



Strengthening the
Foundations Workbook

KS4 at Diss High School
Biology
Summer 'catch up'

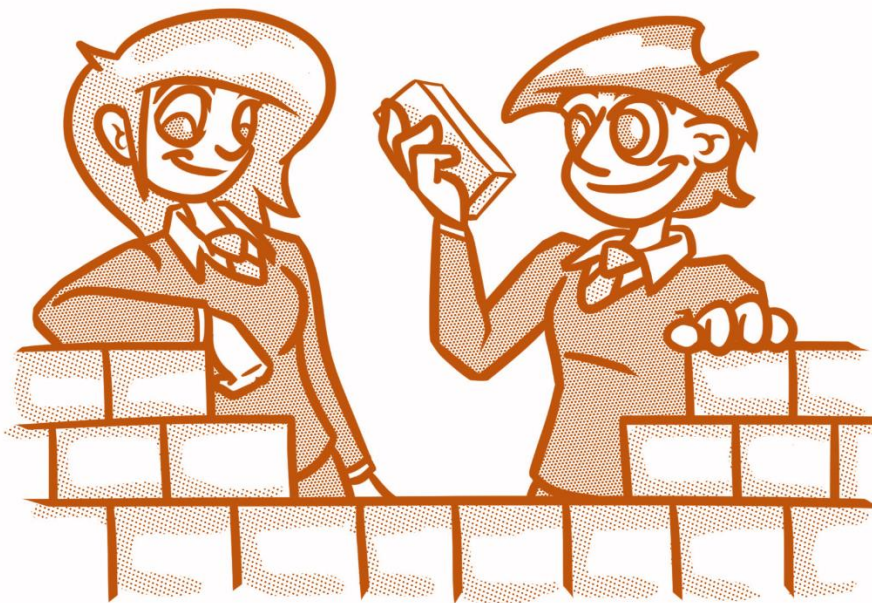
ANSWERS

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!



A

11

The starting mass of the objects (e.g. potato) could be different; to allow comparison

$$6 \text{ mm} \div 400 = 0.015 \text{ mm or } 1.5 \times 10^{-2} \text{ mm}$$

- a) +0.6 g; 50.0%
- b) -0.5 g; -15.6%
- c) +0.7 g; 33.3%

$$1.3 \text{ g} - 1.6 \text{ g} = -0.3 \text{ g}$$
$$(-0.3 \div 1.3) \times 100 = -23.1\%$$

Mean = 23
Median = 19

3.6

- a) $1000 \mu\text{m} \div 10 \mu\text{m} = \times 100$
- b) $5 \text{ mm} \times 1000 = 5000 \mu\text{m}$
 $5000 \mu\text{m} \div 15 \mu\text{m} = \times 333$

$$1.9 \text{ g} - 1.7 \text{ g} = +0.2 \text{ g}$$
$$(0.2 \div 1.7) \times 100 = 11.8\%$$

$$\% \text{ change} = (\text{change} \div \text{original}) \times 100$$

mean = (total of items of data) \div (number of items of data)
mode: most frequent value
median: the middle one when all the data is in numerical order

- a) $10000 \mu\text{m}$ or $1.0 \times 10^4 \mu\text{m}$
- b) 1000 mm or $1.0 \times 10^3 \text{ mm}$
- c) 0.1 m or $1.0 \times 10^{-1} \text{ m}$
- d) $0.1 \mu\text{m}$ or $1.0 \times 10^{-1} \mu\text{m}$

$$\text{Magnification} = (\text{image size}) \div (\text{actual size})$$

Every 100 or each 100
(divided by 100)

- a) 57000 nm or $5.7 \times 10^4 \text{ nm}$
- b) 5000000000 nm or $5.0 \times 10^9 \text{ nm}$
- c) 100000000 nm or $1.0 \times 10^8 \text{ nm}$

Draws water up the plant from the roots through the xylem; water is needed for photosynthesis; minerals carried in the water from the roots to the rest of the plant

Closes the stomata, helps to prevent further water loss by transpiration

To provide ATP/ energy for active transport

Kingdom; Phylum; Class; Order; Family; Genus; Species

Potometer = apparatus/ equipment designed to measure water uptake in a leafy plant

Mitochondrion/ mitochondria

Bicuspid valve - Prevents backflow of blood from the left ventricle into the left atrium

C

High humidity/ wet day; low wind speed; low temperature

Stoma and guard cells on a leaf

Excretion = Removal of waste substance from plants, animals and other living organisms

B

Xylem tissue transports water and mineral ions from the roots to the stems and leaves.

Large surface area; more mitochondria

Osmosis = the movement of water from an area of high concentration to one of low concentration through a partially permeable membrane.

Homeostasis

A

Mineral	Seawater	River water	Rainwater
Chloride	1.90%	0.04%	0.01%
Sodium	1.05%	0.02%	0.01%
Magnesium	0.12%	0.01%	0
Sulfur	0.08%	0.03%	0

(a) Mean percentage of sodium = $(1.05 + 0.02 + 0.01) / 3 = 0.36\%$

(b) Mean percentage of sulfur = $(0.08 + 0.03 + 0.00) / 3 = 0.04\%$

(c) Circle your answer.

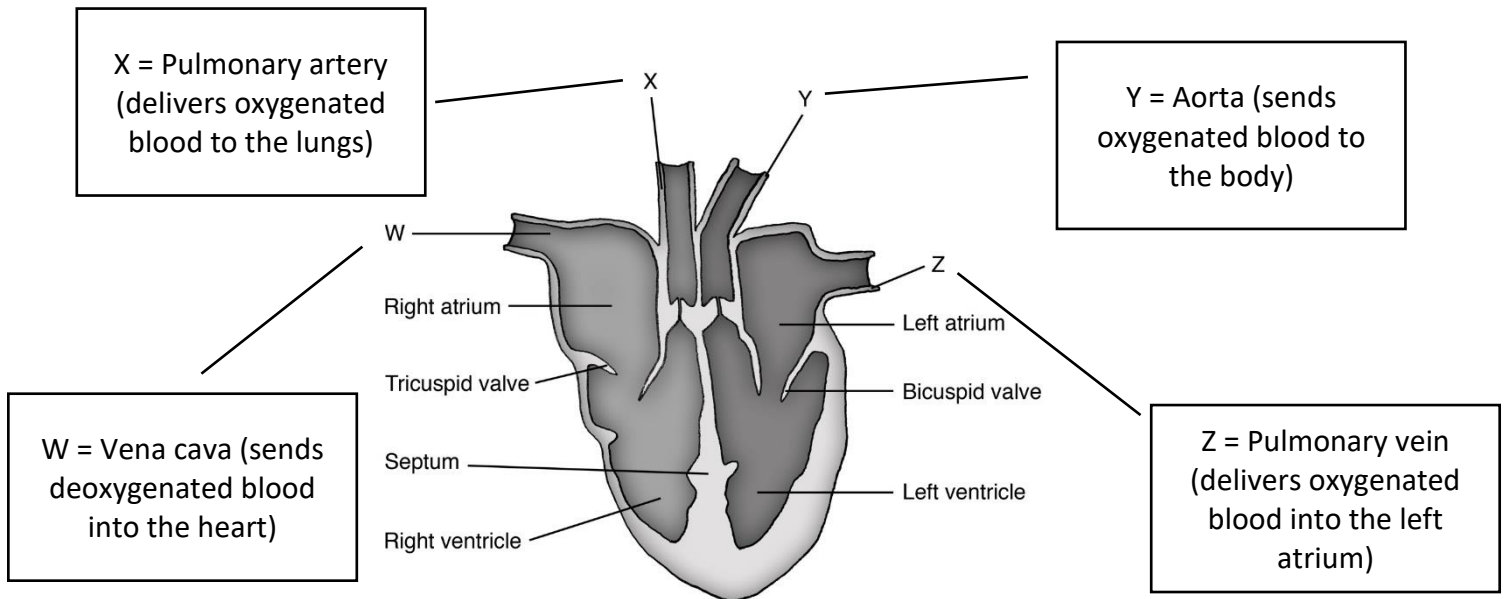
0.01%

0.65%

0.95%

1.88%

B



C

Country	Number of deaths from CHD per 100 000 population per year	Percentage of the population who smoke tobacco	Percentage of the population who drink alcohol heavily	Amount of fruit and vegetables eaten in kg per person per year
A	279	38	20	186
B	254	64	35	408
C	182	4	37	257
D	151	24	35	217
E	123	28	14	221

(a) Genes; diet high in fat or salt; high cholesterol; high blood pressure; lack of exercise; being overweight or obese

(b) Country B has the highest amount of fruit and vegetables eaten (kg) per person per year but the second highest number of deaths from CHD. Countries D & E have the lowest number of deaths, but not the highest amount of fruit and vegetables eaten (kg) per person per year.