

Nova's Mixtures and Solutions Challenge

Learning objective: To identify and describe methods for separating mixtures, including filtering, sieving, and evaporating, and to understand the difference between soluble and insoluble substances.

Help Nova the owl sort through her science discoveries! Answer these 10 questions to show how much you know about how substances mix and separate.

Answer Key: 1. A (Mixture), 2. False, 3. Soluble, 4. C (Evaporation), 5. True, 6. Filtering, 7. D (Sieving), 8. True, 9. Insoluble, 10. False. Note: A mixture is a combination of two or more substances that can be separated.

Word bank: soluble · insoluble · mixture · filtering · evaporation · sieving · solution · dissolve

1. **1. What do we call a combination of two or more substances that are physically mixed but not chemically joined? A) A mixture*, B) A solution, C) A pure substance, D) An atom. (1 mark)**

2. **2. True or False: All solid materials will dissolve in water. (1 mark)**

3. **3. If a substance dissolves in water, we say it is _____. (1 mark)**

4. **4. Which method is best for recovering salt from a salt-water solution? A) Sieving, B) Magnetic attraction, C) Evaporation*, D) Filtering. (1 mark)**

5. **5. True or False: Filtering is useful for separating an insoluble solid from a liquid. (1 mark)**

6. **6. What is the name of the process used to separate sand from water using filter paper? (1 mark)**

7. **7. Which tool would you use to separate large pebbles from sand? A) Filter paper, B) A magnet, C) Evaporating dish, D) A sieve*. (1 mark)**

8. **8. True or False: When a substance dissolves, it forms a clear solution. (1 mark)**

9. **9. If a substance does not dissolve in water, we say it is _____. (1 mark)**

10. 10. True or False: You can always separate a mixture of salt and water by using a sieve. (1 mark)

Draw: Draw a scientific diagram showing a beaker of water and sand being poured through a funnel with filter paper into a clean flask. Label the 'residue' and the 'filtrate'.



Extension challenge: Nova wants to buy ingredients for a science experiment: salt for £1.20, sugar for £0.80, and sand for £0.50. If she has £3.00, how much change will she get after buying all three items?