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[https://www.100test.com/kao\\_ti2020/470/2021\\_2022\\_\\_E4\\_B8\\_8A\\_E5\\_A4\\_96\\_E7\\_89\\_88\\_E5\\_c67\\_470325.htm](https://www.100test.com/kao_ti2020/470/2021_2022__E4_B8_8A_E5_A4_96_E7_89_88_E5_c67_470325.htm) UNIT 5 TEXT As the author points out below , the success of science has less to do with a particular method than with an essential attitude of the scientist. This attitude is essentially one of inquiry , experimentation and humility before the facts. Therefore , a good scientist is an honest one. True scientists do not bow to any authority but they are ever ready to modify or even abandon their ideas if adequate evidence is found contradicting them. Scientists , they do place a high value on honesty. Science and the Scientific Attitude by Paul G. Hewitt Science is the body of knowledge about nature that represents the collective efforts , insights , findings , and wisdom of the human race. Science is not something new but had its beginnings before recorded history when humans first discovered reoccurring relationships around them. Through careful observations of these relationships , they began to know nature and , because of nature's dependability , found they could make predictions to enable some control over their surroundings. Science made its greatest headway in the sixteenth century when people began asking answerable questions about nature when they began replacing superstition by a systematic search for order when experiment in addition to logic was used to test ideas. Where people once tried to influence natural events with magic and supernatural forces , they now had science to guide them. Advance was slow , however , because of the

powerful opposition to scientific methods and ideas. In about 1510 Copernicus suggested that the sun was stationary and that the earth revolved about the sun. He refuted the idea that the earth was the center of the universe. After years of hesitation , he published his findings but died before his book was circulated. His book was considered heretical and dangerous and was banned by the Church for 200 years. A century after Copernicus , the mathematician Bruno was burned at the stake largely for supporting Copernicus , suggesting the sun to be a star , and suggesting that space was infinite. Galileo was imprisoned for popularizing the Copernican theory and for his other contributions to scientific thought. Yet a couple of centuries later , Copernican advocates seemed harmless. This happens age after age. In the early 1800s geologists met with violent condemnation because they differed with the Genesis account of creation. Later in the same century , geology was safe , but theories of evolution were condemned and the teaching of them forbidden. This most likely continues. "At every crossway on the road that leads to the future , each progressive spirit is opposed by a thousand men appointed to guard the past." Every age has one or more groups of intellectual rebels who are persecuted , condemned , or suppressed at the time ; but to a later age , they seem harmless and often essential to the elevation of human conditions. The enormous success of science has led to the general belief that scientists have developed and are employing a "method" - a method that is extremely effective in gaining , organizing , and applying new knowledge. Galileo , famous scientist of the 1600s , is usually

credited with being the "Father of the Scientific Method." His method is essentially as follows : 1. Recognize a problem. 2. Guess an answer. 3. Predict the consequences of the guess. 4. Perform experiments to test predictions. 5. Formulate the simplest theory organizes the three main ingredients : guess , prediction , experimental outcome. Although this cookbook method has a certain appeal , to has not been the key to most of the breakthroughs and discoveries in science. Trial and error , experimentation without guessing , accidental discovery , and other methods account for much of the progress in science. Rather than a particular method , the success of science has more to do with an attitude common to scientists. This attitude is essentially one of inquiry , experimentation , and humility before the facts. If a scientist holds an idea to be true and finds any counterevidence whatever , the idea is either modified or abandoned. In the scientific spirit , the idea must be modified or abandoned in spite of the reputation of the person advocating it. As an example , the greatly respected Greek philosopher Aristotle said that falling bodies fall at a speed proportional to their weight. This false idea was held to be true for more than 2 , 000 years because of Aristotles immense authority. In the scientific spirit , however , a single verifiable experiment to the contrary outweighs any authority , regardless of reputation or the number of followers and advocates. 100Test 下载频道开通 , 各类考试题目直接下载。详细请访问 [www.100test.com](http://www.100test.com)