

Pg. 204 #1, 3, 4, 6, 8, 9, 10, 11, 14, 19

(Challenging questions: 13, 16, 18, 22)

✓ 1.) Fluids are substances that are able to flow and have no fixed shape. Examples are water, oxygen and mustard.

3.) Saliva lubricates food for swallowing.

Urine removes ^{nutrients not needed} wastes from body.

✓ Stomach acid aids in chemical digestion.

✓ Oxygen exchanges with carbon dioxide so we can breathe.

4.) Laminar	Turbulent
- Smooth	- Chippy
- Regular	- Irregular
✓ - Pipes	- Rapids
- Hoses	- Rivers ✓
	- Oceans
	- Lakes
	- Ponds

5.) Flow rate is the measure of how quickly fluids move. Volume per unit time is how it is measured.
Example: L/s

6.) The particles of the fluid are attracted to each other causing them to stay close together, taking up less space.

8.) It is called aerodynamics. Two other examples are spacecraft and arrows.

9.) The words cohesion and adhesion should look similar because they both attract different things. "Co" refers to particles connecting together. "Ad" refers to (forces) adhering to the sides. "Hesion" refers to together.

10.) The greater the viscosity of a fluid the slower it is. I believe this because more viscous fluids have greater adhesion and cohesion making them more viscous.

Three

11.) 3 ways fluid flow is important to the food industry is ethylene gas used to ripen fruit, the correct amount of ingredient for products and margarine being made by bobbing hydrogen with oil. If it mixes too quickly it creates trans fat which is related to heart disease.

13.) Yes, the practise of adding concrete lining to waterways should continue because they prevent turbulent flow and soil erosion creating a more laminar flow and less soil erosion.

14.) Fluids are essential to life for many reasons. One reason being that most of our body is made up by fluids, 70% of our body is made up by water. Also without fluids there would be nothing to breathe or drink.

16.) One factor that affects fluid flow is viscosity. If a fluid is viscous (like corn oil) it will flow slower or vice versa.

Another factor is the type of fluid. For example, gases flow much faster than liquids.

Another factor is adhesion, the attraction between the particles of 2 substances.

18.) Travelling through air and water are similar. One way this is, is that are both studies of fluid dynamics. Another similarity is that they are both movements of fluids. Another similarity is both these types of travel involve particles that flow freely.

19.) It takes a long time for different reasons. Firstly, the syrup is viscous making it pour slower. Secondly, the cohesion of the particles has a stronger attraction. Thirdly, the particles of the syrup are attracted to the container or even that the part

✓ of syrup are closer together.

22.) Drag is important in the process of vehicles. Drag is important in this situation because it makes the vehicles more efficient, because the air flow is reduced.