Grade 12

School-without-Walls Package 9 (24 May to 28 May 2021)

Homework_Day 1 (24 May 2021)

Subject	Click on the Youtube Links	Things to Note
English	Refer to the notes on Unit 7: Focus on Writing and Speaking Skills (Given to you) Complete Section A (Vocabulary) Question 1 to Question 4	

Unit 7: Focus on writing and speaking skills

A Vocabulary

1 **In Unit 7 of the Coursebook, you saw the words *impression* and *professional*. Use the table below to make more words that are spelt with -ss-. Join letters from column A with letters from column B, using -ss- in the middle.**

A		B
a		ue
ba		ette
pa		ertion
ca		oon
me	-ss-	ive
ma		port
ti		age
succe		enger
pa		ful

a *a + ss + ertion = assertion*

b _____

c _____

d _____

e _____

f _____

g _____

h _____

i _____

2 **Match the words from Activity A1 to a definition below.**

a paper handkerchief _____

b very large _____

c person who is transported in a vehicle _____

d something you strongly believe _____

e official document you must travel with _____

f doing well _____

g magnetic tape _____

h information given to someone _____

i large woodwind instrument _____

3 **Use the secret code to find words from Unit 7 in the grid below. What name is hidden in the vertical column?**

1	2	3	4	5	6	7	8	9	10	11	12	13
a	b	c	d	e	f	g	h	i	j	k	l	m

14	15	16	17	18	19	20	21	22	23	24	25	26
n	o	p	q	r	s	t	u	v	w	x	y	z

Example: 2 5 3 1 21 19 5 = because

														because
					2	5	**3**	1	21	19	5			
					4	9	**1**	12	15	7	21	5		
			16	1	22	5	**13**	5	14	20				
					6	9	**2**	5	18					
		12	1	2	15	21	**18**							
						19	**9**	4	5	23	1	12	11	
							4	5	6	5	14	3	5	
		21	14	4	5	18	**7**	18	15	21	14	4		
					6	21	**5**	12	12	5	4			

_____

4 **Below are some of the most commonly m isspelt words in the English language. Write the correct spellings next to each word. In the third column, write the words in alphabetical order.**

independant _____ _____

definate _____ _____

concience _____ _____

	mischievious _____ _____ accomadate _____ _____ existance _____ _____ calender _____ _____ indispensible _____ _____ disciplane _____ _____ lisense _____ _____ changable _____ _____ maintenunce _____ _____ hierarche _____ _____ exhilerate _____ _____ alphabeticle _____ _____ noticable _____ _____ beleive _____ _____	
Mathematics	Factor Theorem View Answer to Practice Now 10 https://youtu.be/T4ynZcGbaTQ View Answer to Practice Now 11 https://youtu.be/AsKca04-9LQ	**Homework Exercise 1D #1a, d, 2 and 4**
Chemistry	Chapter 13 Chemical Thermodynamics Click Grade 12 Chemistry Chapter 13 Notes for the notes for the whole chapter. View Difference between heat, temperature https://youtu.be/o0HgOg94pg8 By calorimeter] https://youtu.be/SagNcyN1yUQ https://youtu.be/4OKy782ePKM	Copy and fill in the blanks for 13.1 -13.2 into the Chemistry Notebook

Physics

Copy the answers to Chapter 11B Section Review Questions in your science exercise book if you do not know the answers.

11B Section Review

1. Under what conditions will momentum be completely conserved in a collision between two objects?

   The only necessary condition for ensuring conservation of momentum in a collision is that no external forces may act on the system of colliding objects. (§11.7)

2. (True or False) If the only forces at work on a system are internal, momentum is conserved.

   True (§11.7)

3. Under what conditions will kinetic energy be conserved during a collision?

   Kinetic energy can be conserved only if the collision is completely elastic and momentum is conserved as well (i.e., no external forces act on the system of objects). (§11.8)

4. Following an off-center elastic collision between two objects, what is the vector sum of the objects' momenta?

   The vector sum of the objects' momenta after the collision should equal the vector sum of their momenta before the collision.

DS5. Describe the geometry and class of collisions evaluated in automobile crash tests.

   Most crash tests are two-dimensional, partially elastic collisions. Some may be nearly inelastic collisions. (§§11.9, 11.12–11.13)

DS6. What objectives do engineers and car manufacturers have when trying to decrease the impulse on passengers for any given collision?

   They can decrease the impulse on passengers by either decreasing the force of the crash, decreasing the time that the force is exerted, or both. (§11.13)

✪7. An air track glider of mass $m_1 = 1.80$ kg with an initial velocity of 1.20 m/s to the right collides elastically with a stationary glider of mass $m_2 = 5.00$ kg. Calculate the speed and direction of the two gliders after the collision.

Data:
$m_1 = 1.80$ kg
$v_{1\,bfr} = 1.20$ m/s right
$m_2 = 5.00$ kg

$$v_{1\,aft_x} = \left(\frac{m_1 - m_2}{m_1 + m_2}\right) v_{1\,bfr_x}$$

$$v_{1\,aft_x} = \left(\frac{1.80\text{ kg} - 5.00\text{ kg}}{1.80\text{ kg} + 5.00\text{ kg}}\right)(+1.20\text{ m/s})$$

$v_{1\,aft} \cong 0.5647$ m/s ($\cong 0.565$ m/s) to the left

$$v_{2\,aft_x} = \left(\frac{2m_1}{m_1 + m_2}\right) v_{1\,bfr_x}$$

$$v_{2\,aft_x} = \left(\frac{2(1.80\text{ kg})}{1.80\text{ kg} + 5.00\text{ kg}}\right)(+1.20\text{ m/s})$$

$v_{2\,aft} \cong 0.6352$ m/s ($\cong 0.635$ m/s) to the right

Portuguese	**Conteúdo:** TÃO E TANTO.**Objetivo:** Estudantes pode ser: * Diferenciar tão e tanto. - Tão e Tanto | Português On-ine. https://www.youtube.com/watch?v=7sMZqeHwyi8 - Click on Tão&Tanto to read the worksheet. (PDF) SWW 9 - Tão e tanto.pdf	QUIZ - Após assistir ao video, por favor clique (click) no link abaixo e responda as perguntas. https://forms.gle/NAx5KJz89TZQ6QE38

Homework_Day 2 (25 May 2021)

Subject	Click on the Youtube Links	Things to Note
English	**Article-a-Day Week → Korean Art** **How to get to your Article for Day 1** **Click →** www.readworks.org/student 1. **E**nter class code **55QG3L** 2. Click on YOUR NAME. 3. The default password is **1234.** 4. Click on one of the two articles you will like to read. **Remember:** Words are where humans store knowledge. So we build our knowledge by reading these articles. We will also increase our vocabulary, improve our reading stamina, and enjoy reading every day! **Read an article a day to find out more about Korean Art. After reading each article, type in the BOOK of KNOWLEDGE (minimum of 50 words) what new knowledge you have gained from the reading the article.** In your English exercise book, write the meaning of the words in blue found in the article (If any)	
Mathematics	Factor Theorem https://youtu.be/qMNFRlTMnzE View Answer to **Homework Exercise 1D #1a, d, 2 and 4**	**Homework Exercise 1D #1b, f, 6 and 8**
Chemistry	View Phase change. Enthalpy of fusion and vapourisation https://youtu.be/oc0ypeDELb0	Copy and fill in the blanks for 13.3 Enthalpy of Phase Changes into the Chemistry Notebook
Physics	Copy the answers to Chapter 11B Section Review Questions 8 to 10 in your science exercise book and study the solutions to check understanding. ✪8. An air track glider ($m_1 = 1.80$ kg) moving to the right collides with a stationary glider (m_2). What must the mass of the second glider be in order for its velocity after the collision to be 1.2 times the first glider's initial velocity? $v_{2\text{aft}_x} = \left(\frac{2m_1}{m_1 + m_2}\right) v_{1\text{bfr}_x}$ $(1.2)\cancel{v_{1\text{bfr}_x}} = \frac{2m_1}{m_1 + m_2}\cancel{v_{1\text{bfr}_x}}$ $1.2(m_1 + m_2) = 2m_1$ $m_2 = \frac{2m_1}{1.2} - m_1 = \frac{2(1.80\text{ kg})}{1.2} - 1.80\text{ kg}$ $m_2 = 1.20$ kg Data: $m_1 = 1.80$ kg $v_{2\text{ aft}} = 1.2 v_{1\text{ bfr}}$	

✪9. A 6.80 g bullet traveling at 1010 m/s to the right imbeds itself in a 3.00 kg cube of oak sitting on a fence post.

a. What is the velocity of the block-and-bullet mass after the impact?

$$p_{bfr} = p_{aft}$$
$$m_b v_{b_x} = (m_b + m_{block}) v_{aft_x}$$
$$v_{aft_x} = \frac{m_b}{(m_b + m_{block})} v_{b_x}$$
$$v_{aft_x} = \left(\frac{0.00680\ \text{kg}}{0.00680\ \text{kg} + 3.00\ \text{kg}}\right)(+1010\ \text{m/s})$$
$$v_{aft_x} = +2.284\ \text{m/s}$$
$$v_{aft} \cong 2.284\ \text{m/s}\ (\cong 2.28\ \text{m/s})\ \text{to the right}$$

Data:
$m_b = 6.80\ \text{g} = 0.00680\ \text{kg}$
$v_{b\,bfr} = 1010\ \text{m/s}$
$m_{block} = 3.00\ \text{kg}$

b. How much mechanical energy was converted to internal work, thermal, and other forms of energy at impact?

Lost energy is equal to change of kinetic energy of the bullet-block system.

$$\Delta K = K_{aft} - K_{bfr}$$
$$K_{bfr} = \tfrac{1}{2} m_b v_{b\,bfr}^2 + \tfrac{1}{2} m_{block} v_{block\,bfr}^2 = \tfrac{1}{2} m_b v_{b\,bfr}^2 + 0\ \text{kg·m/s}$$
$$K_{bfr} = \tfrac{1}{2}(0.00680\ \text{kg})(1010\ \text{m/s})^2 \cong 3468\ \text{J}$$
$$K_{aft} = \tfrac{1}{2} m_b v_{aft}^2 + \tfrac{1}{2} m_{block} v_{aft}^2 = \tfrac{1}{2}(m_b + m_{block}) v_{aft}^2$$
$$K_{aft} = \tfrac{1}{2}(0.00680\ \text{kg} + 3.00\ \text{kg})(2.284\ \text{m/s})^2 \cong 7.842\ \text{J}$$
$$\Delta K = K_{aft} - K_{bfr} = 7.842\ \text{J} - 3468\ \text{J}$$
$$\Delta K \cong -3460.1\ \text{J}\ (\cong -3460\ \text{J})$$

	✪10. A 0.250 kg air table puck traveling at 1.00 m/s to the right rebounds elastically off of a 2.00 kg stationary puck. The first puck rebounds with a velocity of 0.870 m/s at an angle of +60.° from the positive *x*-axis. What is the velocity of the second puck after the collision? **Data:** $m_1 = 0.250$ kg $v_{1\,bfr} = 1.00$ m/s right $v_{1\,aft} = 0.870$ m/s at 60.° $m_2 = 2.00$ kg $v_{2\,bfr} = 0$ m/s $p_{bfr} = p_{aft}$ **Solving for the *x*-components:** $m_1 v_{1bfr_x} + m_2 v_{2bfr_x} = m_1 v_{1aft_x} + m_2 v_{2aft_x}$ $v_{2aft_x} = \frac{m_1 v_{1bfr_x} - m_1 v_{1aft_x}}{m_2}$ $v_{2aft\,x} = \frac{(0.250\text{ kg})(1.00\text{ m/s}) - (0.250\text{ kg})(0.870\text{ m/s})(\cos 60.°)}{2.00\text{ kg}}$ $v_{2aft\,x} \cong +0.07062$ m/s **Solving for the *y*-components:** $m_1 v_{1bfr_y} + m_2 v_{2bfr_y} = m_1 v_{1aft_y} + m_2 v_{2aft_y} \Rightarrow m_2 v_{2aft_y} = -m_1 v_{1aft_y}$ $v_{2aft_y} = \frac{-m_1 v_{1aft_y}}{m_2}$ $v_{2aft\,y} = \frac{-(0.250\text{ kg})(0.870\text{ m/s})(\sin 60.°)}{2.00\text{ kg}}$ $v_{2aft\,y} \cong -0.09418$ m/s **Determine the final speed of the second puck:** $v_{2aft} = \sqrt{v_{2aft_x}^2 + v_{2aft_y}^2} = \sqrt{(+0.07062\text{ m/s})^2 + (-0.09418\text{ m/s})^2}$ $v_{2aft} \cong 0.1177$ m/s **Determine the direction of the second puck:** $\alpha_{v_{2aft}} = \tan^{-1}\left(\frac{\lvert -0.09418\text{ m/s}\rvert}{\lvert +0.07062\text{ m/s}\rvert}\right) \cong 53.13°$ **Since $v_{2\,aft}$ is in quadrant IV,** $\theta_{v_{2aft}} = 360° - \alpha_{v_{2aft}}$ **or just** $-53.13°$ **$v_{2\,aft} \cong 0.1177$ m/s ($\cong 0.118$ m/s) at $-53.13°$ ($\cong -53.1°$) from the positive *x*-axis**	
Portuguese	**Conteúdo:** 100 PERGUNTAS DE GEOGRAFIA. **Objetivo:** Estudantes pode ser: • Testar os conhecimentos sobre países, lugares, etc. Geografia – teste do países, lugares, etc. https://www.youtube.com/watch?v=Ff9tbFtyvBY	QUIZ - Após assistir ao video, por favor clique (click) no link abaixo e responda as perguntas. https://forms.gle/Fjkd7YAfAdWxhvMP7

Devotion	Listening to God's Plan (by Nick Vujicic) https://www.youtube.com/watch?v=NNhR-4KetoQ	What is the Formula to knowing God's plan for you in your life? 1. Take one day at a time w____ G_____ by your side, and 2. Ask Him to g_____ you and l_____ you. 3. Keep on p_____. 4. Keep on r_____ your B_____ 5. Do your b_____ and God will show you the r_____. Write the formula in your English Exercise book.

Homework_Day 3 (26 May 2021)

<table>
<tr><th>Subject</th><th>Click on the Youtube Links</th><th>Things to Note</th></tr>
<tr><td>English</td><td colspan="2">Refer to the notes on Unit 7: Focus on Writing and Speaking Skills

Complete Section B Use of English Question 1 in the worksheet given.

B Use of English
1 Look at these sentences using relative pronouns:
I am a student who is studying English.
The good talkers, whom you admire, know these rules.

Write complete sentences using the correct relative pronoun. You will need to use some pronouns more than once.
There is a film on at the cinema — who — people play tennis.
A fireman is a person — which — they got married?
Is this the article in the newspaper — that — I would like to see.
Do you know the reason — where — he left the room so quickly?
Do you think they would forget the day — when — makes things with his hands.
A cathedral is a place — why — passed all her exams.
That was the girl — whom — talks about the best hotels?
The carpenter is a craftsman — do you wish to speak?
To — is usually quiet and peaceful.
Wimbledon is a club</td></tr>
<tr><td>Mathematics</td><td>Factor Theorem
https://www.youtube.com/watch?v=oMJpOSroVJE

Answer to Homework Exercise 1D #1b, f, 6 and 8</td><td>Homework Exercise 1D #1c,e 5 and 9</td></tr>
<tr><td>Chemistry</td><td>View 13.4 Specific heat
https://youtu.be/qDrcHR4tSdE</td><td>Copy and fill in the blanks for 13.4 Specific Heat into the Chemistry Notebook</td></tr>
<tr><td>Physics</td><td>Section 11C Center of mass
Explosions and Center of Mass
https://www.youtube.com/watch?v=1lhAD88fWG8

Read Textbook page 257</td><td>Copy the solution of Example 11-9 (page 258) in your exercise book.
Do 11C Section Review Questions 1 and 2</td></tr>
<tr><td>Portuguese</td><td>Conteúdo: TUDO OU TODO.
Objetivo: Estudantes pode ser:
* Diferenciar tudo e todo.

- Tudo ou todo
https://www.youtube.com/watch?v=uT9YvLxYX8c</td><td>QUIZ - Após assistir ao video, por favor clique (click) no link abaixo e responda as perguntas.

https://forms.gle/9vcoLCLB77vsQrB76</td></tr>
</table>

Homework_Day 4 (27 May 2021)

Subject	Click on the Youtube Links	Things to Note
English	**Article-a-Day Week → Korean Art** **How to get to your Article for Day 2** **Click →** **www.readworks.org/student** 1. **E**nter class code **55QG3L** 2. Click on YOUR NAME. 3. The default password is **1234.** 4. Click on one of the two articles you will like to read. **Read an article a day to find out more about Korean Art. After reading each article, type in the BOOK of KNOWLEDGE (minimum of 50 words) what new knowledge you have gained from the reading the article.** In your English exercise book, write the meaning of the words in blue found in the article (If any)	
Mathematics	Factorisation of Cubic Expressions View https://youtu.be/vUNgcN6MbjA	Copy Worked example 12 Practise Now 12 #1, 2
Chemistry	View 13.5 Enthalpy (Heat) of Reaction https://youtu.be/qD7PDOhqbpM	Copy and fill in the blanks for 13.5 Enthalpy (heat) of Reaction into the Chemistry Notebook
Physics	Section 11C Angular momentum https://www.youtube.com/watch?v=iWSu6U0Ujs8 Read Textbook pages 259 and 260	With the help of the glossary (pages 710 to 728) Write down the definitions of the following words in your science exercise book: - Center of mass - Angular momentum Do 11C Section Review Questions 3 and 4
Portuguese	**Conteúdo:** VOCABULÁRIO DE COZINHA. **Objetivo:** Estudantes pode ser: • Identificar os nomes das coisas na cozinha.	Escreve 5 coisas da cozinha e traduz com língua Inglês.

	– 46 Things in the kichen in portuguese https://www.youtube.com/watch?v=pNcr2CLxLPA	
PE/Health	**SPMS (Timor-Leste): How to prevent the spread of COVID-19** Watch the Video by Dr Linus and fight the COVID-19 Pandemic together. https://www.youtube.com/watch?v=fhafmmN04i8	List the 4 important ways we can do to help prevent the spread of the virus. 1. W_____ a m_____ 2. W_____ y_____ h_____ 3. S_____ d_____ 4. G_____ V_____ (if suitable and available)

Homework_Day 5 (28 May 2021)

Subject	Click on the Youtube Links	Things to Note
English	**Readworks.org** **Click → www.readworks.org/student** 1. Enter class code **55QG3L** 2. Click on YOUR NAME. 3. The default password is **1234.** Read the story "**The Teen Who Won a Nobel Prize"**. Build up your vocabulary, answer the questions and submit. If you score less than 3 out of 5, you will have to redo the questions. Write down the meaning of the following words found in the passage in your English Exercise book - Oppressions - Fiercely - Conviction -	
Mathematics	Synthetic division https://youtu.be/WRkgMDVIETE	Try Practise Now #1, 2 using synthetic division
Chemistry	13.6 Enthalpy (Heat) of Formation 13.7 Enthalpy (Heat) of Combustion 13.8 Calculating Enthalpies of Reaction	Copy and fill in the blanks for 13.6- 13.8 into the Chemistry Notebook
Physics	11C Center of Mass and Angular Momentum Recap on Angular momentum https://www.youtube.com/watch?v=MULe4xv3lVk	Do 11C Section Review Questions 5 and 6 Try to answer on your own based on what you have read in the textbook.
Portuguese	- Basics portuguese https://www.youtube.com/watch?v=Yjq5eJn530Y	Copia 10 frases em Portuguese e traduz para Inglês