6 · Practical Skills in Biology II

Pearson Edexcel · International A-Level · Biology · Vocabulary in context

Word	Example
investigation /ɪnˌvestɪ'geɪʃn/	Plan an **investigation** with one independent and one dependent variable.
hypothesis /haɪ'pɒθəsɪs/	Our **hypothesis** predicts more growth in brighter light.
respirometers	**Respirometers** measure oxygen uptake by small organisms.
spirometers	**Spirometers** record tidal volume and breathing rate.
quadrats	Place **quadrats** at random coordinates to sample plants.
transects	Use **transects** to show how a species changes across a habitat.
abiotic /ˌæbɪ'ɒtɪk/	Light intensity is an **abiotic** factor affecting plant distribution.
abundance /ə'bʌndəns/	Chlorine-35 has an **abundance** of 75%. Chlorine-35 75%
turbidity /tɜː'bɪdɪti/	Mud raises the **turbidity** of river water.
Aseptic	**Aseptic** technique keeps unwanted microbes out of the culture.
Zones of inhibition	Larger **zones of inhibition** show a more effective antibiotic.
redox indicator /rɪ'dɒks 'ɪndɪkeɪtə/	A **redox indicator** changes colour as its oxidation state changes.

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tidal volume	**Tidal volume** is the air moved in one normal breath.
minute ventilation /'mɪnɪt ˌventɪ'leɪʃn/	**Minute ventilation** equals tidal volume multiplied by breathing rate.
Ethics /'eθɪks/	**Ethics** includes freely given, informed consent in human investigations.
informed consent /ɪn'fɔːmd kən'sent/	Get **informed consent** before you interview people.
dependent variable /dɪ'pendənt 'veərɪəbl/	The **dependent variable** is the one you measure.
control variables /kən'trəʊl 'veərɪəblz/	Keep the **control variables**, such as the temperature, the same.
standard deviations	**Standard deviations** show the spread of the repeat readings.
t-test /tiː test/	A **t-test** assesses evidence for a difference between two means.
correlation /ˌkɒrɪ'leɪʃn/	A **correlation** links two variables without proving cause.
Limitations /ˌlɪmɪ'teɪʃnz/	**Limitations** are problems with the method that cannot be fully controlled.
Random sampling /'rændəm 'sæmplɪŋ/	**Random sampling** avoids choosing sites by personal preference.
coordinate /kəʊ'ɔːdɪnət/	Each random **coordinate** pair gives one quadrat position.

Word	Example
magnification /ˌmægnɪfɪ'keɪʃn/	The microscope gives a **magnification** of 400 times.
dilution plating /daɪ'luːʃn 'pleɪtɪŋ/	Use **dilution plating** to estimate viable cells in a suspension.
serially dilute	**Serially dilute** the culture so the colonies are few enough to count.
colonies	Separate **colonies** appear as small spots on the agar.
contamination /kənˌtæmɪ'neɪʃn/	Keep the fermenter clean to stop **contamination**.
dilution factor	Multiply the colony count by the **dilution factor**.
error bars /'erə bɑːz/	**Error bars** show a stated measure of spread or uncertainty.
significant	A **significant** result is unlikely to be due to chance.
degrees of freedom /dɪ'griːz ɒv 'friːdəm/	A mechanism with one **degree of freedom** needs one motor.
critical value /'krɪtɪkl 'væljuː/	The **critical value** is the edge of the critical region.
null hypothesis /nʌl haɪ'pɒθəsɪs/	The **null hypothesis** says there is no difference between the groups.
negative correlation /'negətɪv ˌkɒrɪ'leɪʃn/	There is a **negative correlation** between price and sales.
line graph /laɪn græf/	Use a **line graph** to show how absorbance changes over time.
continuous /kən'tɪnjuːəs/	Time is a **continuous** variable.

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Word	Example
axes /'æksɪz/	Draw the x and y **axes**.
scales /skeɪlz/	Use linear **scales** that fill most of the grid.
anomalous /ə'nɒmələs/	Repeat the sampling to check an **anomalous** reading.