Quiz.

1. Which of these is a scientific hypothesis?
   a) The universe is surrounded by a second universe, the existence of which cannot be detected by scientists.
   b) Atoms are the smallest particles of matter.
   c) Albert Einstein was the greatest scientist of the 1900s.

2. Which is the most fundamental science of the following?
   a) physics
   b) chemistry
   c) biology
   d) astronomy

3. The language of science is _____.
   a) Latin
   b) English
   c) mathematics
   d) nature

4. The classic scientific method _____.
   a) is the method guaranteed to lead to scientific discoveries
   b) is today outdated and of little value
   c) required memorization
   d) is one of the many ways that scientific discoveries are made

5. When someone says, “That’s only a theory,” that person likely doesn’t know that a scientific theory is a(n)
   a) vast composition of well-tested hypotheses and facts.
   b) guess that involves a bunch of facts.
   c) type of hypothesis.
   d) untested explanation.

6. For a hypothesis to be scientific, it must _____.
   a) be in agreement with what we know is true
   b) have a test for proving it right
   c) have a test for proving it wrong
   d) be based on an existing scientific theory

7. Technology is a _____.
   a) body of scientific knowledge
   b) form of science
   c) tool of science
   d) solution to all of humankind's problems

8. Science differs from art and religion because it _____.
   a) describes the human experience
   b) describes the source, purpose, and meaning of everything
   c) is based on faith
   d) discovers and records natural phenomena

9. Which of the following statements about progress today compared with progress centuries ago is true?
   a) Progress today is slower than it was centuries ago.
   b) Progress today is faster than it was centuries ago.
   c) Progress today is the same as it was centuries ago.
   d) There is no way to determine if progress today differs from progress centuries ago.

Answer Key.
1. b)

The statement about atoms is scientific, because there is a test for its wrongness.

The universe statement has no test for possible wrongness and is therefore unscientific.

The Einstein statement is an assertion that has no test for possible wrongness.

2. a)

Physics is the most basic of all of these sciences. Chemistry and biology use physics but are increasingly more complicated, and astronomy is a branch of physics.

3. c)

Latin used to be the language used to communicate science, but now most scientists converse in English. Since people all over the world speak so many languages, it is convenient to have a common tongue. However, mathematics is necessary to quantitatively discuss science.

4. d)

Although the scientific method has been commonly used and extremely useful, not all scientific findings were made using it.

5. a)

Scientific hypotheses must be well-tested and verified in order to be called theories.

6. c)

Scientific hypotheses are new ideas and cannot be proven by example, but they can be disproven by example. If an experiment cannot be designed that may disprove a hypothesis, then it is not scientific.

7. c)

Technology is not science; it is an application of science. Unfortunately, technology cannot solve all of humankind's problems...at least not yet.

8. d)

Science is based on fact and is humankind's attempt to understand nature. Art and religion can answer more philosophical questions regarding our purpose and experiences.

9. b)

We have the advantage of the experience of the generations before us to help us make scientific discoveries faster than we used to be able to.