Strengthening the Foundations Workbook

KS3 at Diss High School
Science
Summer ‘catch up’

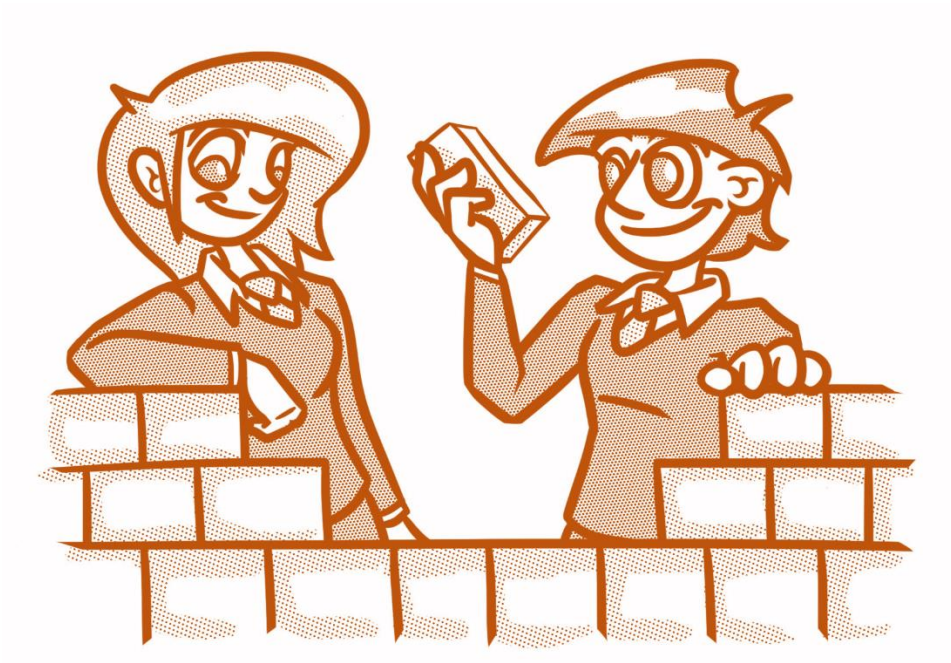
ANSWERS

Hello!

The answer for each question can be found in the appropriate bricks.

If the answer is too long for the brick then it will appear after the brick walls. There will be a letter or number in the brick to help you find the answer.

Good luck!



E

F

cm	mm	µm
1	10	10 000
55	550	550 000
0.3725	3.725	3725

G

Animal cells do not contain cell wall; large vacuole or chloroplasts

DNA

Respiration

Glucose + oxygen → carbon dioxide + water

Photosynthesis

Carbon dioxide + water → glucose + oxygen

Diffusion

D

Leaf – photosynthesis
Stem – transport
Root – absorb minerals and water
Potato (tuber) - storage

The arrows represent the transfer of energy between organisms.

Multicellular

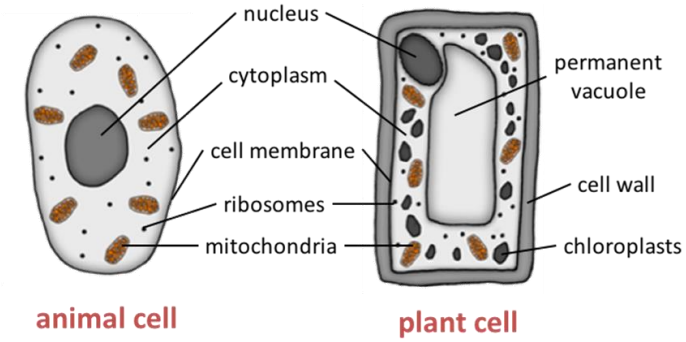
A

B

C

M	Add (warm) water and stir. Filtration to remove the sand (filter paper, filter funnel) Evaporation to remove the water to leave the salt.	50 km x 1000 = 50 000 m 50 000 m ÷ 10 s = 5 000 m/s	The effect of gravity on the Moon is less than on the Earth because the moon has less mass than the Earth.
K	Salt from salty water - evaporation Water from salty water - distillation	5 m/s x 20 s = 100 m	**L**
Solid – vibrating Liquid – moving past each other, but touching Gas – widely spaced, moving rapidly	Solid to liquid - melting Liquid to gas - evaporating	5 m ÷ 20 s = 0.25 m/s	**J**
H	**I**	force = newtons (N), time = seconds (s), energy = joules (J) and distance = metres (m)	Contact forces – between objects touching each other Non-contact forces – objects do not need to touch each other

A



B

Cell = smallest unit of a living organism
Tissue = similar cells grouped together so they can do a particular job
Organ = organised from different tissues
Organ system = organs working together in systems to do a particular function
Organism = an individual living thing

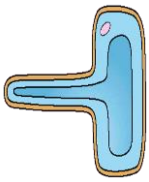
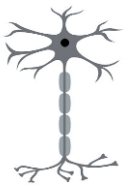
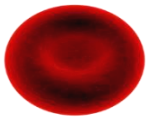
C

Cell	Tissue	Organ
Red blood cell Muscle cells Nerve cell	Lining of the intestine Lining of the lungs	Heart Kidney Artery Leaf Flower bud

D

Nucleus	Controls the cell
Cell membrane	Controls movement in and out of cell
Cytoplasm	Where chemical reactions happen
Mitochondria	Respiration
Chloroplast	Photosynthesis
Cell wall	Strengthens the cell
Vacuole	Filled with cell sap

E

Specialised cell				
Name of cell	Root hair cell	Neurone (nerve cell)	Red blood cell	Sperm
How is the cell adapted?	Larger surface area	Long, insulated, branches	Has no nucleus, biconcave shape	Tail, acrosome, lots of mitochondria
How does this help the cell to do its job?	Can absorb more water and minerals	Carry nerve impulses around the body	Large surface area to carry oxygen	Energy for swimming, enzymes to penetrate egg

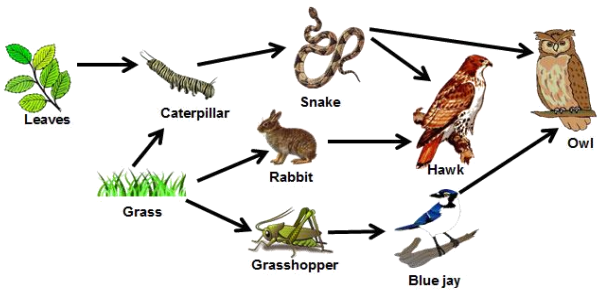
F

- Place a thin section of the **specimen** onto slide.
- Place a drop of water in the middle of the slide or stain the specimen.
- Gently lower **cover slip** onto the specimen without trapping air bubbles.

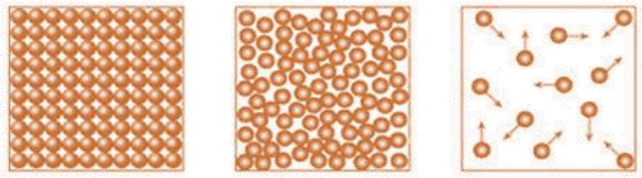
Total magnification = 10 x 20 = x200

G

a) Snake – population decrease as less food available.
Rabbit – population may increase as there are fewer caterpillars eating the grass so more grass will be available.
b) Caterpillar, rabbit, grasshopper.
c) Hawk, owl.



H



I

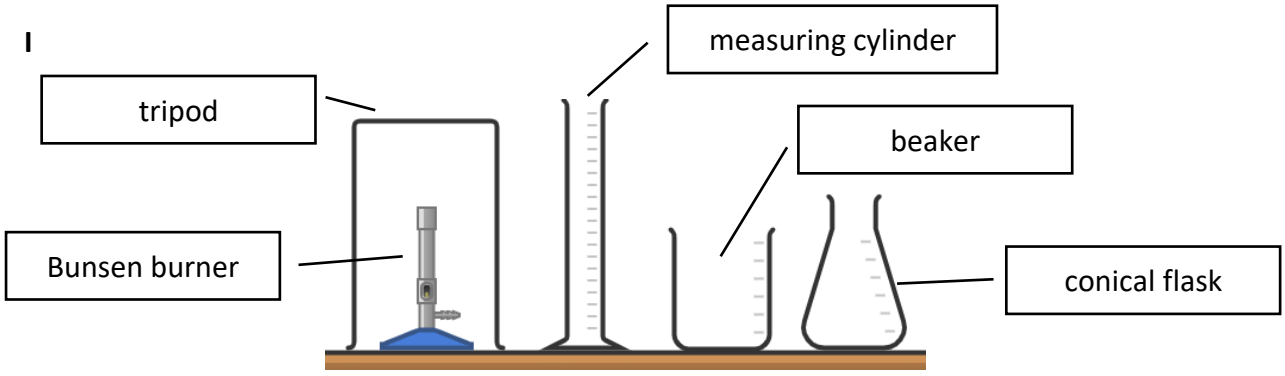


Diagram made in Chemix

J

- Resultant force = 600 N – 250 N = 350 N
- Direction = forward
- Accelerating
- The forces are not balanced

K

- A
- Pencil is insoluble in the solvent/ it will not dissolve in the solvent
- Substances which are more soluble in the solvent travel the furthest

L

- A - B
- Stationary/ not moving
- 7.5 km
- A – B steady speed for 5 hours; B – C stationary for 3 hours; C – D faster steady speed for 4 hours; D – E stationary for 2 hours; E – F steady speed back to the start for 6 hours

M

A solid melts when it is heated because the particles are gaining energy.
This energy is used to break the forces of attraction between the molecules.
The more energy a particle has the faster it can move.