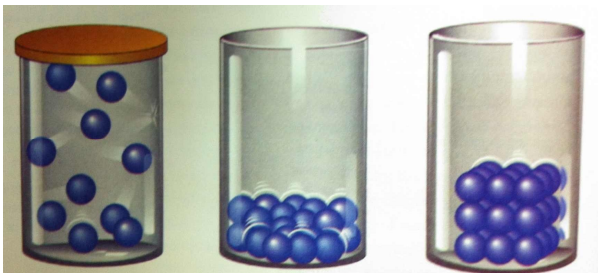
Section 5.1 Exploring the Nature of Matter – Answer Key

1) What are some characteristics of a good scientist?

Some characteristics of a good scientist are to be honest, skeptical, persistent, and to question.

2) List the 5 points of the particle theory of matter. **The 5 points of the particle theory of matter are;**
1) All matter is made up of tiny particles
2) Each pure substance has its own kind of particle, which is different from the particles of other pure substances.
3) Particles attract each other.
4) Particles are always moving.
5) Particles that are heated move faster than particles at a lower temperature.

2) Draw the three figures at the bottom of page 156 and label them as either a solid, liquid or gas.



3) What are the three states of matter? **The three states of matter are solids, liquids and gases.**

4) What are the two ways of classifying matter by what it is made of? **Matter can be classified as a mixture or pure substance.**

5) What are the two properties of matter? **Two properties of matter are heterogeneous and homogeneous.**

6) Define pure substance. **A pure substance is a material that is made of one type of particle.**

7) Is a pure substance homogeneous or heterogeneous? **A pure substance is homogeneous.**

8) How many particles are in a mixture? **A mixture contains at least two kinds of particles.**

9) What are two ways that chemists classify changes in matter? **Chemists classify changes in matter as a physical change or chemical change.**

10) Define physical change. **A physical change is any change that does not produce a new substance.**

11) Give 3 examples of a physical change.
i) Ice melting ii) Tearing a piece of paper iv) Salt mixed with water

12) Define chemical change. **A chemical change is any change that produces at least one new substance, with new properties.**

13) Give 3 examples of a chemical change.
i) Paper burning ii) Baking bread iv) Iron rusting

14) Are chemical changes easily reversible? **Chemical changes may be very difficult to reverse, or impossible.**

15) What are 5 indications that a chemical change has taken place?
i) Heat is produce or observed
ii) The starting material is used up
iii) A new colour appears
iv) A material with new properties forms
v) Gas bubble form in a liquid
vi) Grains of solid precipitate form in a liquid.

16) Define density. **Density is the amount of mass that is in a certain amount of space. Density equals mass divided by volume.**

17) Define combustibility. **Combustibility is the ability of a substance to burn in the air.**