Y9 Science Term 6 Week 1: Term 5 Recap		P2: Forces		
		Week 2: Scalars and Vectors		Week 3: Distance Time Graphs
transpiration	The movement of water and minerals from the roots to the leaves	scalar	A scalar has magnitude only. Examples of scalars are speed, distance, mass and time.	Distance-time Graphs
potometer	The piece of equipment used to measure the rate of transpiration	vector	A vector has both magnitude and direction. Examples of vectors are	Steeper gradient shows faster speed Slopped line shows constant speed back
translocation	The movement of sucrose (sugar) down from the leaves to the rest of the plant		velocity, displacement, weight and acceleration.	Sloped gradient shows constant speed Sloped gradient shows constant speed
phloem	Vessels made from living cells that carry sucrose (sugar) through the plant	acceleration	Acceleration is the rate of change of velocity. Acceleration = change of velocity ÷	Curve upwards Curve downwards shows acceleration shows deceleration
sieve plate	Tissue separating phloem cells. Allow sugars to pass through		time taken If the acceleration is negative, it means the object is slowing down.	Time The gradient of the line is the speed of the object. The steeper the line the higher the speed.
	The cell is in interphase where all organelles are copied before the cell begins to divide. The DNA replicates producing identical copies of each chromosome.			To determine the speed at a particular point during acceleration a tangent to the curve must be drawn and the
\$1 ³	The nuclear membrane dissolves.	<u>Calculating Speed</u> To calculate speed, we must measure distance and time then use the equation:		gradient determined. $gradient = \frac{change in y}{change in x}$ $\widehat{E} \stackrel{10}{\longrightarrow} \underbrace{\text{Steady speed}}$
	The chromosomes line up along the centre of the cell.			
	The spindle fibres being to form. The spindle fibres begin to pull apart the chromosomes which move to		m/s) = distance(m) ÷ time(s)	C 9 D 8 T Stationary
	The spindle fibres begin to pull apart the chromosomes which move to opposite sides of the cell. Two new nuclear membranes begin to form around each set of chromosomes.	Distance can be measured with a measuring tape for small distances and a trundle wheel for larger distances.		Distance fravelled (m) Steady speed Stationary
	The cell divides into two identical daughter cells. This is called cytokinesis.			0 1 2 3 4 5 6 7 8 9 10 Time (s)

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Y9 Science Term 6	P2: Forces					
Week 4: Velocity Time Graphs	Week 5: Acceleration	Week 6: Newton's Laws of Motion				
Velocity-time Graphs (non-uniform motion)	Calculations when an object accelerates If an object is accelerating, the following equation can be used: $v^2 - u^2 = 2as$	Newton's firstAn object will remain at rest orlawmoving at a constant velocity unless acted on by an external force.				
Velocity (m/s)	Where: v is final velocity (m/s) u is starting velocity (m/s) a is acceleration (m/s ²)	Newton'sThe acceleration of an object issecond lawproportional to the force applied.Force = mass x acceleration				
Time (s) Non-uniform acceleration	s is displacement (m) <u>Resultant Forces</u> The resultant force is the overall force acting on an object.	Newton's thirdWhen two objects interact, theylawexert equal and opposite forces on one another.				
To determine the acceleration at a particular point a tangent must be drawn, and the gradient of the tangent determined.	Examples: Applied forces Resultant force	terminalWhen the weight of a falling objectvelocityis equal to the air resistance of the object terminal velocity will be reached.				
Velocity-time graphs (uniform motion)	25N 25N 25N 25N 25N 25N 25N 25N 25N 25N	momentumMomentum is a quantity that depends on mass and velocity. The units of measure are kgm/s.Momentum = mass x velocity				
velocity in 7 m/s 6 constant acceleration 3 constant deceleration	contactWhen two objects must touch to exert a force on one another.• Friction • Drag • Normal contact • Tension	Terminal vertical downwands vertical downwands vertical downwands steady speed 40 30 20 Terminal vertical downwands steady speed steady speed				
1 0 0 1 2 3 4 5 6 7 8 9 10 time in s	non-When objects can exert• Electrostaticcontacta force on one another• Magnetismforceswithout touching.• Gravity	8m/s 0 10 20 30 40 50 60 70 jumps at trols trols tr42s trols tr42s				
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