- A measure of the 'compactness' o	of an object	Three states of ma	otter: 33333	- Strong forces of attraction	hold particles close together in a fixe	ed regular arrangement To fir	nd density of regular solid object:		To find density of liquid:	
- Density depends on the material and how the particles		- Solid		- Particles don't have much energy so can only vibrate about their f					 Place measuring cylinder on balance and zero the 	
are arranged		33333		- Generally highest density		- Me	asure length width & height		balance	
- Dense material -> particles packe	ed tightly together		22222		n so particles move past each other i	in irregular arrangement – Cal	culate volume then work out densit	v	- Pour 10ml of liquid into cylir	nder and record mass
- Less dense material -> particles i		- Liquid	1000		olid so move in random directions at la		nd density of irregular solid object:	,	- Pour another 10ml into cylin	
- If less dense material is compress			3333	- Generally less dense than			e balance to find mass		recording volume and mass ea	
move closer together and it would become more dense			00550	3222			bmerge in eureka can filled with wat	er	- Work out density for each r	
P = M/V		- Gas	30	- Almost no forces of attrac		- Wr	ater displaced by object will be trans		- Calculate average density	
$DENSITY(KG/M^3) = MASS(KG)$) / VOLUME(M^3)		× ≥0		ove and travel in random directions at	t nign speeds	suring cylinder			
				 Generally less dense than 	liquids and solids		cord volume of water in cylinder (thi	s is volume of	- The internal energy of a sy	stem is the total energy its
					1+		t) then use to work out density	S IS VOIGHIE OF	particles have in their kinetic	and potential energy stores
- The particles in a ans are consta	intly moving in random	directions at random	n sneeds	1	density	Objec	in the to work out density		– Heating the system transfe	ers energy to its particles
 The particles in a gas are constantly moving in random d If you increase the temperature of a gas, energy is transi 									(they gain energy in kinetic s	stores and move faster),
		Islened into the kinetic energy stores					- Particles in a system vibrate		e -> have which increases internal energy	
of the particles		arav in the kinetic en	oray stores of the		eureka		energy in their kinetic ener	gy stores	– This leads to a change in t	emperature or state
- The temperature of a gas is related to the average energy in		ligy in the kinetic en			can		- Also have energy in their	potential	– If temperature changes, the	e size of this change
particles in the gas						energy stores due to their	positions	depends on mass of substan	ice, its specific heat capacity	
- The higher the temperature, the higher the average energy						- Energy is stored in a sys	tem by its	and energy input		
- As temperature increases, average speed of particles inc				小人♦			particles	-	- Change in state occurs if s	ubstance is heated enough -
TEMPERATURE								the particles will have enoug	h energy in kinetic stores to	
_	-			'<> h∩ h⁻			INTERNAL	ENERGY	break bonds holding them to	gether
	astick	mation					:	asnal	energy &	
DOING WORK	a june							re prur	ere igy o	0 ° . 0 - 0
	••••••									~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
	article i in gas	ses 1	PRESSURE				ch	anges	s of state	
					FMAT	TER &	ch	anges	s of state	
 If you transfer energy by applying a force, then you do work 	- As gas particles mo	ove about at high spe	eeds, they collide	b	NCLE M F MAT	TER	ch	anges	GES OF STATE	
– If you transfer energy by applying	– As gas particles mo into each other and e	ove about at high spe	eeds, they collide a pressure) on	C	FMAT	TER &	ch	anges	s of state	
- If you transfer energy by applying a force, then you do work	- As gas particles mo into each other and e each other	ove about at high spe exert a force (and so	eeds, they collide	- The specific latent heat is the a		\$	Iting or boiling, you are still putting	CHAN	s of state	meaning you don't end up
 If you transfer energy by applying a force, then you do work Doing work on a gas increases its internal energy which increases its 	 As gas particles mo into each other and e each other In a sealed containe 	exert a force (and so er,	eeds, they collide a pressure) on particles collide with the container		mount of energy	\$	Iting or boiling, you are still putting	CHAN	GES OF STATE	
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