Video P24 at www.science-cover.com

Do now task: Wordsearch

T	T	A	L	O	L	G	F	P	V	H	W	D	C	V
C	K	C	W	E	N	A	Z	R	U	O	Q	M	I	B
U	D	G	K	I	D	U	I	S	E	A	L	N	L	P
B	B	A	T	U	N	R	Y	T	V	E	N	U	I	Z
I	S	L	I	N	O	Q	Z	V	N	Q	Z	C	M	H
C	E	A	Z	O	I	V	U	P	W	E	Q	I	T	E
M	C	K	G	P	T	D	T	Y	V	B	T	V	N	Z
I	I	L	E	V	A	P	O	R	A	T	I	O	N	G
Z	T	U	R	K	M	J	D	I	U	Q	I	L	P	Z
Z	E	O	L	R	I	G	S	D	E	N	S	I	T	Y
P	N	N	F	A	L	W	W	G	G	O	Q	A	Q	L
W	I	L	V	V	B	D	N	Y	L	L	P	W	M	P
I	K	W	V	Q	U	H	E	I	H	P	Y	X	M	I
H	I	R	N	Q	S	E	D	C	N	Q	I	L	S	M
G	N	I	S	N	E	D	N	O	C	K	Y	D	C	W

Words to find:

Density	Volume
Cubic	Solid
Liquid	Gas
Sublimation	Melting
Evaporation	Freezing
Condensing	Internal energy
Potential	Kinetic

Task 1: Density

1/ Density is a measure of the amount of _____ per unit volume. We measure density in _____. A dense object has a _____ amount of material close together, whereas a _____ dense object has a small amount of material and spread far apart.

less kg/m³ large mass

2/ Complete the equation to density:

$$\text{Density (kg/m}^3\text{)} = \frac{m}{V} \qquad \frac{(kg)}{(m^3)}$$

Task 2: Calculating Density

1/ A paste is made by compressing 1kg of tomatoes into a 0.2m³ container. What is the density of the paste?

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2/ 5kg of potatoes is stored in a sack with a volume of 0.5m³. Calculate the density of potatoes in the sack.

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3/ Five 50kg dogs stand in a field of 100m³. What is the density of the dogs in the field?

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4/ What is the average density of a human being if the average person has a mass of 62kg and an average volume 0.062m³.

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5/ A circular child paddling pool is 0.5m tall and has a radius of 1m. If the water in the pool has a mass of 1566kg when it is full, calculate the density of water.

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Task 3: Rearranging the equation

1/ Calculate the volume taken up by 1000kg of hydrogen gas if its density is measured as 20kg/m³.

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2/ A car is crushed at a scrapyard into a cube of 0.9 m³ volume and density of 330 kg/m^3. What is the mass of the cube?

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3/ A swimming pool has dimensions 5m x 10m x 3m. The density of water is 997kg/m^3

a) Calculate the volume of the pool:

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b) Calculate the mass of water the pool could hold.

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4/ A circular swimming pool has a height of 3m and a radius of 5m.

a) Calculate the volume of the swimming pool:

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b) Calculate the mass of water that the circular pool can hold.

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c) Does this pool hold more or less water than the pool in Q3?

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Task 4: Experiment to find density

1/ Explain what equipment would be required to find the density of an irregular object:

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2/ Describe a method to calculate the density of an irregular object:

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