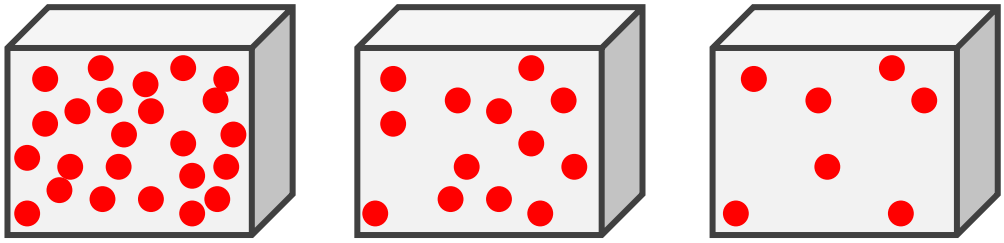
Density Ranking Tasks

Activity 1: Particle Diagrams

Question Group 1

Question 1

Consider three samples of the same gas present in containers that have the same volume. The particle diagrams show the arrangement of gas particles in the three containers. Rank the three samples according to their density.



Question 2

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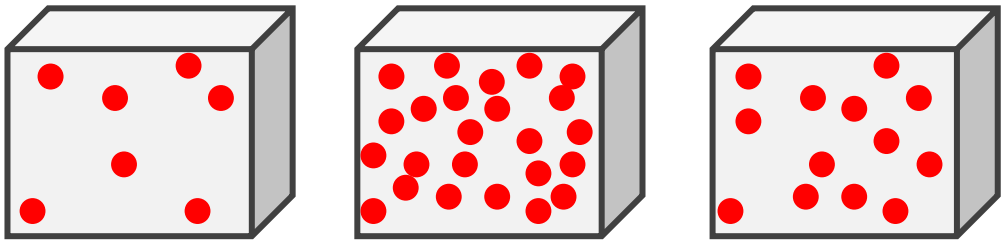

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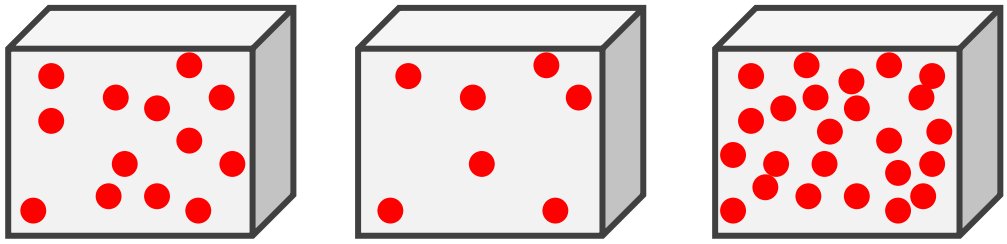
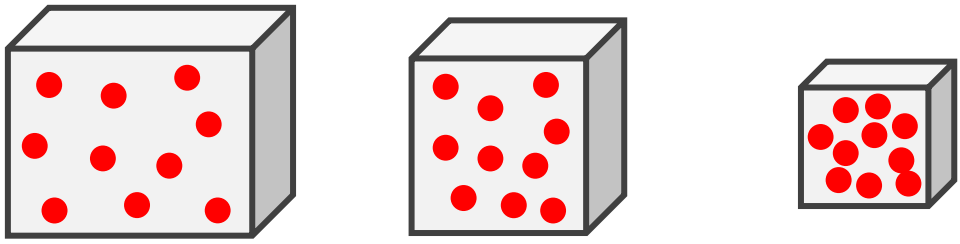


Question Group 2

Question 4

Consider three samples of the same gas present in containers that have a different volume. The particle diagrams show the arrangement of gas particles in the three containers. Rank the three samples according to their density.



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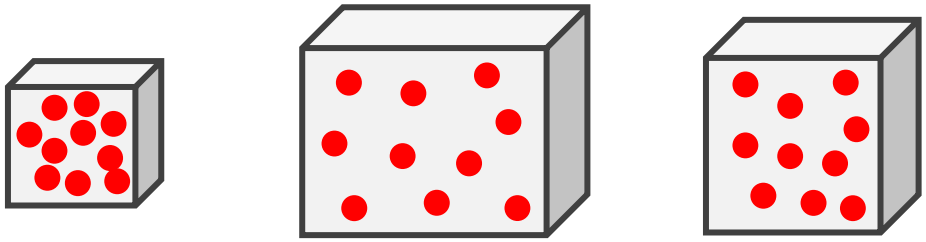

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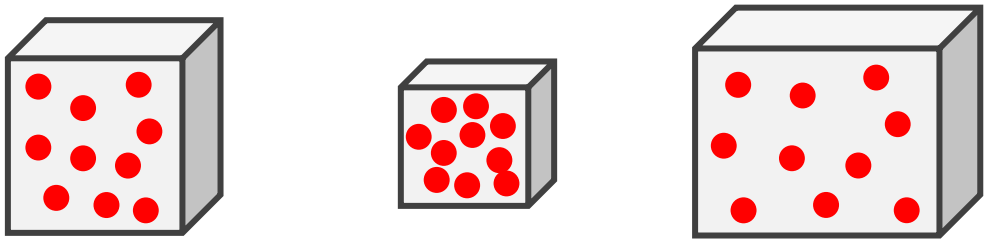

Question Group 3

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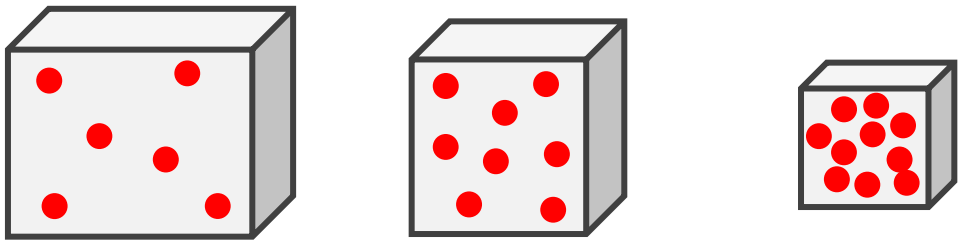

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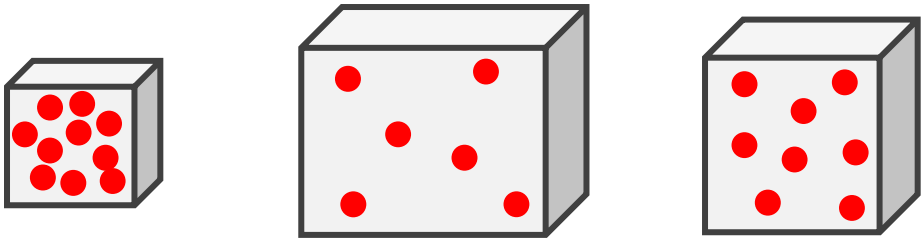
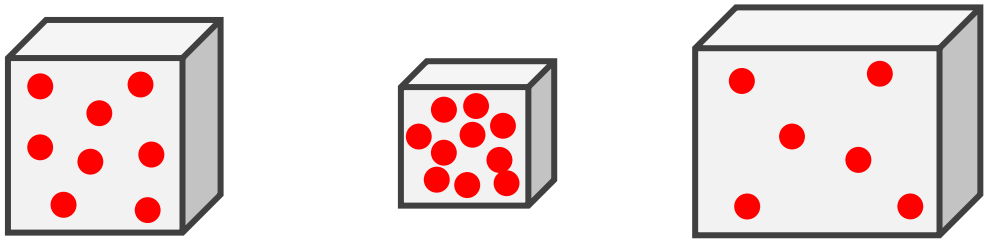


Question 9

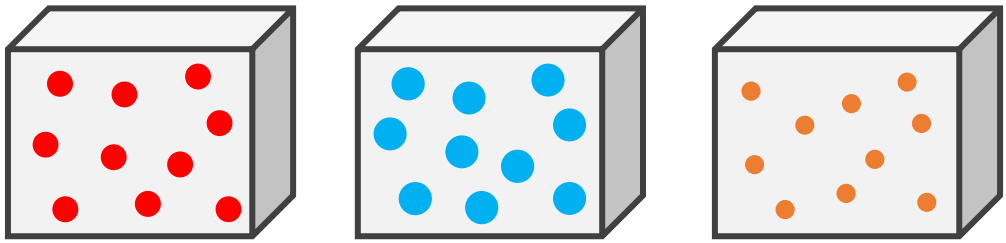
Consider three samples of the same gas present in containers that have a different volume. The particle diagrams show the arrangement of gas particles in the three containers. Rank the three samples according to their density.



Question Group 4

Question 10

Consider three samples of a different gas present in containers that have the same volume. The particle diagrams show the arrangement of gas particles in the three containers. Rank the three samples according to their density.



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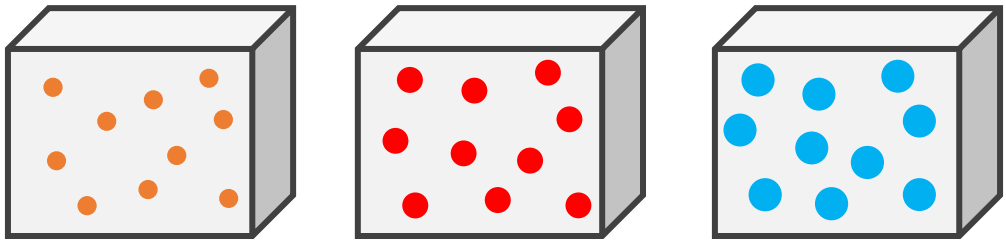

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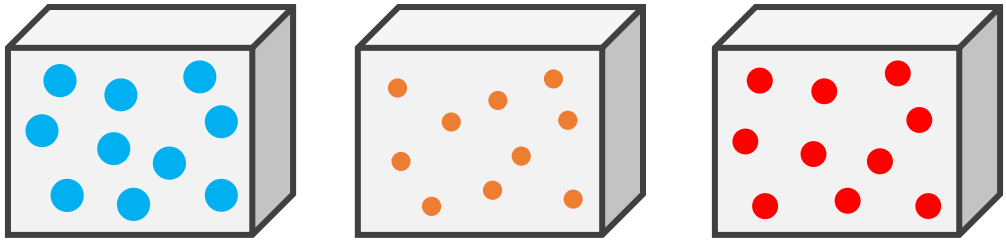

Question Group 5

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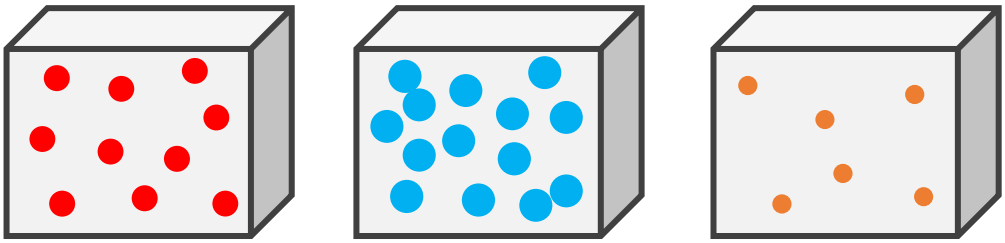

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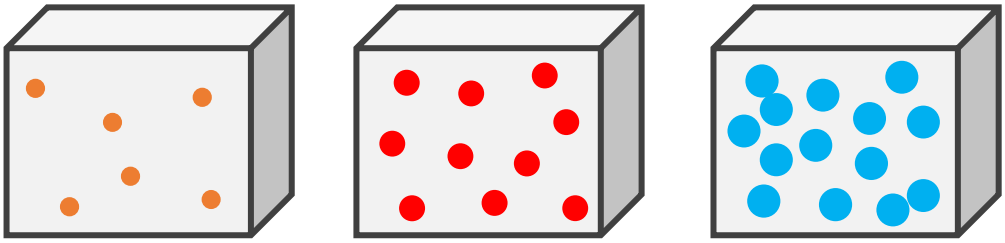

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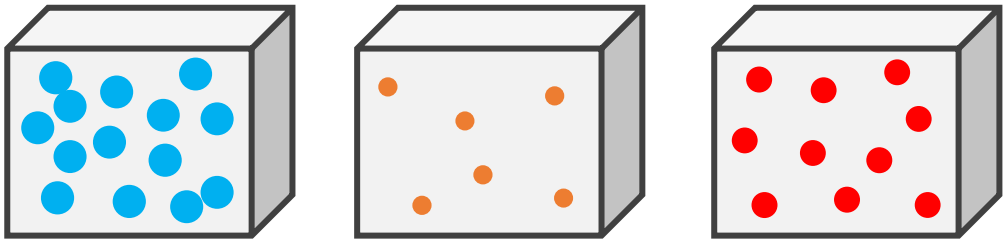
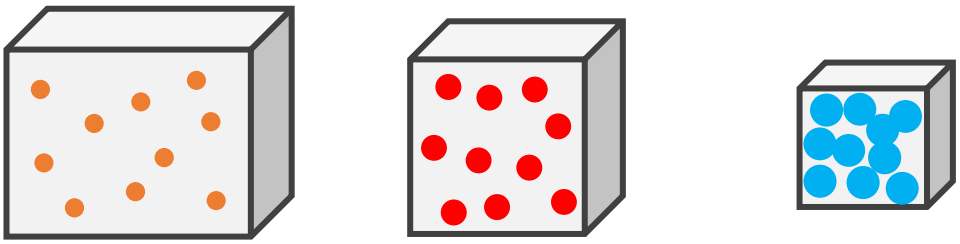


Question Group 6

Question 16

Consider three samples of a different gas present in containers that have a different volume. The particle diagrams show the arrangement of gas particles in the three containers. Rank the three samples according to their density.



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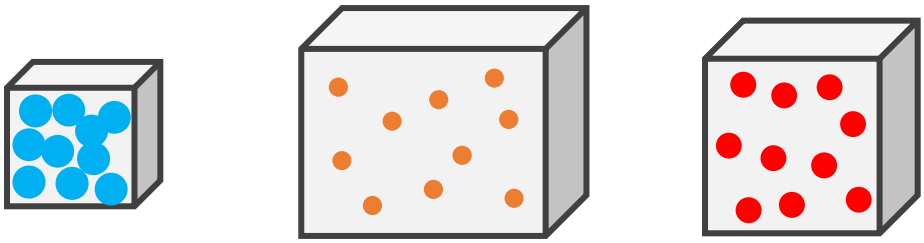

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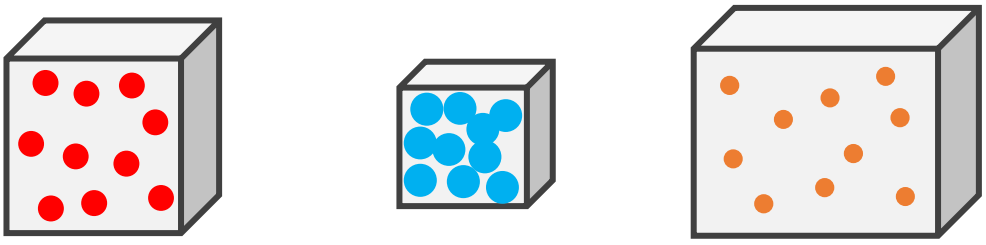


Activity 2: Mass and Volume
Question Group 7
Question 19
The measured mass and volume of three metal samples are shown. Rank the samples according to their density.

Mass	**Mass**	**Mass**
65.3 g	72.1 g	88.9 g
Volume	**Volume**	**Volume**
10.0 mL	10.0 mL	10.0 mL

Question 20
The measured mass and volume of three metal samples are shown. Rank the samples according to their density.

Mass	**Mass**	**Mass**
88.9 g	65.3 g	72.1 g
Volume	**Volume**	**Volume**
10.0 mL	10.0 mL	10.0 mL

Question 21
The measured mass and volume of three metal samples are shown. Rank the samples according to their density.

Mass	**Mass**	**Mass**
72.1 g	88.9 g	65.3 g
Volume	**Volume**	**Volume**
10.0 mL	10.0 mL	10.0 mL

Question Group 8

Question 22

The measured mass and volume of three metal samples are shown. Rank the samples according to their density.

Mass	**Mass**	**Mass**
50.0 g	50.0 g	50.0 g
Volume	**Volume**	**Volume**
7.9 mL	6.6 mL	9.2 mL

Question 23

The measured mass and volume of three metal samples are shown. Rank the samples according to their density.

Mass	**Mass**	**Mass**
50.0 g	50.0 g	50.0 g
Volume	**Volume**	**Volume**
9.2 mL	7.9 mL	6.6 mL

Question 24

The measured mass and volume of three metal samples are shown. Rank the samples according to their density.

Mass	**Mass**	**Mass**
50.0 g	50.0 g	50.0 g
Volume	**Volume**	**Volume**
6.6 mL	9.2 mL	7.9 mL

Question Group 9

Question 25

The measured mass and volume of three metal samples are shown. Rank the samples according to their density.

Mass	**Mass**	**Mass**
48.9 g	67.2 g	34.8 g
Volume	**Volume**	**Volume**
6.2 mL	9.8 mL	7.1 mL

Question 26

The measured mass and volume of three metal samples are shown. Rank the samples according to their density.

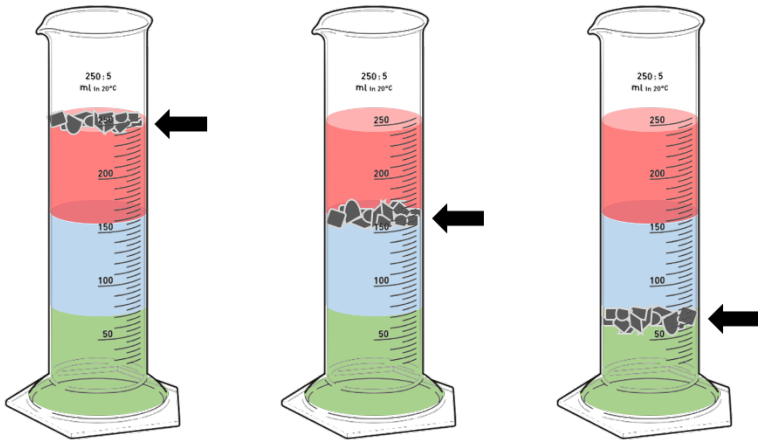
Mass	**Mass**	**Mass**
34.8 g	48.9 g	67.2 g
Volume	**Volume**	**Volume**
7.1 mL	6.2 mL	9.8 mL

Question 27

The measured mass and volume of three metal samples are shown. Rank the samples according to their density.

Mass	**Mass**	**Mass**
67.2 g	34.8 g	48.9 g
Volume	**Volume**	**Volume**
9.8 mL	7.1 mL	6.2 mL

Activity 3: Density Observations
Question Group 10
Question 28
A density column is prepared in a cylinder using three different liquids, each colored with a drop of food coloring. Three samples of household objects are shredded and dropped into the cylinder. The diagrams show where the shredded materials settle. Rank the samples according to their density.



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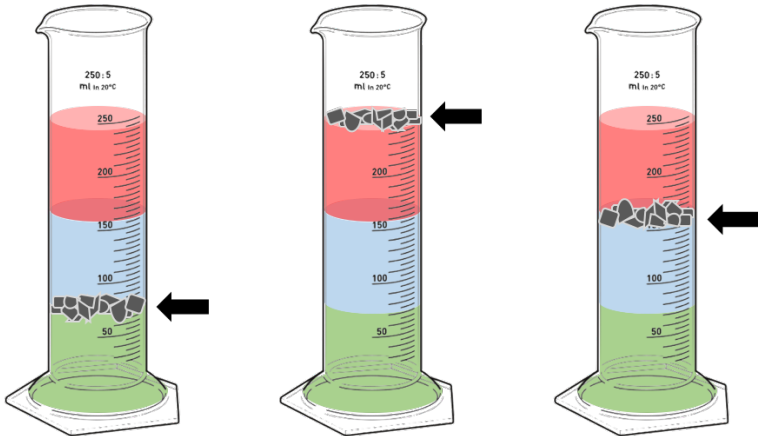
A density column is prepared in a cylinder using three different liquids, each colored with a drop of food coloring. Three samples of household objects are shredded and dropped into the cylinder. The diagrams show where the shredded materials settle. Rank the samples according to their density.



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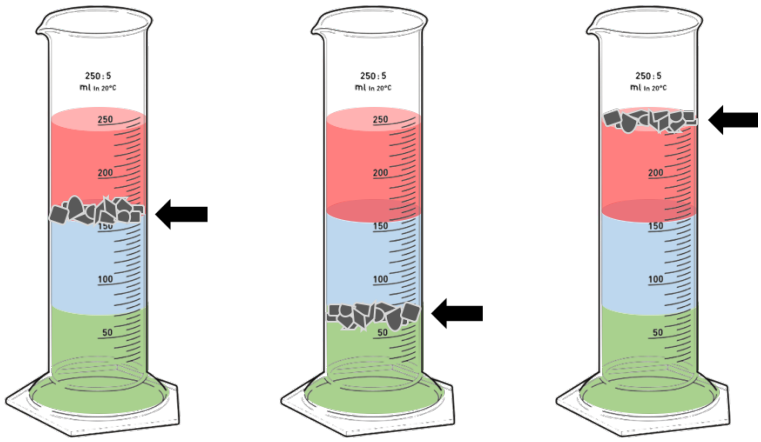
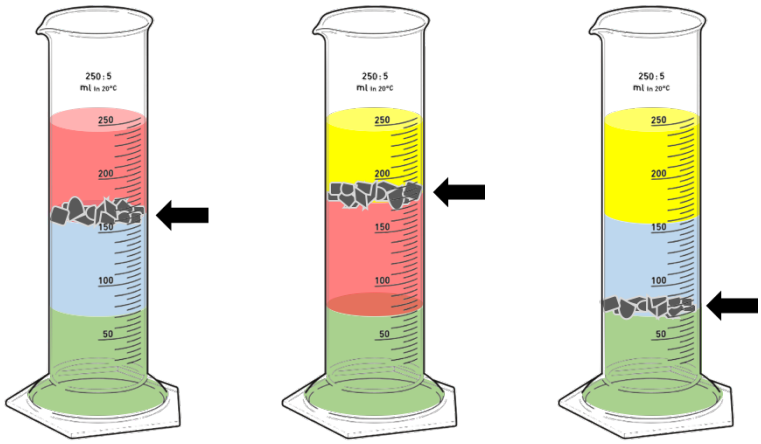
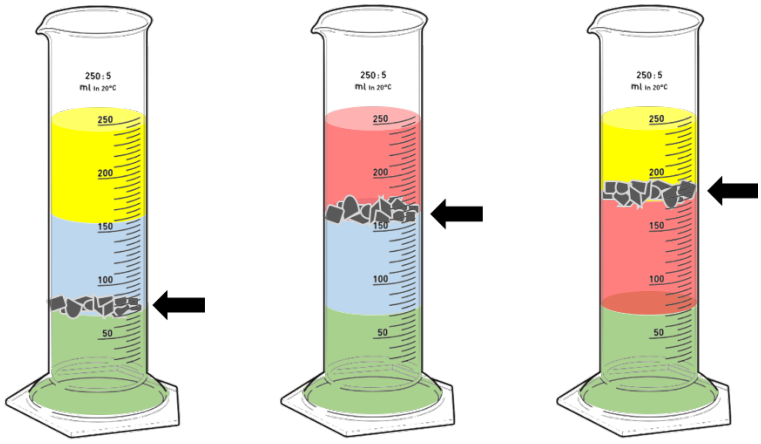
A density column is prepared in a cylinder using three different liquids, each colored with a drop of food coloring. Three samples of household objects are shredded and dropped into the cylinder. The diagrams show where the shredded materials settle. Rank the samples according to their density.



Question Group 11
Question 31
Four different liquids are used to prepare different density columns. Then three samples of household objects are shredded and dropped into each column. The diagrams show where the shredded materials settle. Rank the samples according to their density.

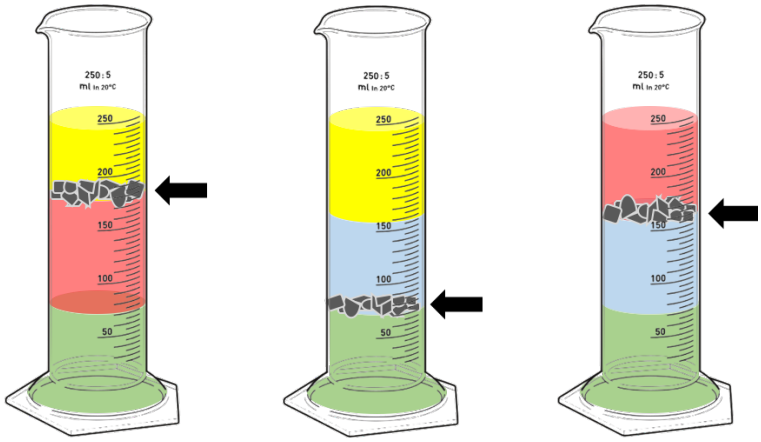


Question 32
Four different liquids are used to prepare different density columns. Then three samples of household objects are shredded and dropped into each column. The diagrams show where the shredded materials settle. Rank the samples according to their density.

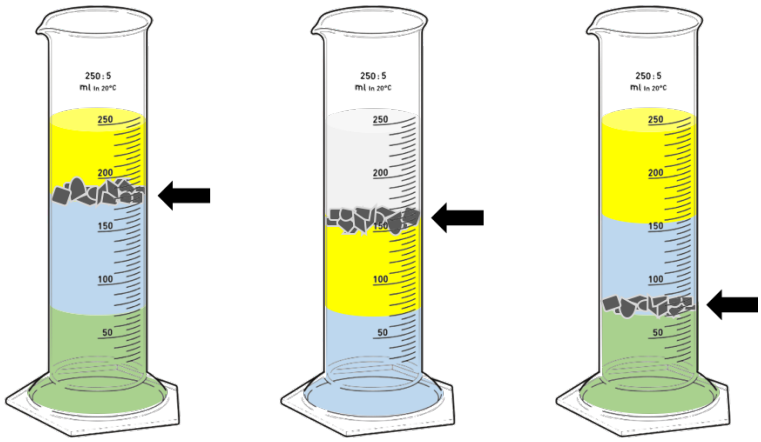


Question 33

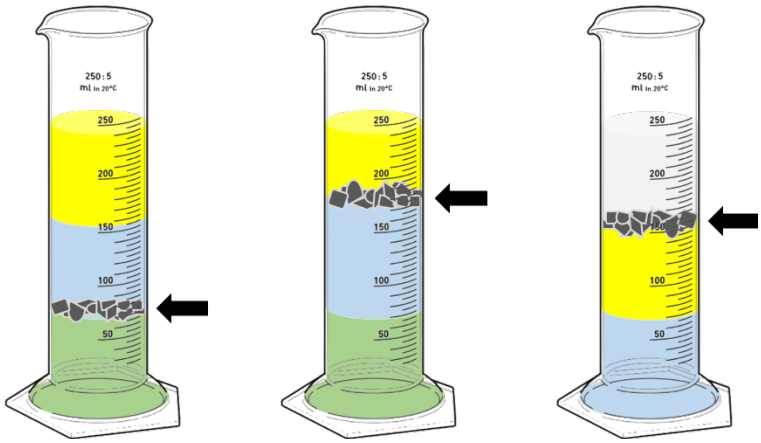
Four different liquids are used to prepare different density columns. Then three samples of household objects are shredded and dropped into each column. The diagrams show where the shredded materials settle. Rank the samples according to their density.



Question Group 12
Question 34
Five different liquids are used to prepare different density columns. Then three samples of household objects are shredded and dropped into each column. The diagrams show where the shredded materials settle. Rank the samples according to their density.

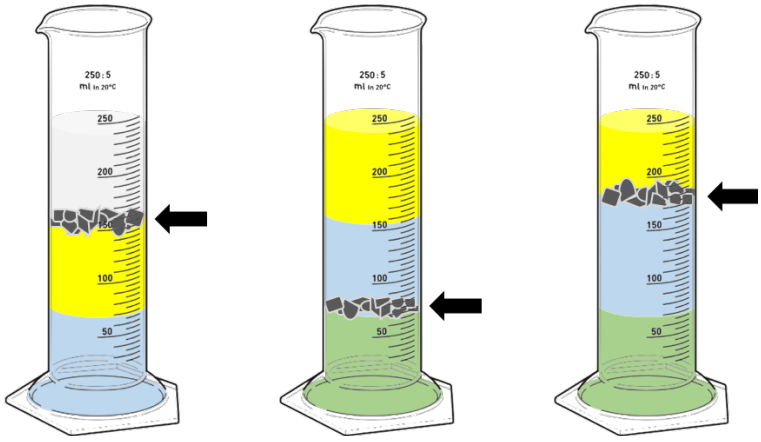


Question 35
Five different liquids are used to prepare different density columns. Then three samples of household objects are shredded and dropped into each column. The diagrams show where the shredded materials settle. Rank the samples according to their density.

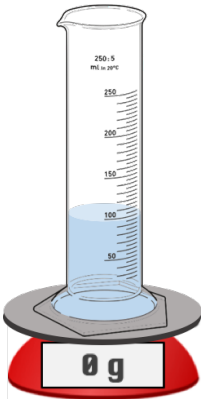


Question 36

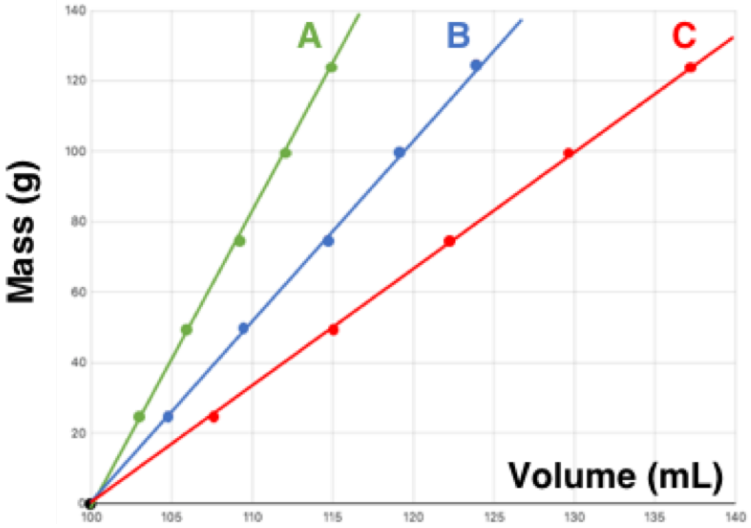
Five different liquids are used to prepare different density columns. Then three samples of household objects are shredded and dropped into each column. The diagrams show where the shredded materials settle. Rank the samples according to their density.



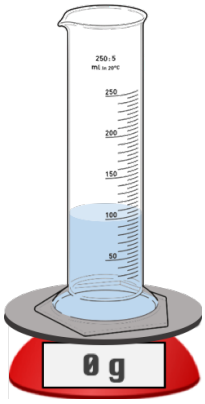
Question Group 13
Question 37



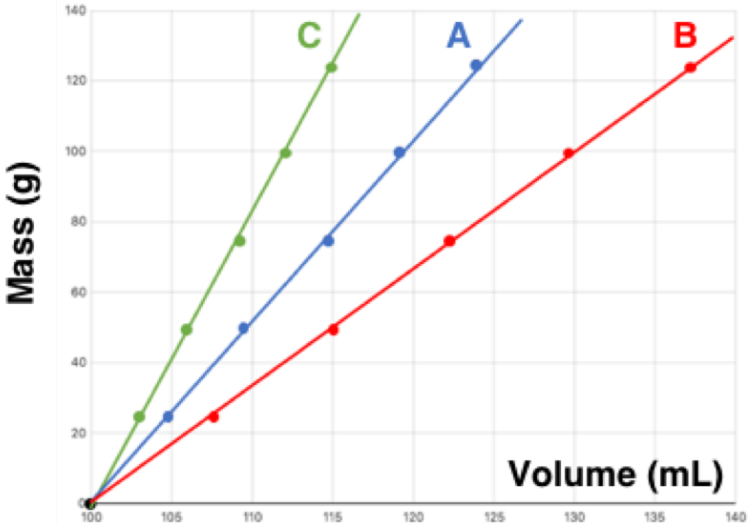
A graduated cylinder is filled with 100.0 mL of water. The cylinder is placed on a mass balance and tared (zeroed). In three different studies, samples of metal beads are added to the cylinder and their mass and the new volume reading are recorded sor several trials. Plots are constructed for each sample. Rank the samples according to their density.



Question 38

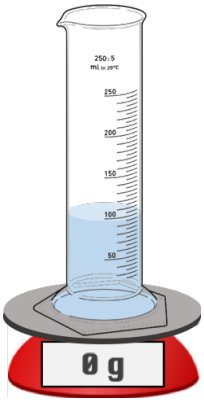


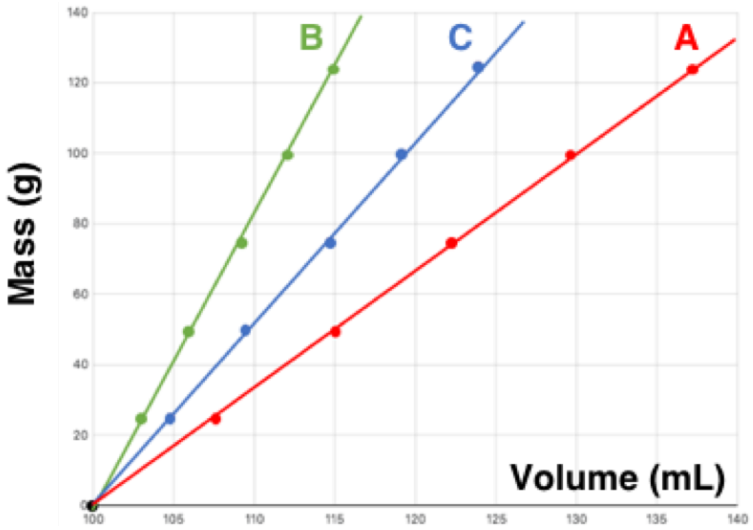
A graduated cylinder is filled with 100.0 mL of water. The cylinder is placed on a mass balance and tared (zeroed). In three different studies, samples of metal beads are added to the cylinder and their mass and the new volume reading are recorded. Plots are constructed for each sample. Rank the samples according to their density.



Question 39

A graduated cylinder is filled with 100.0 mL of water. The cylinder is placed on a mass balance and tared (zeroed). In three different studies, samples of metal beads are added to the cylinder and their mass and the new volume reading are recorded. Plots are constructed for each sample. Rank the samples according to their density.

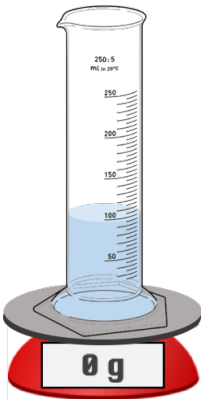


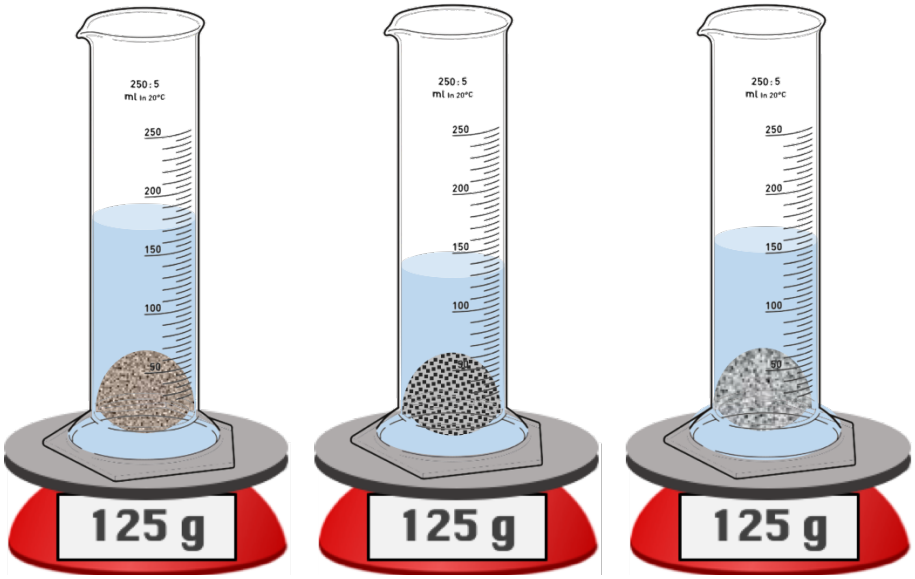


Question Group 14

Question 40

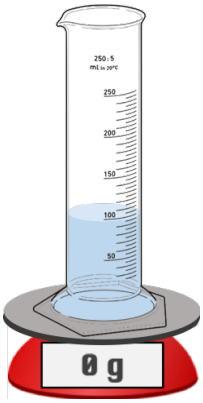
A graduated cylinder is filled with 100.0 mL of water. The cylinder is placed on a mass balance and tared (zeroed). In three different studies, samples of solid are added to the cylinder. The mass of solid and the new volume reading are shown. Rank the samples according to their density.

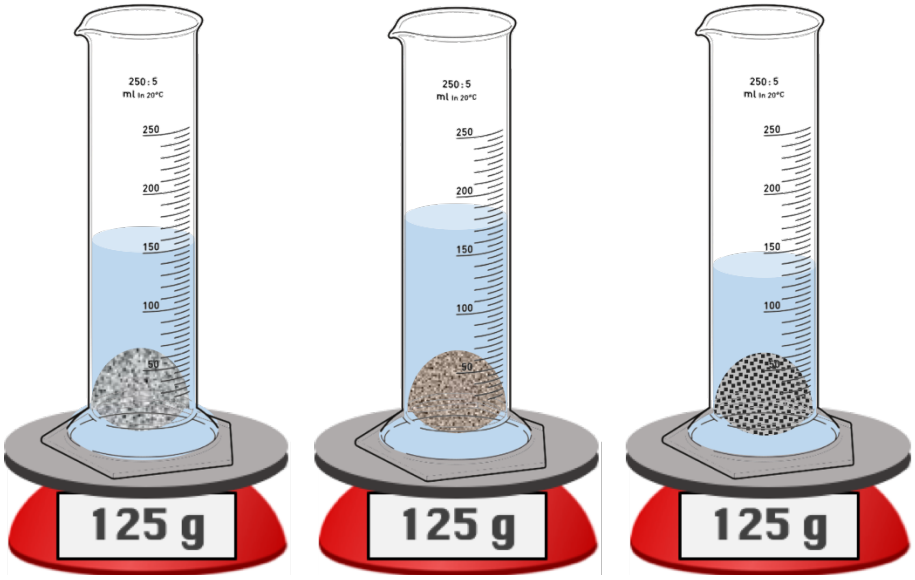




Question 41

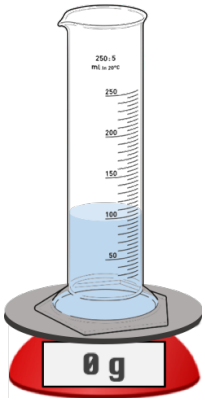
A graduated cylinder is filled with 100.0 mL of water. The cylinder is placed on a mass balance and tared (zeroed). In three different studies, samples of solid are added to the cylinder. The mass of solid and the new volume reading are shown. Rank the samples according to their density.

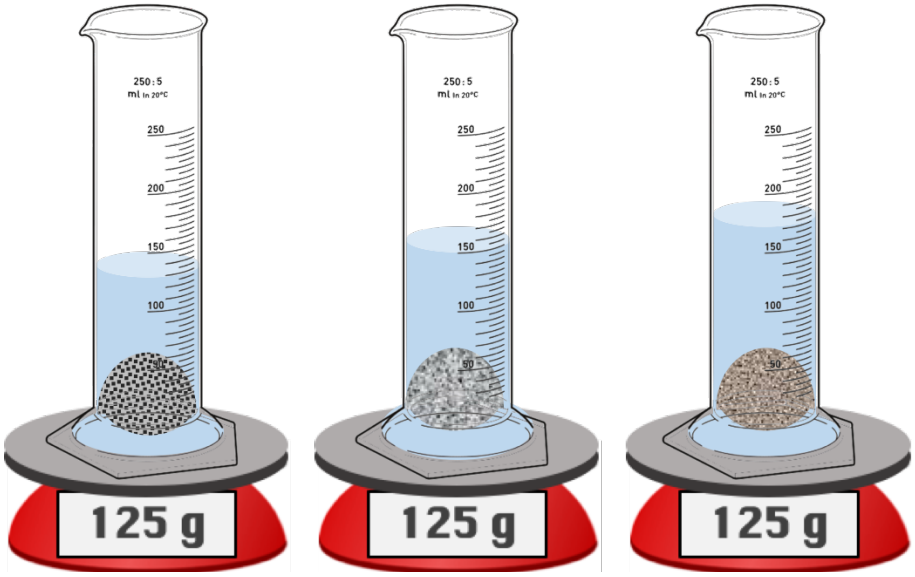




Question 42

A graduated cylinder is filled with 100.0 mL of water. The cylinder is placed on a mass balance and tared (zeroed). In three different studies, samples of solid are added to the cylinder. The mass of solid and the new volume reading are shown. Rank the samples according to their density.

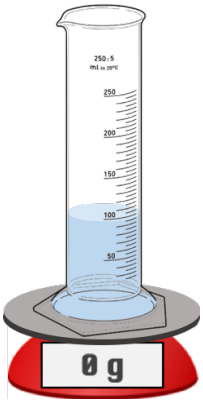


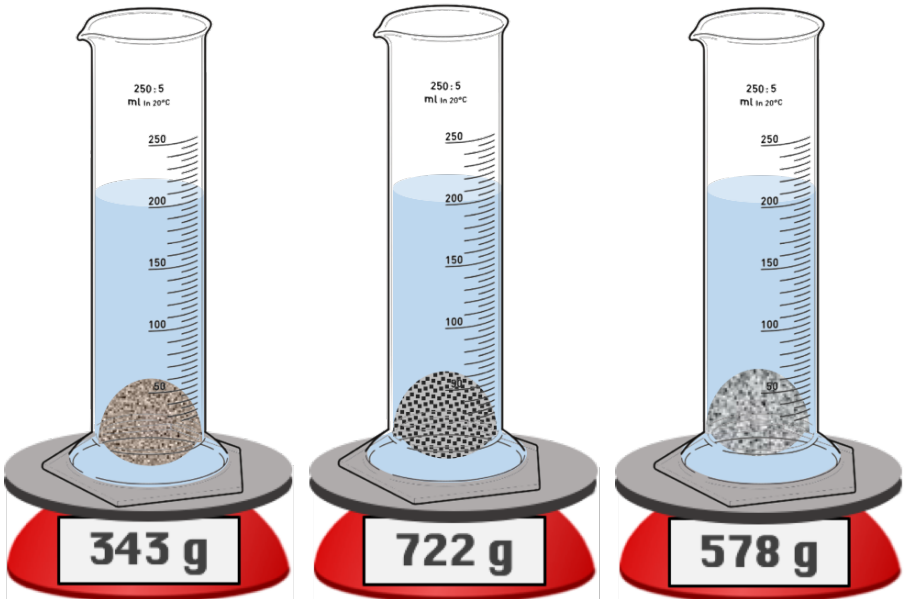


Question Group 15

Question 43

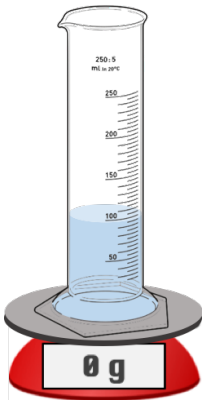
A graduated cylinder is filled with 100.0 mL of water. The cylinder is placed on a mass balance and tared (zeroed). In three different studies, samples of solid are added to the cylinder. The mass of solid and the new volume reading are shown. Rank the samples according to their density.

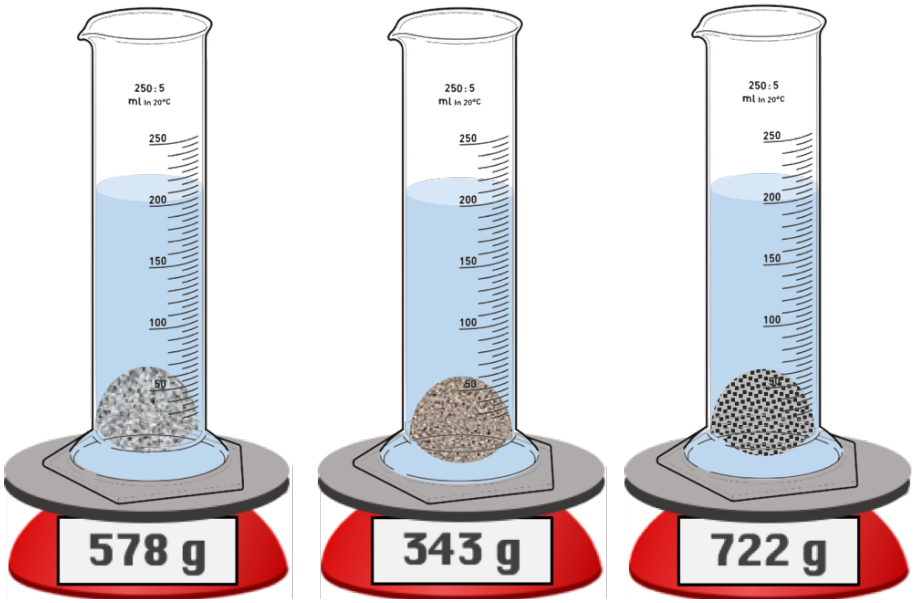




Question 44

A graduated cylinder is filled with 100.0 mL of water. The cylinder is placed on a mass balance and tared (zeroed). In three different studies, samples of solid are added to the cylinder. The mass of solid and the new volume reading are shown. Rank the samples according to their density.





Question 45

A graduated cylinder is filled with 100.0 mL of water. The cylinder is placed on a mass balance and tared (zeroed). In three different studies, samples of solid are added to the cylinder. The mass of solid and the new volume reading are shown. Rank the samples according to their density.