Feedback Lesson

Do Now:

1. Define density.
   The mass per unit volume.
2. State the equation to calculate density.
   Density = mass/volume
3. Identify the state of matter with the highest density.
   Solid
4. Identify the state of matter in which the forces between particles are the strongest.
   Solid
5. Name a piece of equipment used to measure volume.
   Measuring cylinder, beaker, pipette

Do Now

Feedback Lesson

Do Now:

1. Define density.
2. State the equation to calculate density.
3. Identify the state of matter with the highest density.
4. Identify the state of matter in which the forces between particles are the strongest.
5. Name a piece of equipment used to measure volume.

Drill:

1. Put the states of matter in order of increasing internal energy.
2. Identify the state(s) of matter that can be compressed.
3. Identify the state(s) of matter that have a fixed volume.

Do Now

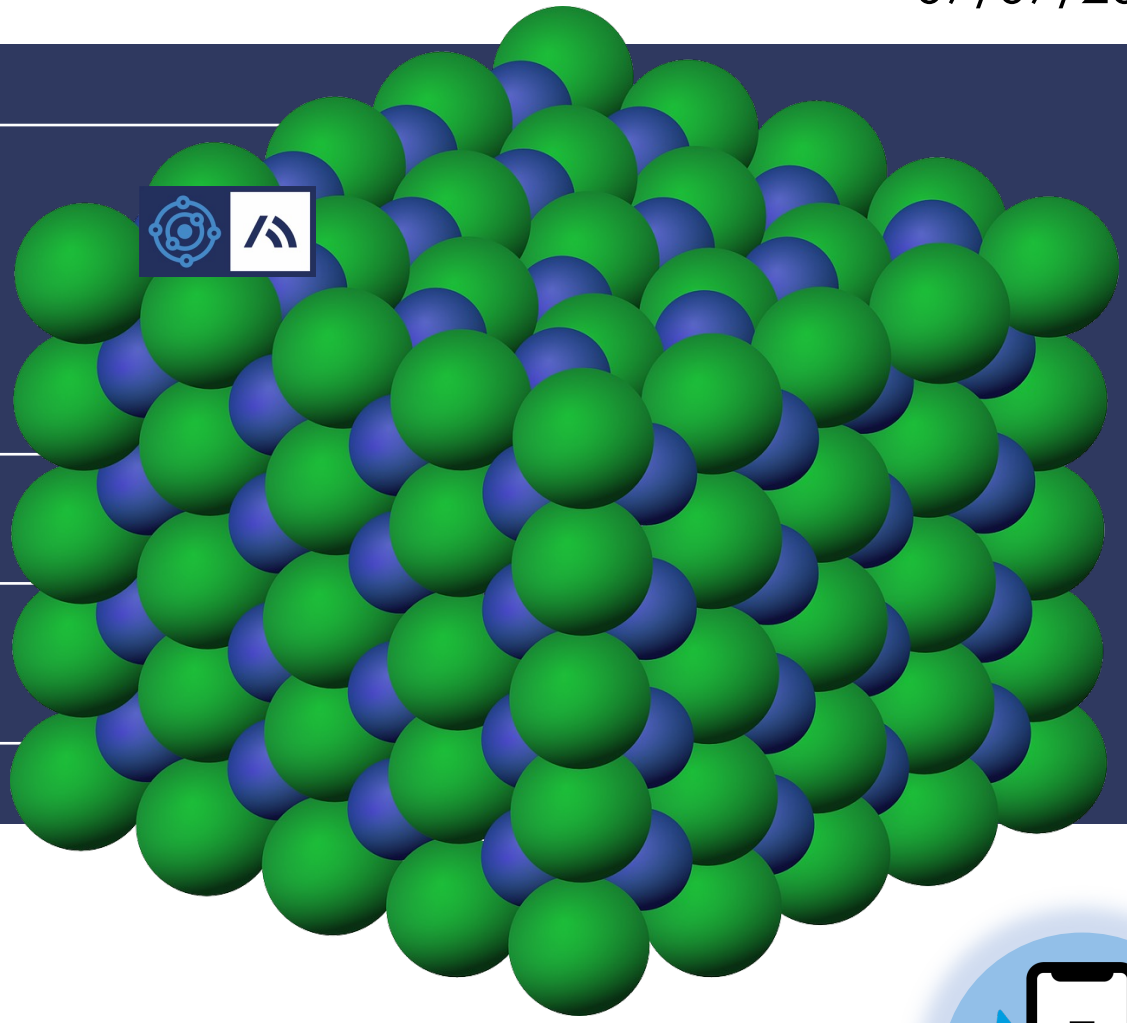
ArkCurriculum+

07/07/2023

Feedback Lesson

P4.1.7

Science
Mastery



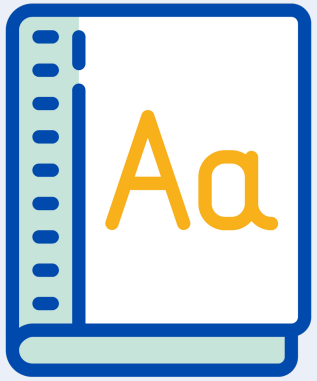
P4.2.1 Prior Knowledge Review
P4.2.2 Density
P4.2.3 Measuring Density
P4.2.4 Gas Pressure
P4.2.5 Taking it Further: Pressure
P4.2.6 Taking it Further: Pressure in Fluids
➢ **P4.2.7 Feedback Lesson**

Lesson Objectives

Following this lesson, students will be able to:

- State…
- Describe…
- Explain…

Key Words:



matter	density	volume
density	mass	pressure

This is the fix-it portion of the lesson

The **fix-it** is an opportunity to respond to gaps in knowledge, especially those identified by the previous lesson's exit ticket.

- The teacher should customise this slide as needed, to facilitate
  - **reteach**, **explanation, demonstration** or **modelling** of ideas and concepts that students have not yet grasped or have misunderstood.
  - **practise** answering specific questions or of key skills.
  - **redrafting** or **improving** previous work.

Fix-it

The Big Idea: Energy is Conserved

Science Mastery

Matter

Why do some substances exist as solids and others as gases? What is the difference between solids and liquids? Why do some objects float on water and others sink? How can the density of objects be compared?

Matter makes up everything. All objects in the universe are made of particles and it is the arrangement of these particles that determines their properties. Different materials can exist as solids, liquids or gases at room temperature, which means their particles are arranged in different ways.

This is the **third** unit we are studying as part of the big idea: **Energy is Conserved**

In this unit we will learn about energy in particles and how they are arranged in the different states of matter and their properties. We will look at density and how to measure it, as well as how particles exert pressure.

We will develop our mathematical skills in this unit by practising substitutions into equations.

We will develop our practical enquiry skills in this unit by doing an investigation into how the density of regular and irregular shaped objects can be measured.

TASKS:
What subject will this unit focus on? BIOLOGY CHEMISTRY PHYSICS
(circle the correct subject)

There are lots of keywords underlined above. List these into the two columns:

Words I know	Words I haven't seen before

Science Mastery

To answer before the unit:

1. What are you most excited to learn about in this topic?
2. What do you already know about this topic?
3. Why do you think it's important to learn about how energy is conserved?
4. What knowledge from previous science lessons might help us?
5. What questions do you have about this topic?

To answer at the end of the unit:

1. Tick off any words in the 'words I haven't seen before' column that you are now confident with. Circle any you still need more practice to use.
2. What have you most enjoyed about this unit?
3. What more would you like to learn about forces as part of the big idea: 'energy is conserved'?

Introduction

Answers

Can you explain why your answer was wrong?

Question	Answer
1	C
2	C
3	A
4	B
5	C
6	B
7	D
8	C
9	B

Question	Answer
10 (Physics only)	A
11 (Physics only)	C
12 (Physics only, HT)	C
13 (Physics only, HT)	B
14 (Physics only, HT)	A
15 (Physics only, HT)	B
16 (Physics only, HT)	A

Answers

1.

Density = mass / volume [1]

Density = 18 / 45 [1]

Density = 0.4 g/cm^3 [1]

2.

- **Measure the mass of the car**
- in grams/kg
- Using a (mass) balance (allow scales)
- **Measure the volume of the car**
- Using a displacement/Eureka can
- **By determining the volume of water displaced**
- in mL/cm^3/L
- **Determine density using mass/volume**
- in g/cm^3, kg/m^3 or other correct combination of units

Answers

3.

- (Particles in a solid are held in a) regular arrangement [1]
- (Particles in a liquids are) randomly arranged [1]
- Particles are held close together in both (states of matter) [1]
- Forces (of attraction) between particles are stronger in solids (than liquids) [1]

Answers: Physics

6.

Work is done on the air in the tyre [1]

The temperature increases [1]

(As temperature increases,) kinetic energy increases [1]

Internal energy is the sum of kinetic and potential energy [1]

Feedback

Lesson P4.1.7	
What was good about this lesson?	What can we do to improve this lesson?

Send us your feedback by clicking this link. Thank you!