

# Curriculum Aligned Competency Based Test Items







## Science

### Class 9 – Chapter 1

### Matter in Our Surroundings

Masood wanted to find out which state of a substance dissolves faster in water. He filled two similar glass jars with the same amount of water. Masood added the following substances to the jars of water.

- 10 g of copper sulphate crystal to Jar 1.
  - 10 mL of 75% copper sulphate solution to Jar 2.
- The table below shows the colour of the water in each jar after specific time periods.

Jar	Colour of water in the jars		
	after 5 minutes	after 30 minutes	after 60 minutes
Jar 1			
Jar 2			

SAS21S090101

**1** Which statement can be concluded from Masood's activity?

- Crystals dissolve partially in water.
- Liquids dissolve faster than solids in water.
- Copper sulphate dissolves faster in water than in any other liquid.
- Particles of a liquid have a stronger force of attraction than that of a solid.

Why did Masood use the same amount of water in each jar?

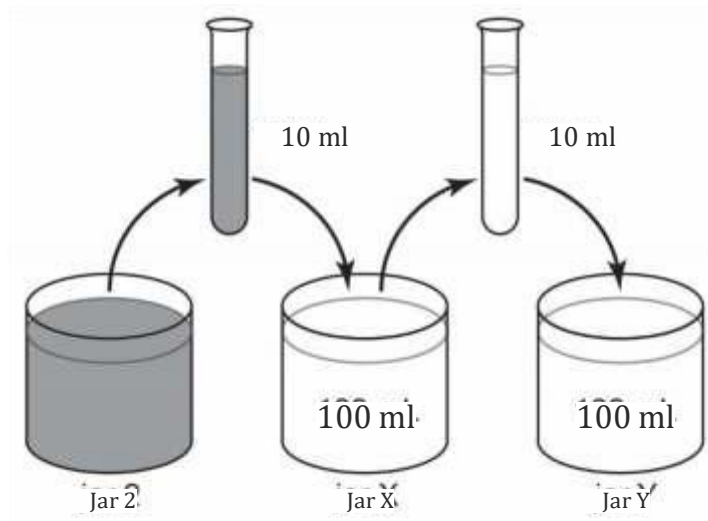
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Masood took 10 mL of the coloured water from Jar 2 and poured it into 100 mL of plain water in Jar X.

He then took 10 mL of the mixture from jar X and poured it into 100 mL of plain water in Jar Y.

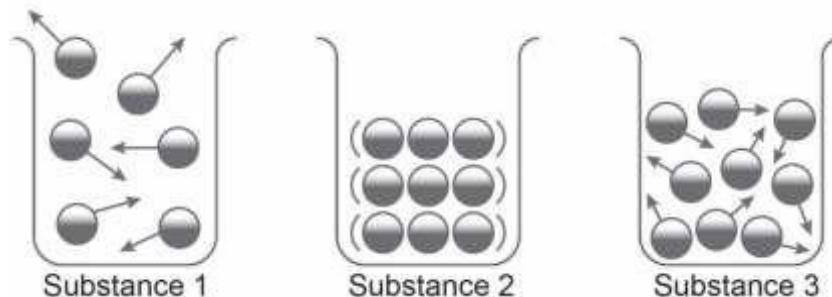


He mixed the liquids in jars X and Y.

What would be the likely colour of the liquids in Jar X and Jar Y respectively?

	colour of liquid in Jar X	colour of liquid in Jar Y
A.		
B.		
C.		
D.		

The picture shows the arrangement of particles in three different substances.



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Which of the following is true about the state of the three substances?  
Select the correct row.

	Substance 1	Substance 2	Substance 3
A.	Solid	Liquid	Gas
B.	Gas	Liquid	Solid
C.	Liquid	Gas	Solid
D.	Gas	Solid	Liquid

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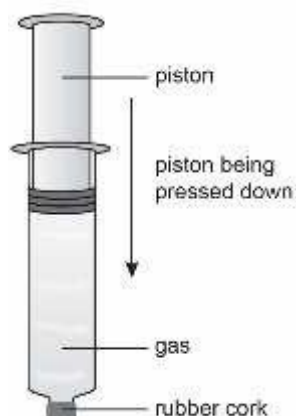
What can be done to make the particles of Substance 1 move slower?

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Tina found a syringe in her science lab.  
The mouth of the syringe was closed with a rubber cork.  
Tina tried to press the piston of the syringe as much as possible.

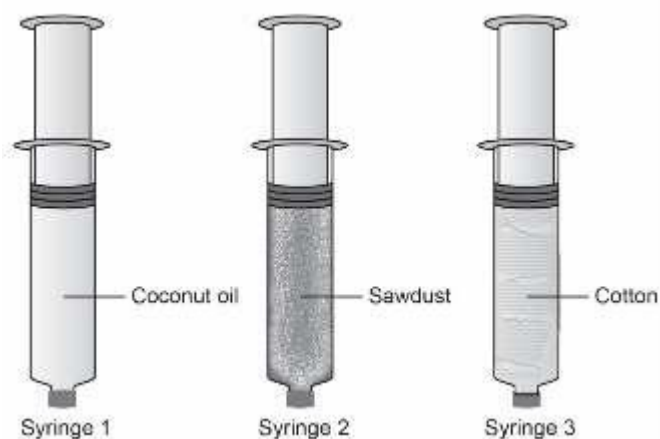


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Tina found that it was difficult to press the piston as it moved deeper.  
Explain the reason with reference to the change in space between the particles.

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Tina found three more syringes of the same size closed with rubber cork.  
She took the piston out of each syringe and filled them with coconut oil, saw dust and cotton.  
Tina closed the end of each syringe with piston.  
She then tried to press the piston of each syringe as much as possible.



Arrange the syringes in increasing order of difficulty of pressing the piston.  
Key: less difficult → more difficult

- A. Syringe 1 → Syringe 2 → Syringe 3
- B. Syringe 3 → Syringe 2 → Syringe 1
- C. Syringe 1 → Syringe 3 → Syringe 2
- D. Syringe 2 → Syringe 3 → Syringe 1

Madhu poured 100 mL of water to each of four different glass vessels.  
She kept all the four vessels under the Sun.  
Madhu noted the time taken for the water in each vessel to evaporate completely.

	Vessel 1	Vessel 2	Vessel 3	Vessel 4
<b>Time taken for the water to evaporate</b>	4 hours	6 hours	2 hours	8 hours

Which of these questions can be answered based on the results of Madhu's activity?

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- A. Does the rate of evaporation of a liquid depend on its open surface area?
- B. Does the rate of evaporation of a liquid depend on its surrounding temperature?
- C. Does the rate of evaporation of a liquid depend on the material of its container? SAS21S090108
- D. Does the rate of evaporation of a liquid depend on the amount of moisture in air?

SAS21S090109

Why did Madhu pour equal amount of water in each vessel?

Explain your answer.

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Cotton clothes are comfortable to wear in summers. Which feature of cotton explains why cotton is comfortable to wear in summers?

Circle 'Yes' or 'No' for each row.

Why cotton is comfortable to wear in summers?	Yes or No
Cotton has strong fibres.	Yes/No
Cotton is a natural fabric.	Yes/No
Cotton absorbs water and has pores.	Yes/No