COMPONENTS OF FITNESS

OCR GCSE PE • GRADE 9 KNOWLEDGE ORGANISER

DEFINE • TEST • APPLY • ANALYSE

01 CARDIOVASCULAR ENDURANCE



DEFINITION

Ability of the heart, lungs and blood vessels to deliver O_2 to working muscles during sustained exercise.

OCR TEST • SCORE • DIRECTION

Cooper 12-min run: distance (m) ↑
MSFT: final level/shuttle ↑

SPORTING APPLICATION

Football midfielder: sustains work rate across both halves.

GRADE 9 PRECISION

Delays fatigue → maintains pace + technique.

02 MUSCULAR ENDURANCE



DEFINITION

Ability of a muscle or muscle group to make repeated contractions without fatigue.

OCR TEST • SCORE • DIRECTION

Press-up / sit-up test: valid repetitions in the set time ↑

SPORTING APPLICATION

Rowing: legs, back and arms repeat contractions each stroke.

GRADE 9 PRECISION

Name muscle + repeated action; not max strength.

03 SPEED



DEFINITION

Maximum rate at which the whole body or a body part can move, or cover a distance.

OCR TEST • SCORE • DIRECTION

30 m sprint: time (s) ↓
Speed = distance ÷ time

SPORTING APPLICATION

Football winger: accelerates into space and outruns a defender.

GRADE 9 PRECISION

Stimulus response = reaction; movement = speed.

04 STRENGTH



DEFINITION

The maximum force a muscle or muscle group can exert in one contraction.

OCR TEST • SCORE • DIRECTION

Grip dynamometer: kg or N ↑
1RM: maximum load (kg) ↑

SPORTING APPLICATION

Rugby scrum: applies high force against opposition.

GRADE 9 PRECISION

Press-ups = endurance; 1RM = max strength.

05 POWER



DEFINITION

Ability to exert force quickly: strength applied at speed.

OCR TEST • SCORE • DIRECTION

Vertical / standing broad jump: height or distance (cm/m) ↑

SPORTING APPLICATION

High jump take-off: explosive leg drive produces height.

GRADE 9 PRECISION

Force + speed → explosive height / distance.

06 FLEXIBILITY



DEFINITION

The range of movement available at a joint.

OCR TEST • SCORE • DIRECTION

Sit-and-reach: reach distance (cm) ↑; knees straight, no bouncing.

SPORTING APPLICATION

Hurdles: hip range lets the trail leg clear efficiently.

GRADE 9 PRECISION

Name the joint → explain the technique effect.

07 AGILITY



DEFINITION

Ability to change direction at speed while remaining under control.

OCR TEST • SCORE • DIRECTION

Illinois agility test: completion time (s) ↓

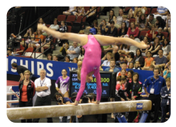
SPORTING APPLICATION

Netball dodge: changes direction quickly to create space.

GRADE 9 PRECISION

Direction change + speed + control.

08 BALANCE



DEFINITION

Ability to maintain the body's centre of mass over its base of support.

OCR TEST • SCORE • DIRECTION

Stork stand: time held (s) ↑

SPORTING APPLICATION

Football kick: controls the body over one supporting foot.

GRADE 9 PRECISION

Static/dynamic: centre of mass over base.

09 CO-ORDINATION



DEFINITION

Ability to use two or more body parts together smoothly and efficiently.

OCR TEST • SCORE • DIRECTION

Wall-throw test: valid alternate-hand catches in set time ↑

SPORTING APPLICATION

Tennis serve: times toss, leg drive, trunk and racket swing.

GRADE 9 PRECISION

Name body parts → link timing to control.

10 REACTION TIME



DEFINITION

Time taken from presentation of a stimulus to the start of the response.

OCR TEST • SCORE • DIRECTION

Ruler-drop test: catch distance (cm) or converted time (s) ↓

SPORTING APPLICATION

Swimming start: hears the signal and leaves the block sooner.

GRADE 9 PRECISION

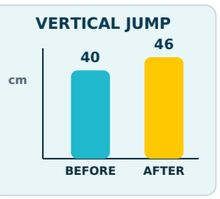
Stimulus → response begins → exact advantage.

11 FITNESS-TEST SCORE KEY

↑ HIGHER IS BETTER: distance • level • repetitions • load • jump/reach • balance time • catches

↓ LOWER IS BETTER: sprint time • agility time • ruler distance/reaction time

12 DATA, CALCULATIONS & GRAPHS



CHANGE

new − original
46 − 40 = +6 cm

% CHANGE

change ÷ original × 100
6 ÷ 40 × 100 = 15%

GRADE 9 INTERPRETATION

The score rose from 40 cm to 46 cm: +6 cm / 15%. This shows improved power, helping a basketball player jump higher for a rebound.

READ DATA PRECISELY

Check title, axes, scale and key • quote values with units • calculate • explain the performance effect. Quantitative = numerical; qualitative = descriptive.

13 GRADE 9 ASSESSMENT PRECISION

AO1 • KNOW

precise definitions • recognised tests/protocols • score, unit and direction

AO2 • APPLY

name performer, movement and phase • match the demand to the component

AO3 • ANALYSE

explain how and why • quote evidence • compare and reach a supported judgement

GRADE 9 PERFORMANCE CHAIN

phase → demand → component + definition → how used → observable effect → evidence / judgement

14 GRADE 9 WRITING FRAMEWORK & MODEL

BLANK FRAMEWORK

During the _____ phase of _____, the performer requires _____. This is defined as _____. It is needed because _____, allowing _____ and resulting in _____. It can be measured using _____; a _____ result shows improvement.

MODEL ANSWER • KEY INFORMATION IN BLUE

During the start of a 50 m freestyle race, the swimmer requires fast reaction time: the time from the starter's signal to the start of the response. Leaving the block sooner creates an early advantage and may reduce race time. The ruler-drop test measures it; a lower distance shows improvement.

SELF-CHECK: exact phase • precise definition • cause/effect • named test • score direction

15 COMMON MISTAKES TO ELIMINATE

× Sport only? Name the exact movement phase and performance effect.
× Power ≠ strength. Power is force exerted quickly.
× Speed ≠ reaction time. Reaction ends as the response begins.
× Muscular ≠ cardiovascular endurance. Local repeated work differs from whole-body O_2 delivery.
× Straight sprint ≠ agility. Agility includes a controlled direction change.
× Give the test protocol, score and unit; timed tests usually improve downwards.
× For percentage change, divide by the original score.
× Replace 'improves performance' with an exact effect on time, distance, force, control, accuracy or fatigue.

DEFINE IT • APPLY IT • EXPLAIN IT • EVIDENCE IT

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