

ANIMAL SURVIVAL

THE NEED FOR FOOD

omnivore

an animal which eats both plants and other animals

既吃植物也吃其他动物的动物

carnivore

an animal which eats only other animals

只吃其他动物的动物

herbivore

an animal which eats only plants

只吃植物的动物

incisor

a tooth used for biting food

用于切割食物的牙齿

canine

a tooth used for gripping and tearing food

用于撕咬食物的牙齿

premolar / molar

a tooth used for grinding and chewing food

用于咀嚼食物的牙齿

digestion

the breakdown of food into small soluble molecules

将食物分解成细小的可溶于水的分子

alimentary canal

a long tube that makes up the digestive system

构成消化系统的长管

digestive juices

enzymes that speed up the breakdown of food

加速食物分解的酶

WATER AND WASTE

(animal survival 3)

kidney

organ which removes poisonous waste from the blood

将有毒的废物从血液中排除的器官

renal artery

carries blood to the kidney for cleaning

将血液输入肾脏加以清洗

renal vein

carries cleaned blood away from the kidney

将清洗过的血液从肾脏输出

ureter

carries urine from the kidney to the bladder

将尿液从肾脏输入膀胱

bladder

stores urine

贮藏尿液

urea

poisonous waste in the blood

在血液中的有毒废物

nephron

tube that filters the blood

过滤血液的管道

glomerulus

group of tiny capillaries

毛细血管组

Bowman's Capsule

the top part of a nephron

肾单位的端部

ADH

(animal survival 4)

anti-diuretic hormone. It controls water loss and gain.

抗利尿荷尔蒙, 它控制水份的得失

urine

water, urea and other waste substances removed from the blood

从血液中排除的水份, 尿素和其他废物

REPRODUCTION IN ANIMALS

(animal survival 5)

asexual reproduction

only one parent is involved; no sex cells are produced

只有一方参与；没有性细胞繁殖

sexual reproduction

two parents are involved; sex cells are produced

双方参与；有性细胞繁殖

external fertilisation

sperm and eggs meet outside the body

精子和卵子在体外相遇

internal fertilisation

sperm and eggs meet inside the body

精子和卵子在体内相遇

gametes

sex cells

性细胞

embryo

small ball of dividing cells that develops into a baby

分裂细胞的小球，会发展成身体

sperm

male sex cell

雄性细胞

ovum / egg

female sex cell

雌性细胞

copulation	(animal survival 6)
sexual intercourse	
性交	
ovaries	
produce eggs	
产生卵子	
oviduct	
tube from the ovary to the womb; fertilisation takes place here	
从卵巢至子宫的管道; 受精在此发生	
uterus	
womb	
子宫	
vagina	
allows sperm to enter the body and baby to exit	
允许精子进入身体和胎儿	
testes	
produce sperm	
产生精子	
sperm tube	
carries sperm from the testes to the urethra	
从睾丸中输送精子到尿道	
urethra	
carries sperm and urine down the penis	
输送精子和尿液到雄性生殖器	
penis	
allows sperm to be placed in the vagina	
允许精子置入雌性生殖器内	

scrotum

(animal survival 7)

sac that holds the testes

包住睾丸的囊

placenta

allows exchange of food, waste and gas between mother and baby

使母体和胎心向交换食物, 废物和空气

amniotic sac

sac filled with fluid that protects the growing baby

充满液体的囊, 保护胎儿的生长

THE WORLD OF PLANTS

GROWING PLANTS

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peristalsis	(World of Plants 2)
contractions of the digestive system that help to move food along	
消化系统帮助移动食物而进行的收缩	
villus	
folds in the lining of the gut that help to increase the surface area	
位于肠胃内壁的褶皱, 帮助增加表面	
MAKING FOOD	
photosynthesis	
the process by which green plants make food	
绿色植物制造食物的过程	
chlorophyll	
the green colour found in plants; used to trap sunlight	
在植物中发现的绿色; 用于吸收阳光	
stoma	
tiny hole, found on the lower surface of leaves; used in gas exchange	
在叶子下部表面的小孔; 用于空气交换	
xylem	
carries water and minerals from the soil to the leaves	
从土壤输送水和矿物质到叶子	
phloem	
carries glucose from the leaves to all parts of the plant	
将葡萄糖从叶子输送到植物的各部分	
Palisade Mesophyll cells	
leaf cells where photosynthesis takes place	
发生光合作用的叶细胞	

Investigating Cells

LIVING CELLS

cell

units that make up all plants and animals

构成所有动植物的单位

cell wall

tough outer layer found in plant cells

在植物细胞中看到的粗糙外层

cell membrane

controls entry and exit of materials from a cell

控制物质从细胞进出

cytoplasm

jelly substance found inside cells

在细胞内看到的胶状物质

nucleus

controls all cell activity

控制所有细胞活动

chloroplast

green structures found in plant cells, involved in making food

在植物细胞内看到的绿色结构组织, 参与制造食物

vacuole

sap-filled bag found in plant cells only

只在植物细胞中才看到的有汁的囊

tissue

a specialised group of cells

特定的细胞组织

organ

different tissues combine to make organs

不同的细胞组织形成器官

CELLS AND ENZYMES

catalyst

a chemical which speeds up a chemical reaction

一种加速化学反应的化学物

enzyme

a biological catalyst

一种生物催化剂

synthesis reaction

a building up reaction

一种合成反应

degradation reaction

a breaking down reaction

一种分解反应

substrate

a substance on which an enzyme acts

酶在其上面作用的物质

product

a substance produced by enzyme reaction

由酶反应而产生的物质

catalase

breaks down hydrogen peroxide to produce water and oxygen

分解过氧化氢而产生水和氧气

amylase

breaks down starch to produce maltose

分解淀粉而产生麦芽糖

phosphorylase

builds up glucose-1-phosphate to produce starch

合成葡萄糖-1-磷酸盐, 产生淀粉

optimum temperature/pH
temperature or pH at which a reaction works best
最佳反应发生的温度和pH值
respiration
the breakdown of food to release energy, carbon dioxide and water
食物分解, 释放能量, 二氧化碳和水
DIFFUSION
selectively permeable membrane
only allows molecules of a certain size through
只允许一定大小的分子通过
turgid
a swollen plant cell that has gained water
获得水份的膨胀植物细胞
plasmolysed
a shrivelled plant that has lost water
失去水份的枯萎植物
osmosis
movement of water molecules through a cell membrane from an area of high to low concentration
水分子从高浓度的地方到低浓度的地方通过细胞膜的运动
diffusion
movement of any other molecule from an area of high to low concentration
任何从高浓度到低浓度地方的其他分子运动

Inheritance

discontinuous variation

organisms can be put into distinct groups (eye colour, hair colour)

可以区分不同类别的有机体(眼睛颜色, 头发颜色)

continuous variation

organisms cannot be put into distinct groups (height, weight)

不可以区分不同类别的有机体(高度, 体重)

chromosome

carries genetic variation

携带基因变异

gene

units that make up chromosomes

构成染色体的单位

allele

form of a gene (tall or short)

基因的一种形式

dominant

a gene, which always show up in offspring. It hides the recessive

常在后代中体现的一种基因。它隐藏隐性性状。

recessive

a gene which only shows up if both alleles are recessive

只有当两个同位基因都是隐性时才显现的一种基因

genotype

a set of genes

一组基因

phenotype

appearance of an organism

一个有机体的外观

homozygous

having a pair of genes the same (AA or aa)

具有一对相同的基因 (AA 或 aa)

heterozygous

having different pairs of genes (Aa)

具有一对不同的基因 (Aa)

F1

The offspring of two parents

两个亲体的后代

F2

The offspring of two F1 parents

两个F₁亲体的后代

monohybrid cross

a cross of two homozygous parents, one dominant, the other recessive

两个同形纯合的亲体, 一个显性, 另外一个隐性的杂交

chromosome mutation

chromosomes are damaged during cell division

在细胞分裂期间染色体受到损害

Down's Syndrome

a condition where human cells contain an extra chromosome

人体细胞包含一个额外染色体的情况

The Body in Action

MOVEMENT

ball and socket joint

allows movement in all directions (shoulder)

允许运动向各方向发生(肩)

hinge joint

allows movement in only one direction (finger)

只允许运动向一个方向发生(指)

ligament

elastic structure that holds bones together at joints

在关节处维系骨头的弹性结构组织

cartilage

acts as a shock absorber

起减震器的作用

synovial membrane

produces synovial fluid

分泌骨液

tendon

non-elastic structure that attaches muscle to bone

将肌肉附着到骨头上的非弹性结构组织

biceps

muscle that contracts to bend arm

收缩以弯曲胳膊的肌肉

triceps

muscle that contracts to straighten the arm

收缩以加强胳膊的肌肉

capillary

tiny blood vessels that join arteries and veins

连接动脉和静脉的细管

red blood cell

RBC - carries oxygen around the body

RBC - 向全身输送氧气

white blood cell

WBC - fights disease

WBC - 与疾病作战

platelets

involved in clotting

参与血凝固

plasma

liquid part of blood

血液的液体部分

THE NEED FOR ENERGY

trachea

windpipe

气管

bronchus

tube connecting the trachea and the lung

连接气管和肺部的管道

bronchioles

small branches of the bronchus

支气管的细小分支

air sac

tiny sac there has exchange takes place

有交换发生的小囊

atrium

top / upper chambers of the heart

心脏的顶/上部心室

ventricle

bottom / lower chambers of the heart

心脏的底/下部心室

valves

structures that stop the heart flowing backwards

阻止心脏向后漂移的结构组织

artery

blood vessel that carries blood away from th heart

从心脏输出血液的血管

vein

blood vessel that carries blood back to the heart

向心脏回输血液的血管

COORDINATION
lens
focuses light on retina
在视网膜上聚光
retina
layer of light-sensitive cells in the eye
眼睛内感光细胞的膜
optic nerve
carries messages from the eye to the brain
将信息从眼睛传递到大脑
cochlea
coiled tube that changes sound vibration into nerve impulses
将声音震动转换成神经脉冲的蜗管
semi-circular canals
control balance
控制平衡
auditory nerve
carries messages from the ear to the brain
将信息从耳朵传递到大脑
sensory nerve
carries messages from the sense organs to the CNS
将信息从感觉器官传递到中枢神经系统
motor nerve
carries messages from the CNS to muscles and glands
将信息从中枢神经系统传递到肌肉和腺
CNS
central nervous system (brain, spinal cord and nerves)
中枢神经系统(大脑, 脊髓和神经)

recovery time

time taken for pulse to return to normal after exercise

脉搏在运动后恢复正常所需的时间

The Biosphere

INVESTIGATING AN ECOSYSTEM

abiotic factors

non-living factors that affect survival (temperature, pH, light intensity and rainfall)

影响生存的非生物因素(温度、pH值、光的强度和雨量)

biotic factors

living factors that affect survival (competition, disease and availability of food)

影响生存的生物因素(竞争、疾病和食物的获得)

ecology

study of ecosystems and the environment

生态系统和环境的研究

quadrant

used to estimate the number of plants in an ecosystem

用于预测在一个生态系统内植物数量

pitfall trap

used to catch small insects at ground level

用于在地面捕捉小昆虫

HOW IT WORKS
ecosystem
a unit made up of living and non-living parts (community and habitat)
构成生物和非生物部分的一个单位(共生区和栖息地)
organism
a living thing
有生命的东西
habitat
place where an organism lives
有机体生活的地方
community
all the animals and plants that live in the one habitat
生活在一个栖息地的所有动物和植物
population
a group of organisms of the one species
一组同一物种的有机体
environment
surroundings
周围环境
producer
green plant that makes its own food
自己生产食物的绿色植物
consumer
eats producers or other consumers to get energy
吃生产有机体或其他消费有机体以获得能量
competition
"fight" for scarce resources (food, light, and water)
为稀有的资源(食物, 光和水)而“搏斗”

decomposer

organism that feeds on dead material

食死物质的有机体