

Section 1 Pressure

A.	forc	e per unit area that is applied on the surface of an object			
В.	Pressure can be	with a formula: pressure $(P) = force(N) / area(m^2)$ or			
	P = F/A.				
	1. The SI unit of measure for pressure is the pascal. (Pa).				
	a. One pascal is equal to $1 Pa = 1 N/m^2$.	a force of applied over an area of 1 m², or			
	b. The area is the area of	contact in which the pressure is exerted.			
	c. Pressure	if the force applied increases or the area decreases.			
	d. The weight of a dollar bill resting flat on a table exerts a pressure of about				
	on t	he table.			
	or Pa.	of measure that pressure is sometimes expressed in units of kPa,			
	3. Sometimes, the	that is exerted is the weight of an object.			
	4. Changing the	over which force is applied is one way to change the			
	pressure that is exerted or	an object.			
C.	. A is any s	ubstance that has no definite shape and has the ability to flow.			
	1. Liquids,	_, and even air are fluids.			
	2. The Sun is made of anoth atomic fragments.	er fluid,, a gas made of electrically charged			
D.	. When the	_ of a fluid above a surface is greater, the pressure exerted on the			
	surface by the fluid is greater				
	1. Pressure exerted by a fluid increases with				
	2. The pressure on objects in a fluid is exerted on all sides to the				
	surface of the object.				
E.	The	exerts about 100,000 N of force over every square meter on Earth			
	1. Atmospheric pressure	as elevation in the atmosphere increases.			
	2. A measures atmospheric pressure.				



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Note-taking Worksheet (continued)

Section 2 Why do objects float?

A.		—an upward force exerted by a fluid on any object in the fluid					
		The buoyant force is caused by the exerted by a fluid; the force					
		exerted on the bottom of an object in a fluid is greater than the force exerted at the top of					
		the object.					
	2.	2. Buoyant force is an unbalanced force; the portion of the object that is deeper in the fluid					
		will have a force pushing it upward than the force pushing downward					
		a. If the weight of an object is than the buoyant force, gravity will cause the object to sink.					
	b. If the buoyant force is equal to or greater than the object's weight, the object will						
	3.	Weight can be spread out over a surface area to increase buoyancy.					
	4.	Buoyant force doesn't change with					
В.	Bu	toyant force depends on the shape of the; an object with a					
	_	surface has more upward pressure exerted on the object, thus, the buoyan					
	for	rce is greater.					
C.		the buoyant force on an object is equal to the weight					
	of	the fluid it displaces.					
	1.	—mass of an object divided by its volume					
		a. Any object that has a density than the density of the fluid it is					
		placed in will sink.					
		b. Any object with a density than the density of the fluid it is placed in will float.					
	2.	A boat floats because its volume is large enough to enough water so					
		that the buoyant force is greater than the weight of the boat; its density is less than the					
		density of water.					

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Note-taking Worksheet (continued)

Section 3 Doing Work with Fluids

A	. F	luids at rest and in motion can exert				
	1	. Pushing on a fluid can increase				
		. The pressure the fluid exerts is	by the amount of the additional			
		force being applied.				
B when a force is applied to a fluid in a closed cor						
		he pressure throughout the fluid increases by the same amount.				
C.	an applied force.					
	of a fluid increases, the pressure					
		xerted by the fluid decreases.	, F			
	1.	A fluid will move from a higher pressure environment to a pressure environment.				
	2.	2. Wind can the rate at which smoke rises in a chimney.				
		3. Hurricanes and other high winds can the air pressure outside a				
		house and the roof can be pushed off the house by the				
E.	M	loving produces a force that allows plane				
		I is created by downward flowing air which exerts an upward reaction force				
		on the wing.	•			
	2.	Increasing the size or surface area of the wing can	lift.			
	3.	Planes and birds have various wing	depending on the type of flight.			
		a and gliders have long, narrow	wings that help them glide long			
		distances.				
		b. Swallows, swifts, falcons, and jet fighter airplanes have small, narrow, tapered wings to				
		help them fly at				
		c. Forest and field birds, such as pheasants, have	, rounded wings that allow for			
		quick take-offs and sharp turns.				