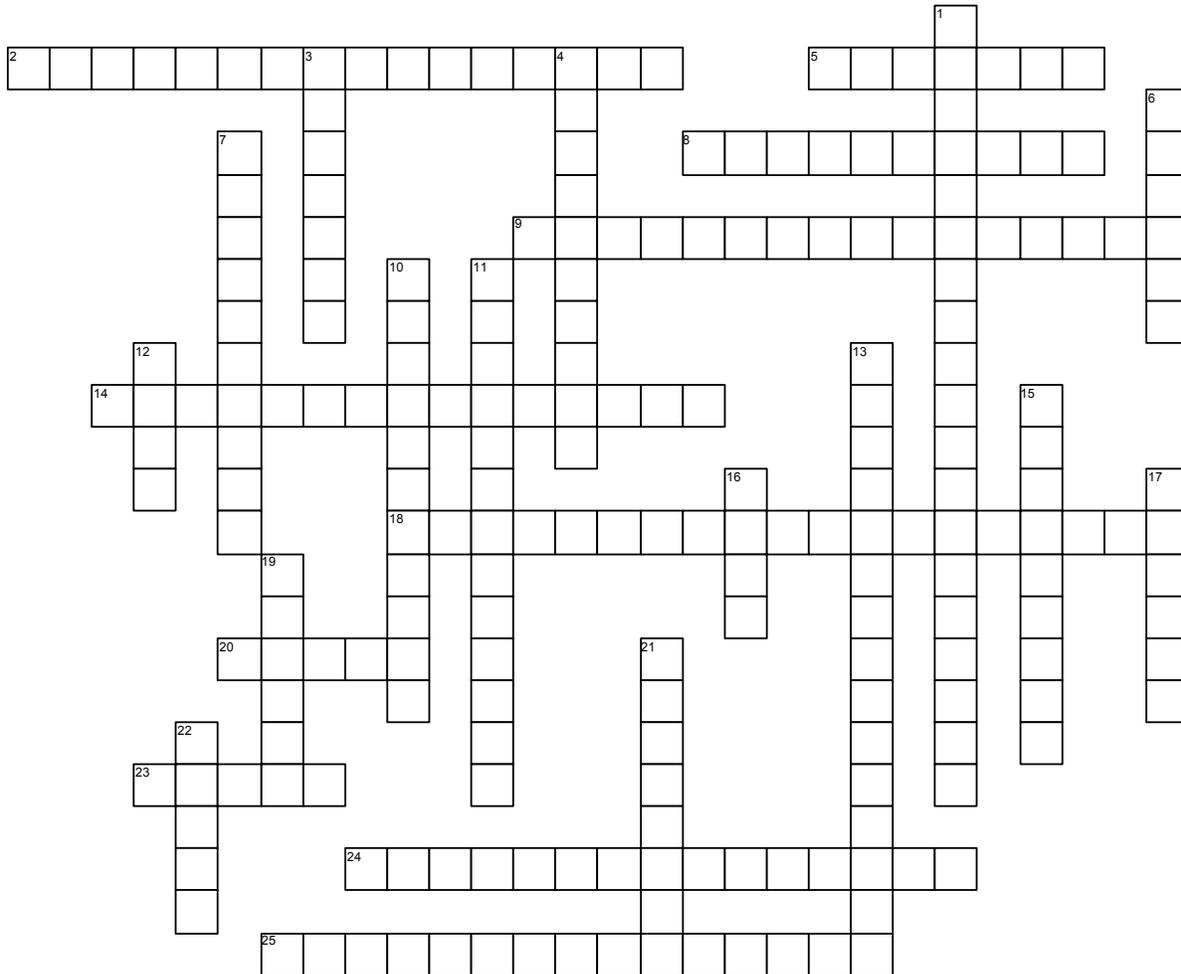


# Scientific Principles And Materials

## Chapter 13



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### ACROSS

- 2 The \_\_\_\_\_ is a series of steps taken to solve a problem.
- 5 \_\_\_\_\_ is defined by Isaac Newton's first law of motion, which states that a body at rest tends to remain at rest, and a body in motion tends to remain in motion in a straight line unless acted upon by an outside force.
- 8 \_\_\_\_\_ is the process of the heat traveling from a hotter part to a colder part of the same object or by direct contact.
- 9 A \_\_\_\_\_ increases the force applied to it and passes it along in the same direction. □
- 14 Energy is called \_\_\_\_\_ if it is capable of being changed to useful energy, such as the potential energy stored in a battery or a vehicle at the top of a hill.
- 18 Leverage creates a \_\_\_\_\_ that, at the brake pedal, is called the pedal ratio. □
- 20 The load holds the engine speed, so it is called a \_\_\_\_\_.
- 23 The term \_\_\_\_\_ means the rate of doing work.
- 24 A \_\_\_\_\_ increases the force applied to it and also changes the direction of the force.
- 25 The horsepower derived from a dynamometer is called \_\_\_\_\_.

### DOWN

- 1 Heat is measured in units called \_\_\_\_\_.

- 3 In the science of mechanics, a lever is a simple machine that consists of a rigid object, typically a metal bar that pivots about a fixed point called a \_\_\_\_\_.
- 4 One \_\_\_\_\_ is the power required to move 550 pounds one foot in one second, or 33,000 pounds one foot in one minute.
- 6 \_\_\_\_\_ is the ability or the capacity to do work.
- 7 Another name for the explanation is the \_\_\_\_\_.
- 10 The actual horsepower produced by an engine is measured with a \_\_\_\_\_.
- 11 Energy in the form of a moving object is called \_\_\_\_\_.
- 12 \_\_\_\_\_ is defined as actually accomplishing movement when force is applied to an object.
- 13 A \_\_\_\_\_ actually reduces the force applied to it, but the resulting force moves farther and faster.
- 15 The \_\_\_\_\_ is the true cause of a failure, which may not be noticed at first.
- 16 \_\_\_\_\_ is the amount of matter in an object.
- 17 The \_\_\_\_\_ of an object is the force of gravity on the object and may be defined as the mass times the acceleration of gravity.
- 19 \_\_\_\_\_ is the term used to describe a rotating force that may or may not result in motion.
- 21 The primary mechanical principle used to increase application force in every brake system is \_\_\_\_\_.
- 22 Torque is measured as the amount of \_\_\_\_\_ multiplied by the length of the lever through which it acts.