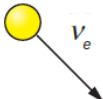
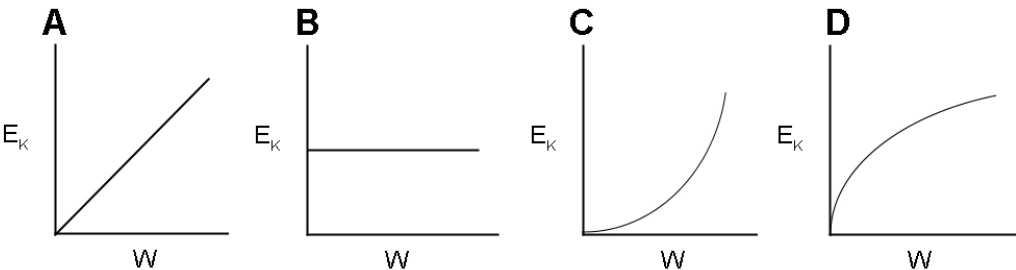
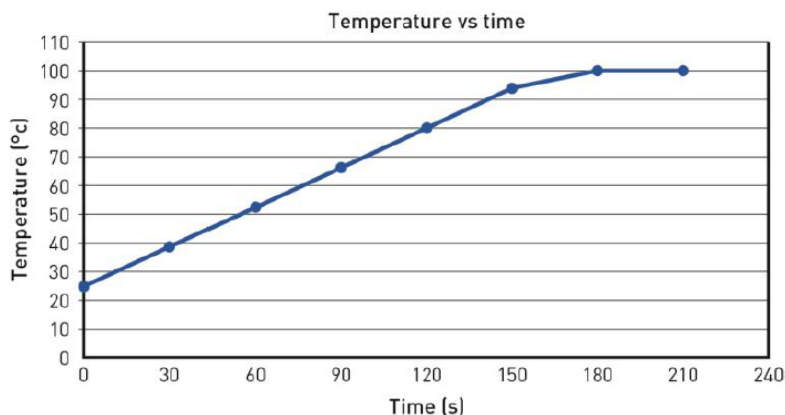


UNIT 1&2 STUDENT BOOK	
U1&2 SB P 87	Ch 1 Revision Q45. Unit for expansion coefficient is K^{-1} not $m K^{-1}$
U1&2 SB P 96	U1&2 Chapter 2.3 page 96 Worked Example 2.3C Answer is 26°C (2 sf)
U1&2 SB P 96	Worked Example 2.3D. Last three lines should read: $-846T_f = -58720$ $-846T_f = 69.4^{\circ}\text{C}$ $= 69^{\circ}\text{C}$ (2sf)
U1&2 P108	Chapter 2 Review Question 16. "A 20 000 J 200 J energy supply..."
U1&2 SB P168	Chapter 5.4 page 168 Figure 3 
U1&2 SB p 195	Chapter 6, Q5(c): ${}_{92}^{235}\text{U} + {}_0^1\text{n} \rightarrow {}_{60}^{152}\text{Nd} + {}_{32}^{81}\text{?} + ?{}_0^1\text{n}$
U1&2 SB P 226	Chapter 7 Revision Q21. Change to "In moving an electron from point X to point Y ..."
U1&2 SB P265	Chapter 9 Review Question 6. First column, second row should be labelled 'c'.
U1&2 SB P314	Chapter 11.3, Page 314. In margin. Mass - a characteristic of a body's resistance to <i>change in</i> motion; also called inertia
U1&2 SB p 373	Chapter 13. Revision Questions Q2. Graph is missing. It looks like this:  Suggest you delete photo of lift (Figure 1) and replace it with the figure shown above. It should go after Q2 on page 373.
U1&2 SB P 387	Chapter 14 – CYL 14.2 Q9. Should start with "Figure 1 (page 382)..." not Figure 12.
UNIT 1&2 OBOOK	
U1&2 obook	Chapter 6, Q5(c): ${}_{92}^{235}\text{U} + {}_0^1\text{n} \rightarrow {}_{60}^{152}\text{Nd} + {}_{32}^{81}\text{?} + ?{}_0^1\text{n}$
U1&2 obook	Chapter 7 Answers, Revision Q21. "In moving an electron from point X to point Y ..."
U1&2 obook	Ch 7 Answers. Revision Q21 $V = \frac{W}{q} = \frac{2 \times 10^{-20}}{1.6 \times 10^{-19}} = 0.125 \text{ J}$
U1&2 obook	Chapter 9 Revision Q 15. $W = \frac{V}{Q}$ $= \frac{12}{18}$ $= 0.67 \text{ V}$
U1&2 obook	Chapter 9 Revision Question 15. Answer:

	$V = \frac{W}{Q}$ $W = VQ = 12 \times 18$ $= 216 \text{ J}$			
U1&2 obook	<p>Chapter 10 CYL 10.5 Q2. Corrections are shown in red.</p> <p>a i Calculate the bungee jumper's displacement and distance travelled after 40 s.</p> <p style="text-align: center;"> At 40 s, Distance = 300 + 200 Displacement (area) = 500 m </p> $= \frac{30 \times 20}{2} + \frac{-20 \times 20}{2}$ $= 300 + -200$ $= +100 \text{ m}$ <p>ii Calculate the bungee jumper's acceleration at 10 s, 30 s and 45 s.</p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; vertical-align: top;"> <p>Acceleration at 10 s</p> <p>= gradient</p> $= \frac{20}{20}$ $= 1.0 \text{ m s}^{-2}$ </td> <td style="text-align: center; vertical-align: top;"> <p>Acceleration at 30 s</p> $= \frac{-20 - +20}{20}$ $= \frac{-40}{20}$ $= -2.0 \text{ m s}^{-2}$ </td> <td style="text-align: center; vertical-align: top;"> <p>Acceleration at 45 s</p> $= \frac{0 - -20}{10}$ $= \frac{+20}{10}$ $= +2.0 \text{ m s}^{-2}$ </td> </tr> </table> <p>iii Sketch an acceleration–time graph.</p>	<p>Acceleration at 10 s</p> <p>= gradient</p> $= \frac{20}{20}$ $= 1.0 \text{ m s}^{-2}$	<p>Acceleration at 30 s</p> $= \frac{-20 - +20}{20}$ $= \frac{-40}{20}$ $= -2.0 \text{ m s}^{-2}$	<p>Acceleration at 45 s</p> $= \frac{0 - -20}{10}$ $= \frac{+20}{10}$ $= +2.0 \text{ m s}^{-2}$
<p>Acceleration at 10 s</p> <p>= gradient</p> $= \frac{20}{20}$ $= 1.0 \text{ m s}^{-2}$	<p>Acceleration at 30 s</p> $= \frac{-20 - +20}{20}$ $= \frac{-40}{20}$ $= -2.0 \text{ m s}^{-2}$	<p>Acceleration at 45 s</p> $= \frac{0 - -20}{10}$ $= \frac{+20}{10}$ $= +2.0 \text{ m s}^{-2}$		
U1&2 obook	<p>U1&2 Challenge Ch 10.1 answers. Last paragraph is incomplete. Please add: Direction: D is at an elevation of 26.6° to the horizontal. If you mark a point directly under D, it will be 26.6° to the E of N. The distance between A and D is 12.2 m. Thus, the displacement BD is 12.2 m N 26.6° E at an elevation of 26.6°.</p>			
U1&2 obook	<p>CYL 10.5 Q4b. Answer: Instantaneous speed = the speed value (y-axis) at that time = 5 m s^{-1} Note: read the question carefully. The question has <u>not</u> asked for instantaneous acceleration at 5 s which would be the gradient to the tangent to the line at 5 s, or 1 m s^{-2}.</p>			
U1&2 obook	Chapter 11 Revision Q20			

	$F_{\text{total}} = F_{\text{w}} + F_{\text{additional}}$ $3 \times 10^4 = 2.5 \times 10^3 \times 9.8 + 2.5 \times 10^3 a$ $3 \times 10^4 = 2.45 \times 10^4 + 2.5 \times 10^3 a$ $5500 = 2.5 \times 10^3 a$ $a = 2.2 \text{ m s}^{-2} \text{ upwards}$ $s = \frac{1}{2} at^2$ $t = \sqrt{\frac{2s}{a}}$ $= \sqrt{\frac{2 \times 500}{2.2}}$ $= 21.3 \text{ s}$
U1&2 obook	CYL12.2 Q7. Answer: $m_1 u_1 = m_1 v_1 + m_2 v_2 \text{ (let the forward direction be + direction)}$ $6000 \times 355 = 5940 v_1 + 60 \times 750$ $2\,130\,000 = 5940 v_1 + 45\,000$ $2\,085\,000 = 5940 v_1$ $v_1 = +351 \text{ m s}^{-1} \text{ (in the forward direction)}$
U1&2 obook	CYL12.2 Q10(a). Answer: $m_1 u_1 + m_2 u_2 = (m_1 + m_2) v_1$ $(0.41 \times 10^{-3}) \times u_1 + (0.170 + 0.350) \times 0 = ((0.41 \times 10^{-3}) + 0.170 + 0.350) \times 0.178$ $(0.41 \times 10^{-3}) u_1 + 0 = 0.0926$ $u_1 = \frac{0.0926}{0.41 \times 10^{-3}}$ $u_1 = +226 \text{ m s}^{-1}$
U1&2 obook	CYL 12.2 Q10(b) Fix spelling of “mas” to “mass”
U1&2 obook	Unit 1&2 Practice exam. Short Answer Question 10 A particular tube of a pipe organ can most easily produce frequencies of 686 Hz, 1029 Hz and 1372 Hz. The speed of sound in the organ is 340 m s ⁻¹ .
U1&2 obook	Filename: NCPQ_Unit_1&2_Practice_exam.docx Question 6. $\text{B } {}_{13}^{24}\text{Al} \rightarrow {}_{12}^{24}\text{Mg} + {}_{+1}^0\text{e} + \nu_e$
U1&2 obook	U1&2 Practice exam. Question 14. Answer is (A)
U1&2 obook	U1&2 Practice exam. Question 9. Calculate how many electrons are required to produce a charge of -10 μC.
U1&2 obook	Unit 1 Data Test. Dataset 2 Figure 3. Please change to this:



U1&2 obook

Unit 1 Data Test. Dataset 3 Q10. Answers. Corrections are in red.

The percentage uncertainty in the resistivity is **21.0 %** (from the $\delta\%$ uncertainty in the gradient).

The absolute uncertainty in the resistivity is: $1.20 \times 10^{-6} \Omega \text{ m} \pm 21.0 \%$, or $1.20 \times 10^{-6} \pm 0.3 \times 10^{-6}$

So the range is from $0.9 \times 10^{-6} \Omega \text{ m}$ to $1.5 \times 10^{-6} \Omega \text{ m}$.

Absolute error:

$$\begin{aligned}
 E_a &= |O - A| \\
 &= |1.20 \times 10^{-6} - 1.15 \times 10^{-6}| \Omega \text{m}^{-1} \\
 &= 0.05 \times 10^{-6} \Omega \text{m}^{-1}
 \end{aligned}$$

$$\begin{aligned}
 E\% &= \frac{E_a}{A} \times 100 \\
 &= \frac{0.05 \times 10^{-6}}{1.15 \times 10^{-6}} \times 100 \\
 &= 4.35\%
 \end{aligned}$$

The accepted value of resistivity of $1.15 \times 10^{-6} \Omega \text{ m}$ is within the experimental range of $0.9 \times 10^{-6} \Omega \text{ m}$ to $1.5 \times 10^{-6} \Omega \text{ m}$. The experiment has confirmed the resistivity of nichrome wire within the experimental limitations of the equipment.

U1&2 ASSESS QUIZZES

U1&2 obook

Assess quiz. Chapter 2 Consolidate. Q1. Add the words in red: Determine which of the following determines the **direction of** transfer..”

U1&2 obook

Assess quiz. Chapter 2 Consolidate. Q4. Add degree symbol after the 20

U1&2 obook

Assess quiz. Chapter 2 Extend. Q2.

“A **40 g** piece of iron at a temperature of 120° C is placed in a container of **600 g** of water...

U1&2 obook

Assess quiz. Chapter 2 Consolidate. Q4. Add degree symbol after the 20

U1&2 obook

Assess quiz. Chapter 4 Consolidate. Q5

- $1.68 \times 10^{-11} \text{ J}$ (correct answer)
- $1.86 \times 10^{-28} \text{ J}$ (incorrect answer)
- $5.58 \times 10^{-20} \text{ J}$ (incorrect answer)
- $1.01 \times 10^{16} \text{ J}$ (incorrect answer)

U1&2 obook

Quizzes Chapter 9 Extend Q 3
 [correct answer] a =c, b
 [incorrect answer] b, a = c
 [incorrect answer] c, a, b
 [incorrect answer] a, b, c

U1&2 obook

Quizzes Chapter 10 Extend Q2
 [correct answer] 1.5 s

	[incorrect answer] 1.0 s [incorrect answer] 2.5 s [incorrect answer] 5.4 s								
U1&2 obook	Assess Quizzes U1&2 Chapter 13 – support – Q2 <table border="1"> <tr> <td>Correct answer</td> <td>The force on the ball is at right angles to the ball's motion.</td> </tr> <tr> <td>Incorrect answer</td> <td>No net force acts on the ball.</td> </tr> <tr> <td>Incorrect answer</td> <td>No potential energy is being converted to kinetic energy.</td> </tr> <tr> <td>Incorrect answer</td> <td>No distance is covered by the ball.</td> </tr> </table>	Correct answer	The force on the ball is at right angles to the ball's motion.	Incorrect answer	No net force acts on the ball.	Incorrect answer	No potential energy is being converted to kinetic energy.	Incorrect answer	No distance is covered by the ball.
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Incorrect answer	No net force acts on the ball.								
Incorrect answer	No potential energy is being converted to kinetic energy.								
Incorrect answer	No distance is covered by the ball.								
U1&2 obook	Assess quiz. Chapter 15 Extend. Q2. 2 Calculate the wavelength of the sound in air from a piano string that has a frequency of 440 Hz, on a 25°C day. The speed of sound is related to temperature by the formula: v (sound) = $331 + 0.6T$, where T = temperature in $^{\circ}\text{C}$.								