility
- Reduces injury
- Mental preparation

Year 8 knowledge Organiser



Key	
	Advanced
	Secure
	Developing

		Examples
Long Bones	Femur, tibia, fibular, radius, ulnar, phalanges	Generates large, gross movements e.g. Running in netball
Short Bones	Carpals and tarsals	Generates small, fine movements putting in golf at the wrist.
Flat bones	Pelvis, cranium, scapular	Protect vital organs e.g. the cranium protects the brain when heading a football.
Agonist	When the muscle contacts and shortens	During flexion at the elbow the bicep contacts
Antagonist	When the muscle relaxes and contacts	During flexion at the elbow the triceps relax
HIIT	- Alternating between periods of short intense anaerobic exercise with less intense recovery periods	Sprinters Improves speed
Fartlek training	Swedish for 'speed play'. Periods of fast work with intermittent periods of slower work. Often used in running, i.e. sprint, jog, walk, jog, sprint, etc.	Games players that shift between aerobic and anaerobic energy systems. Improves cardio- vascular fitness & muscular endurance
Circuit training	A series of exercise stations (5-7) whereby periods of work are mixed with periods of rest.	Any games player that would like to improve any component of fitness or skills.
Continuous training	Involves working for a sustained period of time without rest.	Long distance runners Improves cardio- vascular fitness
Weight Training	The use of weights or resistance to cause adaptation to the muscles	Rugby players, weight lifters Improves strength, power and muscular endurance.
FIT	Frequency – how often you train	Training twice a week
	Intensity– how hard you train	Speed, level, intensity or weight
	Time – the length of the training session	Training for 45mins per session to 50mins
Aerobic	Respiration that takes place with oxygen	Long duration/low-moderate intensity e.g. Long-distance runner
Anaerobic	Respiration that takes place in the absence of oxygen.	Shot duration/high intensity e.g. a sprinter (100-400m)

Long term-effects of exercise

- Improves the cardiovascular system
- Lower resting HR (continuous training)
- Decreases fat stores
- Improves components of fitness e.g. flexibility, strength, muscular endurance.

Key	
	GCSE
	Advanced
	Secure
	Developing

Year 9 knowledge Organiser

AO3- Analyse and evaluate

		Examples
Isometric	When the muscle contracts but does not change in length	e.g. Handstand, a gymnast holding the crucifix
Isotonic contraction	Concentric contraction - shortening of the muscle	e.g. execution phase of a chest pass (extension at the elbow)
	Eccentric contraction - lengthening of the muscle	e.g. downwards phase of a squat during the preparation phase of a basketball set shot (flexion at the knees)
SPORT	Specificity- Making training specific to the sport being played	• movements used • muscles used • energy system(s) used
	Progressive Overload- Gradual increase of the amount of overload so that fitness gains occur, but without potential for injury.	Frequency – how often you train e.g. training twice a week and increasing this to three times a week
		Intensity – how hard you train e.g. speed, level, intensity or weight e.g. from 20 reps to 22 reps
		Time – the length of the training session e.g. training for 45mins per session to 50mins.
		type – the specific method, e.g. continuous training. Refer to year 8 knowledge Organiser
	Reversibility -Losing fitness levels when you stop exercising. This could be caused by gaps in training or due to an injury	To avoid- use the SAFER principles - Stretch before training, appropriate intensity, correct footwear and clothing and correct rest and recovery.
	Tedium - Boredom that can occur from training the same way every time.	Variety is needed: changing the exercises, method of training or listening to music.
Aerobic	Summarised as: glucose + oxygen → energy + carbon dioxide + water.	When exercise is low to moderate intensity, the heart can supply all the oxygen that the working muscles need. Sports: long distance runners,
Anaerobic	Summarised as: glucose → energy + lactic acid	When exercise duration is short and at high intensity, the heart and lungs cannot supply blood and oxygen to muscles as fast as the respiring cells need them. Sports: sprinters, shotput, long jumpers etc.
Aerobic training zone	The aerobic training zone allows the aerobic system to be trained. 1. Calculate maximum heart rate (220 bpm) minus age: 220-age 2. Work at 60-80% of maximum heart rate.	Types of training: Continuous, long interval
anaerobic training zone	The anaerobic training zone- 80-90% of Maximum heart rate.	Types of Training: Short interval, plyometric

Short term-effects of exercise

- Increases heart rate
- Increases tidal volume

- Increases stroke volume (SV)
- Increase cardiac output
- Increases Temperature: vasodilation

Long term-effects of exercise

- Decreases fat stores
- Improves components of fitness e.g. flexibility, strength, muscular endurance.

- Lower resting HR 60> bradycardia
- Increased cardiac muscle (SV)-hypertrophy