Photosynthesis

A-Level Biology · Vocabulary in context

Word	Example
photosynthesis /ˌfəʊtəʊˈsɪnθəsɪs/	Plants make sugar by **photosynthesis**.
chloroplast /ˈklɔːrəʊplæst/	A **chloroplast** carries out photosynthesis.
thylakoid /ˈθaɪləkɔɪd/	Each **thylakoid** is a flat sac inside the chloroplast where light is absorbed.
grana /ˈgrɑːnə/	**Grana** are stacks of thylakoids, like piles of coins.
stroma /ˈstrəʊmə/	The **stroma** is the fluid in the chloroplast where the Calvin cycle happens.
light-dependent stage /laɪt dɪˈpendənt steɪdʒ/	In the **light-dependent stage**, light energy makes ATP and splits water. ATP
reduce /rɪˈdjuːs/	NAD is **reduced** when it picks up hydrogen. NAD
light-independent stage /laɪt ˌɪndɪˈpendənt steɪdʒ/	The **light-independent stage** uses ATP to turn carbon dioxide into sugar. ATP
Calvin cycle /ˈkælvɪn ˈsaɪkl/	In the **Calvin cycle**, carbon dioxide is turned into sugar in the stroma.
carbon dioxide /ˈkɑːbən daɪˈɒksaɪd/	We breathe out **carbon dioxide**.
pigment /ˈpɪgmənt/	Chlorophyll is a green **pigment**.
chlorophyll /ˌklɔːrəʊˈfɪl/	**Chlorophyll** makes leaves green.
carotene /ˈkærətiːn/	**Carotene** is an orange pigment that helps absorb light.

exercises.lol exercises.com.cn

Word	Example
xanthophyll /ˈzænθəfɪl/	**Xanthophyll** is a yellow pigment in leaves.
absorption spectrum /əbˈsɔːpʃn ˈspektrəm/	An **absorption spectrum** has dark lines.
action spectrum /ˈækʃn ˈspektrəm/	The **action spectrum** shows that red and blue light give the fastest photosynthesis.
chromatography /krəʊməˈtɒgrəfi/	**Chromatography** separates the dyes in ink.
Rf value /ˌɑːrˈef ˈvæljuː/	The **Rf value** is the distance the spot moves divided by the distance the solvent moves.
photophosphorylation /ˌfəʊtəʊˌfɒsfɔːrɪˈleɪʃn/	In **photophosphorylation**, light energy is used to make ATP. ATP
cyclic photophosphorylation /ˈsaɪklɪk ˌfəʊtəʊˌfɒsfɔːrɪˈleɪʃn/	**Cyclic photophosphorylation** makes ATP but no reduced NADP. ATP NADP
photosystem /ˌfəʊtəʊˈsɪstəm/	A **photosystem** is a group of pigments that catch light energy.
photoactivation /ˌfəʊtəʊˌæktɪˈveɪʃn/	In **photoactivation**, light gives an electron extra energy so it leaves the chlorophyll.
electron /ɪˈlektrɒn/	An **electron** has a negative charge.
non-cyclic photophosphorylation /nɒn ˈsaɪklɪk ˌfəʊtəʊˌfɒsfɔːrɪˈleɪʃn/	**Non-cyclic photophosphorylation** makes ATP, reduced NADP and oxygen. ATP、 NADP
oxygen-evolving complex /ˈɒksɪdʒn ɪˈvɒlvɪŋ ˈkɒmpleks/	The **oxygen-evolving complex** splits water and releases oxygen.

Word	Example
photolysis /fəʊˈtɒləsɪs/	In **photolysis**, light splits water into hydrogen ions, electrons and oxygen.
oxygen /ˈɒksɪdʒn/	Your cells need **oxygen** to release energy.
electron transport chain /ɪˈlektrɒn ˈtrænspɔːt tʃeɪn/	The **electron transport chain** passes electrons along proteins in the inner membrane.
proton /ˈprəʊtɒn/	A **proton** has a positive charge.
ATP synthase /ˌeɪ tiː ˈpiː ˈsɪnθeɪs/	**ATP synthase** makes ATP as hydrogen ions flow through it.
chemiosmosis /ˌkemɪəzˈməʊsɪs/	In **chemiosmosis**, hydrogen ions flow back through the membrane and drive ATP synthase.
fixation /fɪkˈseɪʃn/	The **fixation** of carbon dioxide turns it into a sugar.
enzyme /ˈenzaɪm/	The **enzyme** speeds up the reaction.
regenerate /riːˈdʒenəreɪt/	The Calvin cycle must **regenerate** RuBP so it can keep going.
amino acid /əˈmiːnəʊ ˈæsɪd/	Glycine is the simplest **amino acid**.
carbohydrate /ˌkaːbəʊˈhaɪdreɪt/	Glucose is a simple **carbohydrate** used in respiration.
lipid /ˈlɪpɪd/	Fats and oils are **lipids**, and they do not mix with water.
limiting factor /ˈlɪmɪtɪŋ ˈfæktə/	On a dark day, light is the **limiting factor** for photosynthesis.
light intensity /laɪt ɪnˈtensɪti/	Photosynthesis is faster at a higher **light intensity**.

exercises.lol exercises.com.cn

Word	Example
concentration /ˌkɒnsənˈtreɪʃn/	The **concentration** of the acid is 2 mol/dm^3.
temperature /ˈtemprɪtʃə/	The thermometer shows the water's **temperature**.
indicator /ˈɪndɪkeɪtə/	The **indicator** changes colour at the end point.
wavelength /ˈweɪvleŋθ/	The **wavelength** is the distance from one crest to the next.
aquatic plant /əˈkwætɪk plænt/	Pondweed is an **aquatic plant**: it grows under water.