Experimental programme

International Baccalaureate · IB Diploma · Sports, Exercise and Health Science · HL · Vocabulary in context

Word	Example
research question /rɪˈsɜːtʃ ˈkwestʃn/	A good **research question** names what you change and what you measure.
independent variable /ˌɪndɪˈpendənt ˈveərɪəbl/	The **independent variable** is the one you change.
dependent variable /dɪˈpendənt ˈveərɪəbl/	The **dependent variable** is the one you measure.
controlled variable /kənˈtrəʊld ˈveərɪəbl/	pH is a **controlled variable**: keep it the same. pH
hypothesis /haɪˈpɒθəsɪs/	Our **hypothesis** predicts more growth in brighter light.
null hypothesis /nʌl haɪˈpɒθəsɪs/	The **null hypothesis** says there is no difference between the groups.
learning effect	A **learning effect** improves scores through familiarity with the test.
counterbalancing /ˈkaʊntəbælənsɪŋ/	**Counterbalancing** changes condition order across participants.
pilot study	A **pilot study** checks the method before the main investigation.
double-blind /ˈdʌbl blaɪnd/	In a **double-blind** study, neither the athletes nor the testers know who got the real drink.

Word	Example
placebo /plə'si:bəʊ/	A **placebo** resembles a treatment but lacks its active ingredient.
informed consent /ɪn'fɔ:md kən'sent/	Get **informed consent** before you interview people.
anonymous	An **anonymous** questionnaire does not identify the respondent.
validity /væ'lɪdɪti/	A test has **validity** when it measures what it is intended to measure.
reliability /rɪˌlaɪə'bɪlɪti/	Similar repeated test results indicate **reliability**.
internal validity	Good control of other factors improves **internal validity**.
external validity	**External validity** asks whether results apply outside the study.
ecological validity	**Ecological validity** asks whether a test is like a real game.
normative data	**Normative data** let an athlete compare results with others of the same age.
random error /'rændəm 'erə/	Small changes in your reaction time cause a **random error**.
systematic error /ˌsɪstə'mætɪk 'erə/	A scale that reads too high gives a **systematic error**.
calibration /ˌkælɪ'breɪʃn/	**Calibration** checks a thermometer against known temperatures.

Word	Example
biological variation	Daily changes in the body cause **biological variation** in test results.
mean /miːn/	Add the three readings and divide by three to find the **mean**.
standard deviation /ˈstændəd ˌdiːvɪˈeɪʃn/	A larger **standard deviation** means the values are more spread out.
coefficient of variation	The **coefficient of variation** shows how spread out results are compared with the average.
error bar /ˈerə bɑː/	An **error bar** shows the range of uncertainty around a point.
scatter graph /ˈskætə græf/	A **scatter graph** plots paired values for two variables.
statistically significant /stəˈtɪstɪkli sɪgˈnɪfɪkənt/	A **statistically significant** result is unlikely to be due to chance alone.
pearson's correlation coefficient	**Pearson's correlation coefficient** shows how strongly two sets of numbers follow a straight line.
critical value /ˈkrɪtɪkl ˈvæljuː/	The **critical value** is the edge of the critical region.
scientific investigation	A **scientific investigation** collects evidence to answer a focused question.
collaborative sciences project	In the **collaborative sciences project**, students from different sciences work together.

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