Year 8 Science: Mixtures, solutions, concentration and separating

Name: _____ Date: _____

Try these without your notes first, then check the answer key.

Practice

1. Muddy water from a creek is left in a jar overnight and a layer of soil forms on the bottom. Was it a solution or a suspension?

2. Drink A has 15 g of sugar in 500 mL. Drink B has 12 g in 250 mL. Which is more concentrated?

3. You stir sugar into cold water until some stays at the bottom however long you stir. What word describes the solution, and what could you change so more dissolves?

4. Which method would you use to separate gravel from sand?

5. In a chromatogram of a green food colouring, a yellow spot is near the top and a blue spot is lower. Which dye clings more strongly to the paper?

Fix the mistake

6. Correct this statement: "When salt dissolves in water it disappears, so the salt is gone."

7. Correct this statement: "A solution with more grams of solute is always more concentrated."

8. Correct this statement: "Flour stirred into water is a solution."

9. Correct this statement: "In chromatography, draw the start line in pen and put it under the water."

Answer key (for parents and tutors)

1. Muddy water from a creek is left in a jar overnight and a layer of soil forms on the bottom. Was it a solution or a suspension?
   A suspension, because the solid settled out; a solution never does.
2. Drink A has 15 g of sugar in 500 mL. Drink B has 12 g in 250 mL. Which is more concentrated?
   Drink B: it has 48 g/L, while A has 30 g/L.
3. You stir sugar into cold water until some stays at the bottom however long you stir. What word describes the solution, and what could you change so more dissolves?
   Saturated; warm the water so it can hold more sugar.
4. Which method would you use to separate gravel from sand?
   Sieving, because the pieces of gravel are bigger than the sand grains.
5. In a chromatogram of a green food colouring, a yellow spot is near the top and a blue spot is lower. Which dye clings more strongly to the paper?
   The blue dye, because it was left lower down the paper.
6. Correct this statement: "When salt dissolves in water it disappears, so the salt is gone."
   The salt is still there as tiny particles spread through the water; evaporating the water gets it back.
7. Correct this statement: "A solution with more grams of solute is always more concentrated."
   Concentration depends on the volume too, so compare grams per litre, not just grams.
8. Correct this statement: "Flour stirred into water is a solution."
   Flour does not dissolve, so it makes a cloudy suspension that settles if left.
9. Correct this statement: "In chromatography, draw the start line in pen and put it under the water."
   Use pencil, which does not run, and keep the line above the water so the spot is carried up, not washed away.