

QUESTION	ANSWER
82. True or False: A simple machine that consists of an inclined plane wrapped around a post is a wedge.	FALSE
83. Scissors are an example of which simple machine?	C. wedge
84. True or False: A net force is an unbalanced force.	TRUE
85. Force is measured in what unit?	C. Newton
86. Use the equation $\text{FORCE} = \text{MASS} \times \text{ACCELERATION}$ to find the force of 10kg mass accelerating at 700m/s^2 .	D. 7000N
87. True or False: The force of gravity is stronger if two objects are farther apart.	FALSE
88. The unit meter/second is used for _____.	D. velocity
89. True or False: A centripetal force causes an object to move in a straight line	FALSE
90. True or False: Weight is a measure of the force of gravity on an object.	TRUE
91. A change of state from a solid to a gas is _____.	C. sublimation
92. If you have the speed control in your car set at 55mph, you travel at a(n) _____.	B. constant speed
93. True or False: All cartoon characters follow the laws of physics.	FALSE
94. True or False: Terminal velocity is the slowest speed reached by a falling object.	FALSE
95. True or False: Thermal energy depends on both the kinetic energy and potential energy of an object.	TRUE
96. The distance traveled can be found by dividing velocity by _____.	time
97. Which state of matter will expand to fill up the area which it is contained?	gas
98. What type of wave is represented by the following diagram? (see graphic)	transverse wave
99. True or False: Potential energy changes to kinetic energy as an object falls.	TRUE
100. Use the equation: Gravitational potential energy = weight x height to find the gravitational potential energy for a 20N object sitting on a window ledge 5 meters above ground	D. 100J



Clever Catch®

PHYSICS

Your **Physics Clever Catch®** provides an excellent way for students to learn basic Physics concepts. This ball contains 100 questions to get them started in this exciting topic. Clever Catch® can be used at school in organized classroom activities. It can also be used on the playground or at home. Grades 6, Ages 11+.

CLEVER CATCH® AT HOME OR ON THE PLAYGROUND

Basic play for Clever Catch® is simple. Two or more players toss the ball to each other, answering the problem underneath or closest to their left thumb. Each problem is numbered and enclosed in its own space, assuring the child will know which problem to answer. Answers are provided in this insert for independent play by students.

PLAYOFFS:

Pairs of children toss the ball back and forth for one minute answering problems. A scorekeeper tallies which team has the most correct answers in the time limit.

CLEVER CATCH® IN THE CLASSROOM

BEAT THE CLOCK:

The entire class plays cooperatively as one team, trying to better its own time and number of correct answers in each game.

DIRECTIONS:

- 1 Choose a timekeeper. You also will need a monitor - teacher or student - to keep track of correct answers.
- 2 Divide the class into two lines of equal length, students facing each other.
- 3 At the timekeeper's signal, toss Clever Catch® to the first student. As quickly as possible, this student reads and answers the problem underneath his/her left thumb.
- 4 This student then tosses Clever Catch® to the student directly across from him/her in the second line. This student reads and answers the problem under his/her left thumb.
- 5 Play continues until all students in both lines have had a turn. When the last student has answered, the time and correct number of answers are recorded.



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QUESTION	ANSWER
1. Name the scientist who is best known for developing three laws of motion and discovering gravity.	Sir Isaac Newton
2. True or False: Newton's First Law of Motion is also known as the Law of Inertia.	TRUE
3. Acceleration depends upon _____.	D. both direction and speed
4. True or False: Velocity and speed are exactly the same thing.	FALSE
5. Explain the differences between speed and velocity.	velocity and speed are both rates of change in position, but velocity includes direction
6. How can an object be accelerating even if its speed is constant?	it can change direction
7. What is the correct unit label for acceleration?	D. m/s ²
8. Which will cause a change in motion - balanced forces or unbalanced forces?	unbalanced forces
9. Acceleration can be found by dividing velocity by _____.	time
10. What can be found by dividing distance by time?	speed or velocity
11. A student covers a distance of 200-meters in 20-minutes. Using the equation distance/time, find the student's speed.	200 meters/ 20 minutes= 10 meters/minute
12. Projectiles follow a(n) _____ path.	C. curved
13. True or False: Acceleration due to gravity on Earth is the same for all objects.	TRUE
14. If a 6 lb. brick and a 10 lb. brick are dropped from the same height, then _____.	D. they will land at the same time because gravity is the same on both of them
15. Momentum depends on _____.	B. velocity and mass
16. Which of Newton's Laws states "an object in motion stays in motion and an object at rest stays at rest unless acted on by a net force"?	Newton's First Law of Motion
17. A testable prediction used to solve science problems is a _____.	A. hypothesis
18. True or False: 100 liters of water is more dense than 10 liters of water.	FALSE
19. Which of the three states of matter has no definite shape, but has definite volume?	Liquid
20. Who is known for his theory that all objects fall with the same acceleration (if air resistance is ignored)?	Galileo Galilei
21. Which scientist invented the light bulb and was the first person to record a human voice?	Thomas Edison
22. A machine made of two or more simple machines is a _____.	compound machine
23. Work output of a machine is almost always _____ work output.	C. less than
24. True or False: Gravity is a force that each object applies to every other object.	TRUE
25. The force that opposes motion between two touching objects is _____.	B. friction
26. True or False: In order for work to be done, the force and distance over which it is applied must be in the same direction.	TRUE
27. A push or pull is a(n) _____.	force
28. What are the 6 types of simple machine?	inclined plane, lever, pulley, screw, wheel and axle, and wedge
29. Energy can be stored as either gravitational or chemical _____.	energy
30. The type of energy of an object has as a result of motion is _____.	kinetic energy
31. True or False: Energy can be created or destroyed under natural conditions.	FALSE
32. True or False: Work is the transfer of energy.	TRUE
33. A pendulum has maximum _____ energy at the top of its swing.	potential
34. Pressure is the ratio of _____ to the area over which it is applied.	force
35. Pascal's Principle states that pressure applied to a fluid is spread _____ evenly throughout the fluid.	evenly
36. According to Boyle's Law, as the pressure of a gas increases the volume of the gas _____.	decreases
37. If the buoyant force is more than the weight of an object submerged in it, the object will _____.	float
38. True or False: Archimedes' Principle explains why objects sink or float.	TRUE

QUESTION	ANSWER
39. Bernoulli's Principle explains how _____.	C. airplanes fly
40. Charles's Law explains why the pressure of a gas in a container increases as temperature _____.	B. increases
41. Anything that flows is a _____.	fluid
42. Air pressure on top of a mountain is _____ at sea level.	B. less than
43. True or False: Temperature is the same as heat.	FALSE
44. Heat is the flow of thermal energy from a _____ object to a _____ object.	warmer, cooler
45. True or False: Absolute zero is the temperature at which particles in matter have maximum kinetic energy.	FALSE
46. What are the three most commonly used temperature scales?	Fahrenheit, Celsius, Kelvin
47. When you open the door in the winter, do you heat the outside, or let cold air in? Explain.	Heat the outside. Heat can only flow from hot to cold.
48. True or False: Specific heat tells you how much energy a substance needs to raise 1 kg of substance 1° C.	TRUE
49. The transfer of thermal energy by direct contact of particles is _____.	conduction
50. The type of heat transfer that does not require matter is _____.	radiation
51. _____ is the type of energy transfer that occurs in a pot of water on a hot burner.	convection
52. Which of the following temperatures is not possible?	B. -5K
53. The type of substance that allows electricity to flow through it easily is a _____.	conductor
54. copper, iron, and water are examples of good _____.	conductors
55. Like poles of a magnet will _____ each other.	A. repel
56. The North pole of a magnet will attract the _____ pole of a second magnet.	C. South
57. True or False: A good conductor is a poor insulator.	TRUE
58. Wood, air, and glass are examples of good _____.	insulators
59. True or False: A compass uses the Earth's magnetic poles to find direction.	TRUE
60. Water waves are an example of a _____ wave.	transverse
61. Name the part of the wave labeled A. (see graphic)	crest
62. Name the part of the wave labeled B. (see graphic)	wavelength
63. Sound waves are examples of _____ waves.	A. longitudinal
64. Sound travels _____ than light?	slower
65. True or False: Light waves require matter to travel.	FALSE
66. True or False: The color of an object is determined by the light it reflects.	TRUE
67. Name the type of lenses used to correct farsightedness.	convex
68. The type of mirror used to produce an image of an object that is right-side up and the same size is a _____.	C. plane mirror
69. Name three of the types of waves that make up the electromagnetic spectrum.	radio waves, infrared waves, visible light, ultraviolet rays, X-rays, gamma rays
70. True or False: Electromagnetic (light) waves can transfer energy without a medium.	TRUE
71. Waves carry _____ from place to place.	energy
72. True or False: A concave lens is used to correct nearsightedness.	TRUE
73. A material that absorbs all the light that strikes it is _____.	A. opaque
74. True or False: Fuel is burned in cylinders in external combustion engines.	FALSE
75. The temperature at which liquid freezes is called its _____.	C. freezing point
76. If a wood block is in a jar and the jar is broken, what will happen to the volume and shape of the wood.	It will not change.
77. 1 kilowatt of power = _____ watt	C. 1000
78. Absolute zero is _____.	0K
79. _____ occurs when liquid changes to a solid.	B. Freezing
80. True or False: A simple machine that consists of an inclined plane wrapped around a post is a wedge.	FALSE

